

PROVISIONAL **PATENTS**

**The 90-Minute Guide
to Filing Your
Own Application**

John S. Ferrell, Esq.

15th
EDITION

Provisional Patents

The 90-Minute Guide to Filing Your Own Application



JOHN S. FERRELL, ESQ.

FIFTEENTH EDITION

ALSO BY JOHN S. FERRELL



Monopoly Protection
The 90-Minute Guide to Patents, Trademarks, Copyrights,
and Trade Secrets

*This book is dedicated with love to my parents,
Paul and Jeanne; and to my children,
Ashley, Kristin, and Benjamin; and
to my life partner Cecilia.*

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Provisional Patents
The 90-Minute Guide to
Filing Your Own Application

INTRODUCTION



In a perfect world, my advice to you would be that when legal issues are complex or important, hire the best attorney you can find. Haircuts, appendectomies, and patent matters are best left to skilled and practiced professionals.

Ours is not a perfect world, though, and for bootstrappers, emerging entrepreneurs, and other pre-funded venturers, it is sometimes necessary to compromise with self-help. So before you give yourself a bad haircut, I offer this collection of instructions, samples and forms to get you started in the right direction for filing your own provisional patent application.

Prior to taking scissors in hand, however, let me provide you with some simple advice about filing your own application: proceed methodically and use the checklists provided at the end of this volume. The process is not unlike assembling a child's swing set. Almost anyone who owns a screwdriver can do it, but it goes a lot faster if you follow directions. Although the process is not complicated, it is very easy to skip a step or leave out a part, and the penalties for carelessness include added frustration, increased cost, and—in the extreme case—complete failure.

There will be those cases when an invention is being published

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or demonstrated in public and an application must be filed immediately. This is not a good time to try filing your first case. If, however, you have some patience and a little time, filing a provisional patent application is well within the skill set of most inventors.

Perhaps you are not a do-it-yourselfer at all, just curious about patents and the patent process. You, too, will find this book to be a useful resource. Consider the following anecdote.

One of life's true indulgences is the chocolate soufflé served at Roy Yamaguchi's restaurants. Constructed of a light chocolate shell with a molten quadruple bypass chocolate center, this incredibly rich, high calorie, high cholesterol, exquisitely sweet dessert should probably only be consumed under a doctor's supervision. Yet once tried, it is unimaginable to consider visiting Kauai, Carmel, San Francisco, or another Yamaguchi destination without a visit to Roy's. Interestingly, the complete instructions for baking this tasty delight can be found at Roy's website, www.roysrestaurant.com. I have visited the website several times to study the ingredients and the process, and to admire the pictures. I am fascinated by how the ingredients are put together, but even with the recipe, I am more likely to try to remove my own appendix than to attempt to bake a soufflé at home.

So, even if writing and filing your own provisional patent application is not a short-term goal of yours, you may still find the patent system and process intriguing, as I do. To satisfy your interest, Chapters 1-3 discuss patents and the role of provisional patent applications in detail and hopefully will help you understand

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and more fully appreciate the process. This understanding should also help you be a more effective consumer of legal services if you choose to forego self-help.

See the Appendices for samples, forms, and other documents.

In addition to providing all of the necessary forms, this book is intended to be the equivalent of a one- or two-hour office visit with a patent attorney, walking you through the steps of understanding, preparing, and filing a provisional patent application.

This book provides:

- An explanation of patents
- A detailed review of provisional applications
- Instructions for writing the specification and preparing the figures
- A sample provisional application and its corresponding issued patent
- The set of filing documents and checklists needed to file a provisional application
- Several sample letters help you meet potential licensees for your invention
- A sample non-disclosure agreement
- A resource list for more help and information

Many of the application forms provided for corresponding with the government are also available online at various government websites. A list of URL addresses is provided in Chapter 9 for your convenience. I encourage you to check the US Patent and

INTRODUCTION

Trademark Office (USPTO) website (www.uspto.gov) before filing any form, just to make sure a revision has not been issued. This is especially true where the form requires payment of a fee. For the most part, government agencies are fairly forgiving when they receive filings using recently outdated forms. The Internet, however, makes it easy for you to stay current. Samples are included for many of the forms in this book, which provide examples of how to fill in the various blanks. If you get stuck on any of the filing forms, you can get help by contacting the USPTO directly.

INTRODUCTION



US006257248B1

(12) United States Patent
Yeh

(10) Patent No.: US 6,257,248 B1
(45) Date of Patent: Jul. 10, 2001

(54) BOTH HAND HAIR CUTTING METHOD

(76) Inventor: Wen-Ya Yeh, No. 18 Chuney - Hsueh Road, Tainan City (TW)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/459,227

(22) Filed: Dec. 10, 1999

(51) Int. Cl.⁷ A45D 24/34; A45D 24/00

(52) U.S. Cl. 132/213; 132/213.1; 132/200

(58) Field of Search 132/213, 213.1, 132/214, 212, 200; 30/254, 255, 256, 30

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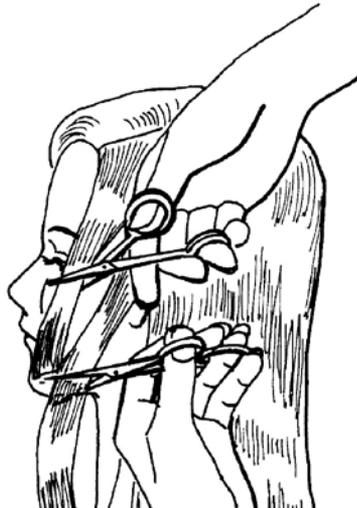
* cited by examiner

Primary Examiner—John J. Wilson
Assistant Examiner—Robyn Kieu Doan
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(57) ABSTRACT

A both hand hair cutting method is for hairdressers to hold proper tools, such as scissors, razors, electric cutters, plural scissors, in a right hand and a left hand to perform cutting at the same time or not at the same time, depending on personal hair quality, hair quantity, length and needed styles. The lower levels of the right side and the left side of hair can be cut to have the same directions, and cutting the angle of hair, combing hair, and trimming the lower ends of hair can be easily performed by a hairdresser according to this method. The hairdresser is not disturbed by the head shape, the ears, the shoulders, and the hair length of a customer. The hair can be cut with fastness, enabling the finished hair style to look soft, natural and beautiful.

20 Claims, 13 Drawing Sheets



INTRODUCTION

■ CHAPTER ONE ■

PATENT BASICS



Utility, design, and plant patents provide temporary monopolies for creators of useful or ornamental inventions. A patent serves as a protection to prevent others from making, using, selling, or offering to sell the invention without authorization for a fixed time period—twenty years in the case of utility patents. This protection affords the patent owner an opportunity for economic reward and also serves as an incentive to continue creating other inventions for even further financial gain. In exchange for this protection, the patentee must disclose detailed information to the public regarding the invention, to be used freely by all once the patent monopoly expires. Patent protection is a bargain struck between the public and an inventor—the almost complete and unfettered protection of temporary exclusivity for an invention, in exchange for explicit written instructions on how the invention can be made and used after the expiration of the patent term.

Types of Patents

Three types of patents are granted in the United States: utility patents, design patents, and plant patents. Utility patents protect systems, methods, apparatuses or structures, and compounds;

design patents protect novel designs; and plant patents protect asexually reproducing plants.

Utility Patents

Utility patents are the broad machine and process patent grants we often think of when considering invention protection; these are the workhorses of intellectual property (IP) protection. Utility patents protect the structure and functionality of a product—how the product is made, how it works, and how it is used.

Although utility patents are expensive and time-consuming to secure, the protection they afford patented inventions can be quite broad and difficult to challenge. Utility patents are usually issued from two to three years after the filing of a patent application and are valid for twenty years from the date of the filing.

Design Patents

Design patents protect ornamental features. Tremendous amounts of effort and engineering often go into the aesthetic development of commercial products. Whether the product is a toothpaste container or a kitchen appliance, hundreds of hours are often spent modeling and prototyping its look and feel.

For instance, the Polycom SoundStation® speakerphone popular in US conference rooms is protected by a design patent issued in 1993. At about one-fifth the cost of a utility patent, a design patent issues within a year from filing and is valid for fifteen years from the date of issue. Because of the relatively low cost and prompt issuance, design patents are an excellent IP protection value.

Plant Patents

US patent laws authorize plant patents for the protection of new and distinct varieties of asexually reproducing plants. Like utility patents, plant patents are valid for twenty years from the date of filing, and the published patents are usually quite notable for the beautifully colored photographs that frequently accompany the applications.

Plant patents afford their owners the same exclusive rights as any other patent, but a critical element to note is that the plant must be asexual, meaning that the plants must make exact copies of themselves when they reproduce. Other federal statutes protect sexually reproducing plants, thereby providing broad protection for those involved in agriculture research and development.

Types of Patents

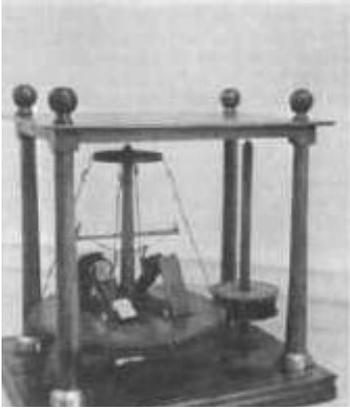
Utility Patent - protects new, useful, and non-obvious inventions; common inventions include machines, processes, chemical compounds, and articles of manufacture.

Design Patent - protects new, ornamental, and non-obvious designs, particularly industrial designs of products.

Plant Patent - protects asexually reproducing plants.

What Can Be Patented?

Nearly anything can be patented. Machines, medicines, computer programs, articles made by machines, compositions, chemicals, biogenetic material, and processes all can be the subject matter for a US patent. To get some handle on the contours of patentability,



Although many have tried, no perpetual motion machines have ever been patented.

it is sometimes easier to think of the things that cannot be patented.

Laws of nature cannot be patented. Had Isaac Newton been struck by a falling apple in northern Georgia or central Washington State, his discovery of gravity would not have been proper subject matter for a US patent application. Gravity is a law of nature, as are entropy and the theory of general relativity.

Materials for atomic weapons cannot be patented, presumably because the US Congress prefers not to have their recipes available for public consumption. Articles contrary to the public good are not patentable. And, since assisting suicide is a crime in all of the United States, machines dedicated to facilitating suicide would not be patentable.

Aside from these few exceptions, virtually anything that is new, useful, and non-obvious can be patented. To fully appreciate the bizarre range of inventions accepted by the USPTO, visit the



US00D342732S

United States Patent [19]
Hinman et al.

[11] **Patent Number: Des. 342,732**

[45] **Date of Patent: ** Dec. 28, 1993**

[54] **SPEAKER PHONE**

[75] **Inventors:** Brian Hinman, Los Gatos, Calif.;
 Scott Wakefield, Andover, Mass.

[73] **Assignee:** Polycom, Inc., San Jose, Calif.

[**] **Term:** 14 Years

[21] **Appl. No.:** 903,543

[22] **Filed:** Jun. 23, 1992

[52] **U.S. Cl. D14/150**

[58] **Field of Search D14/140, 142, 149, 150,**
 D14/240, 243, 188, 189, 217, 218; 379/202, 419,
 440, 428, 434

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Primary Examiner—Alan P. Douglas
Assistant Examiner—Jeffrey Asch
Attorney, Agent, or Firm—John S. Ferrell

[57] **CLAIM**

The ornamental design of the speaker phone, as described and shown.

DESCRIPTION

FIG. 1 is a perspective view of the speaker phone showing our new design;
 FIG. 2 is a top view of the speaker phone;
 FIG. 3 is a front view of the speaker phone;
 FIG. 4 is a side view of the speaker phone the opposite side being a mirror image thereof;
 FIG. 5 is a back view of the speaker phone; and,
 FIG. 6 is a bottom view of the speaker phone.
 The circular apertures schematically depicted in the circular feature at the top in FIGS. 1-5 are continuous throughout.

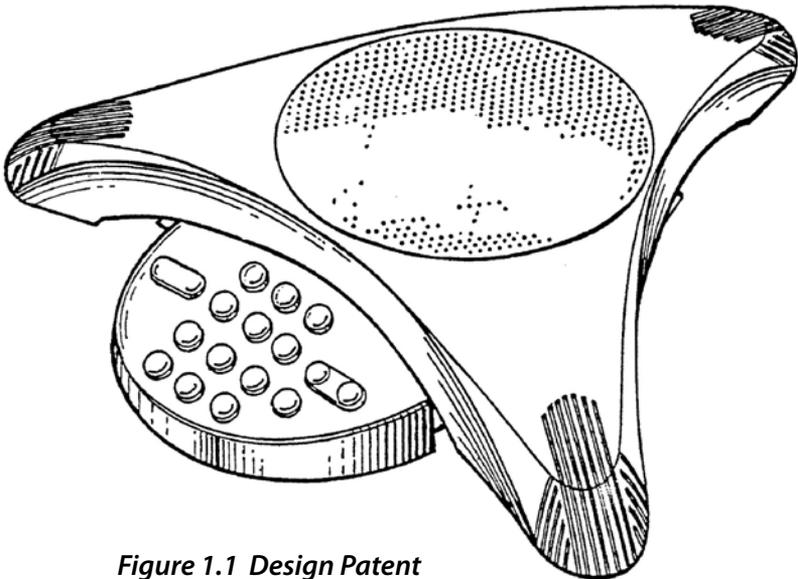


Figure 1.1 Design Patent

online patent database at www.uspto.gov.

Why Do Patents Matter?

Patents are critically important to many kinds of businesses, particularly businesses that rely on technology and innovation, for competing effectively. The evolution of products in these types of industries tends to be so rapid and persistent that it can be quite challenging just to keep up with that evolution, not to mention protecting the ingenuity in a timely manner. Nonetheless, the protections that a patent offers can bestow five major benefits upon businesses.

First and foremost, patents establish limited monopolies for their owners. These monopolies often allow a company a quiet period of up to two decades to reap the exclusive benefits of resources invested in research and product development.

A second benefit of patents is that they protect inventions from unexpectedly leaving the company. Like a ball and chain tethered to the technology, the patent prevents ex-employees, customers, and competitors from taking the innovation and

Patents often enable product monopolies and allow inventors to control markets.

marketing it in the form of their own competing products.

Third, patents are a tangible measure of research and product development output. Patents enable companies to keep track of how effectively their research efforts are producing innovative ideas and are an excellent way of memorializing and organizing these inventions.

PATENT BASICS

Fourth, patents provide any business in a competitive industry with a defensive bargaining chip to exchange in the event that a business finds itself the target of someone else's patent. Since patent owners may completely exclude others from practicing their inventions, an infringer's mere payment of money to a patent owner may not be sufficient to enable the infringer to stay in business. Often the threat of a patent counterclaim and the resulting exchange of patent rights is the only way aggressive competitors can coexist. Without patents, operating a technology business in a crowded market is akin to swimming in a shark tank with a nosebleed.

Finally, patents allow sophisticated entrepreneurs and businesses to exercise control over their markets. With well-planned patent filings, a company may be able to control its destiny and greatly impact its competitors' futures. This process, which I call *strategic patenting*, looks at a company's product plans along with the key competitors' product roadmaps and patent portfolios. For examining the company's own product plans, this process may include the following initial questions:

- What are the key technologies needed to extend current products into the future?
- How can we control these technologies and prevent others from hijacking our roadmap?
- Where can we get missing technologies needed to extend the product plan?

Applying for Patents

The patent process begins with the step of identifying an invention, which, for purposes of patent protection, must be new, useful, and non-obvious.

Patentable inventions do not need to be Nobel Prize material; they merely need to have some modest amount of utility. From a

Patents should be viewed as business tools, not technology awards.

practical perspective, however, resources should not be wasted seeking patents of little or no commercial value. You will recall that patents grant the right to exclude others from practicing an

invention. If there is no commercial value to an invention, the expense of a patent would be wasted, since there will likely be no competitors to exclude.

When deciding what to patent, a useful step is to observe the features in the product that would make customers want to purchase it. Ask the question: What differentiates my product from those products manufactured and sold by others? These are the features that should be considered for patent protection.

Patents for technologies that are buried deep within a product (also called *stealth inventions*) are often not useful, since it may be impossible to determine whether anyone is actually infringing upon the patent. For the patent to be valuable, it should not only

Avoid wasting resources on patenting "stealth inventions."

cover features that provide a business advantage or distinguish a product from a competitor's product, but also cover features that have characteristics that

PATENT BASICS

are detectable by the patent owner. It is important to be able to determine relatively easily whether a competitor's product utilizes the patented technology and thus infringes the patent.

For example, a computer program may execute a series of incredibly efficient calculations that produce some result. Although these calculations may be extremely novel and unique, having a patent on these calculations would not be useful if it was not possible to determine whether the computer was actually implementing the calculations. Although it is true that the patent owner would have the right to exclude others from practicing this stealth invention, it might be extremely difficult or impossible for him to ever know whether an actual infringement was occurring. On the other hand, if, as a result of the calculations, a computer screen produced a specific display that could have only been produced by these calculations, then patenting the calculations would be useful since simple inspection would determine if the calculations were being infringed. So, an important aspect of deciding what to patent is the feasibility of detecting whether others are truly infringing upon the patent.

Once a patentable invention is identified, it is important to isolate the inventive feature(s), often called the *point of novelty* of the invention. It is this point of novelty that will form the basis for the patent application.

The normal process of preparing and filing a nonprovisional patent application includes a meeting with a patent attorney or registered patent agent to discuss the invention and to identify the points of novelty. Following this meeting, the attorney may then

PATENT BASICS

take several weeks to draft the patent application, after which the inventor reviews and edits the application for filing. The patent application consists of a set of figures or drawings, a detailed description of the invention, and a set of claims that very precisely set forth the scope and contours of the invention.

Approximately twelve to eighteen months after the patent application is filed with the USPTO, an examiner at the USPTO will review the application and search for other related patents and publications to determine whether the invention is novel

Patent applications are published by the USPTO eighteen months after their original filing. Once filed, patents often take two to three years to issue.

and non-obvious. After the search and examination processes are complete, the patent examiner will return comments in the form of an office action. This usually invites the applicant to provide arguments distinguishing the claims of the application from the teachings of prior patents and publications, which were identified during the examiner's

search. On average, a patent application requires from two to three years to mature from an initial filing to a granted and issued patent. After a total of about three years, a US utility patent is issued and remains valid for a period of twenty years following the initial filing date of the patent. In order to keep the patent enforceable following issuance, the inventor or subsequent owner is required to pay maintenance fees to the USPTO at regular intervals.

The costs of preparing and filing patent applications can vary dramatically based on such factors as the technology of the

PATENT BASICS

invention, the skill and experience of the attorney or agent preparing the application, and the involvement of the inventor in the process. Simple mechanical patent applications, in many cases, can be prepared for less than \$10,000, while the costs associated with preparing some pharmaceutical-related applications can exceed \$20,000. After the patent application is filed, an additional \$5,000 to \$15,000 or more will likely be spent on the patent while responding to the USPTO and amending the application for allowance prior to issuance. Several more thousands of dollars will be spent on the issue fee and maintenance fees over the twenty-year life of the patent.

Utility patents are valid for up to twenty years from the date of filing.

Although they can be incredibly valuable, patents are not cheap. Whether an application is self-prepared or prepared by a premier patent firm, a patent can make expensive wallpaper if not reserved for commercially viable inventions. Before committing the time and money to the patent process, consider carefully whether the potential economic return justifies the investment.

PATENT BASICS

■ CHAPTER TWO ■

WHAT IS A PROVISIONAL PATENT APPLICATION?



Provisional Patent Applications

In addition to the regular patent application procedure described in Chapter 1, it is possible to file what is called a provisional patent application. A provisional patent application can be thought of as a placeholder application. It has many of the advantages of a regularly filed, nonprovisional patent application, but it differs in at least two important ways.

A provisional patent application can be thought of as a placeholder application.

The first difference between a provisional patent application and a nonprovisional patent application is that provisional applications have reduced formality requirements. Provisional patent applications are not subject to specific formatting or organization requirements like nonprovisional applications. Text and figures can be handwritten, there is no spelling requirement, no need to discuss prior art, no requirement for a summary or an abstract, and—most significantly—no

Provisional applications have reduced formality requirements.

WHAT IS A PROVISIONAL PATENT APPLICATION?

requirement for patent claims, which are essential in order to receive a filing date for a nonprovisional application.

The second major difference between a provisional patent application and a nonprovisional application is that once filed, the provisional application is never actually examined by the USPTO. The provisional application enables filing a simplified invention disclosure to secure a fixed date for purposes of both

The provisional application, once filed, is never actually examined by the USPTO.

US and foreign priority. Provisional applications can provide a less expensive, expeditious, and informal mechanism for driving an early stake in the ground for claiming rights to an invention.

This informality, however, includes significant traps for the uninitiated and the careless. There are two essential requirements that absolutely must be adhered to in provisional patent applications. First, the specification (the written description of the invention) must provide a complete explanation of the

The specification must provide a complete explanation of the invention.

invention. Secondly, the specification must teach the best mode for practicing the invention (the inventor's preferred embodiment). Despite the leniency in precision and formality that the USPTO permits in provisional patent filings, there remains a need for the inventor to completely disclose the invention.

The Many Advantages of Provisional Filings

The reduced formality threshold of provisional patent

WHAT IS A PROVISIONAL PATENT APPLICATION?

application filings offers a number of significant advantages to the inventor and entrepreneur. The first advantage is cost. Since the formality requirement for a provisional application is significantly less than a nonprovisional application (less attention needs to be paid to form and format), the cost of preparing and filing a provisional application can be considerably reduced. This is particularly true when an entrepreneur has put together a write-up of the invention, including a complete set of figures describing his invention, and is able to either file his own application or turn the materials over to a patent attorney for filing with very little revision required.

The simplified formality requirements of the provisional application can reduce initial investment costs.

Since the provisional application delays the need to file a nonprovisional patent application for twelve months, or fourteen months with a petition, this pendency period can be used to evaluate the merits of the invention. For a small entrepreneur, this might mean twelve months in which to seek either a licensee for the invention or funding to proceed with product development. For larger companies, the use of provisional patent applications enables a twelve-month period during which to decide which application(s) will provide the greatest value to the company and deserve(s) further investment.

A provisional application delays the need for a nonprovisional patent application for twelve months.

A second advantage to filing provisional applications is that

WHAT IS A PROVISIONAL PATENT APPLICATION?

they authorize the inventor to use the “patent pending” notice in connection with the invention. It is against the law in the United States and in many foreign countries to affix a “patent pending” notice to a product or an invention in which there is no patent pending. In the United States, the Federal Government may sue a company for improperly labeling a product in this way, a crime that carries a fine of \$500 per offense. Additionally, a person suffering competitive injury due to improper labeling

The “patent pending” notice can be used in connection with the invention once the provisional application is filed.

may file a civil lawsuit for adequate compensation. The use of the “patent pending” label provides an aura of legitimacy and novelty to a product, and it may create a chill in the marketplace for other developers of similar products who see the product and recognize that

a patent is pending. No product developer or manufacturer wants to go through the effort of developing a product only to find that shortly after he begins sales, someone else is granted a patent covering technologies in the product that will force him to cease production.

The provisional application process provides foreign priority for subsequent patent applications filed in countries that are signatories to the Paris Convention, a third advantage of the process. The Paris Convention is an agreement among most of the commercially important countries of the world (as of September 2014, 176 countries are members), which recognizes patent priority in each of those signatory countries. For example, filing a

WHAT IS A PROVISIONAL PATENT APPLICATION?

patent application in the United States establishes a filing date that will also be recognized in other Paris Convention countries. This is especially important in foreign countries because most countries issue patents to the inventor who first files his patent application in that country. In this sense, we refer to most countries as requiring a *race to the patent office*—that is, the first inventor to file a patent application wins the patent. On March 16, 2013, however, the United States moved to a first-inventor-to-file system and joined the countries requiring a race to the patent office. Filing a patent application in the United States creates a priority date, which can be used to establish priority in any Paris Convention country, assuming that the inventor also files one or more patent applications in any of those Paris Convention countries within one year of the US filing date. Although this can be an important feature of the provisional patent application process, foreign patent applications are very expensive and should only rarely, if ever, be sought by the first time inventor or start-up entrepreneur.

A provisional application provides foreign priority for later patent applications filed in Paris Convention countries.

A fourth advantage in filing a provisional application is that it enables immediate commercial promotion of the invention. An almost universal fear among inventors is that their inventions will be stolen from them and commercially exploited. For small inventors and would-be entrepreneurs, the fear of having someone steal their invention can instill paralysis and inhibit the idea sharing and promotion that are essential for commercial success. Filing a patent

WHAT IS A PROVISIONAL PATENT APPLICATION?

application, whether provisional or nonprovisional, potentially enables the creation of a monopoly which, upon patent issuance, will allow the patent holder to exclude others from making, using, or selling products embodying the invention. By filing a lower-cost provisional application at the earliest possible date, the inventor will be able to begin promoting the invention, seeking licensees and partners, and raising money to develop and commercially exploit the technology. From this standpoint alone, provisional applications can be extremely valuable to the small inventor.

For larger companies, provisional patent applications enable discussions with manufacturers and vendors at an early stage, with reduced concern that the technology will be stolen and sold to competitors. Inventors can also use non-disclosure agreements to contractually prevent confidantes from disclosing or otherwise using the technology. Non-disclosure agreements should only be used with those who can be trusted to keep the confidence. If a recipient of confidential information discloses that information without authorization, the genie is out of the bottle notwithstanding any non-disclosure agreement, and there may be no duty on the part of information-receiving third parties to honor the original non-disclosure agreement.

A fifth advantage of the provisional patent application is that this is a relatively efficient and cost-effective way of protecting an invention during the early development process. One of the features of provisional patent applications is that multiple provisional applications can be referenced by a later-filed nonprovisional application, combining ideas into a single document. This can be

WHAT IS A PROVISIONAL PATENT APPLICATION?

particularly useful when an invention is undergoing development.

For example, an invention might originally start out as a backyard lawn chair for poolside use (Figure 2.1). After completing the initial design of the lawn chair, the inventor files a provisional patent application and construction of the lawn chair begins. Some weeks later, the inventor realizes that carefully selected construction materials can enable the lawn chair to float. A second provisional patent application is then filed, including the improvement of constructing the lawn chair out of a buoyant material. As additional, if not contrived, improvement to the now-floating lawn chair, the inventor adds cup holders, an ice chest and other conveniences, for which a third provisional patent application is filed. At any time until the one-year anniversary strikes midnight for the first provisional patent application, the inventor can incorporate all three provisional applications into a single nonprovisional application, claiming priority for each of the improvements from their respective filing dates. While invention and development continues, this successive filing process is an inexpensive way of collecting improvements within one patent application.

A sixth benefit of filing a provisional patent application is that the provisional filing effectively can add an additional year to the term of the patent grant. Since a patent's term is twenty years from the date the nonprovisional application is filed, starting the process with a provisional application potentially shifts the expiration of the patent out by one year to twenty-one

Multiple provisional applications may be incorporated into a single nonprovisional application.

WHAT IS A PROVISIONAL PATENT APPLICATION?

United States Patent [19]

[11] **Patent Number:** **4,986,781**

Smith

[45] **Date of Patent:** **Jan. 22, 1991**

- [54] **FLOATING LOUNGE**
- [76] **Inventor:** Frederick C. Smith, R.R. 2, Box. 296A, Perkasic, Pa. 18944
- [21] **Appl. No.:** 217,216
- [22] **Filed:** Jul. 11, 1988
- [51] **Int. Cl.³** E04H 3/18
- [52] **U.S. Cl.** 441/130; 4/542
- [58] **Field of Search** 4/492, 541, 542, 543; 441/129, 130, 133, 136, 35

4,468,822 9/1984 McKay 4/492
 4,754,502 7/1988 Bowen 4/542

Primary Examiner—Joseph F. Peters, Jr.
Assistant Examiner—Edwin L. Swinehart
Attorney, Agent, or Firm—Joseph W. Molasky & Assocs.

[57] **ABSTRACT**

A floating lounge for use in a swimming pool or the like is disclosed. The floating lounge has a lounge body that is adapted to support a person in a reclined position while floating in water. The lounge body has an enclosed fluid distribution chamber and orifices distributed throughout the top surface thereof for delivering small jets of fluid under pressure onto a person supported on the lounge body in a reclined position to provide a massage-like action.

[56] **References Cited**
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5 Claims, 2 Drawing Sheets

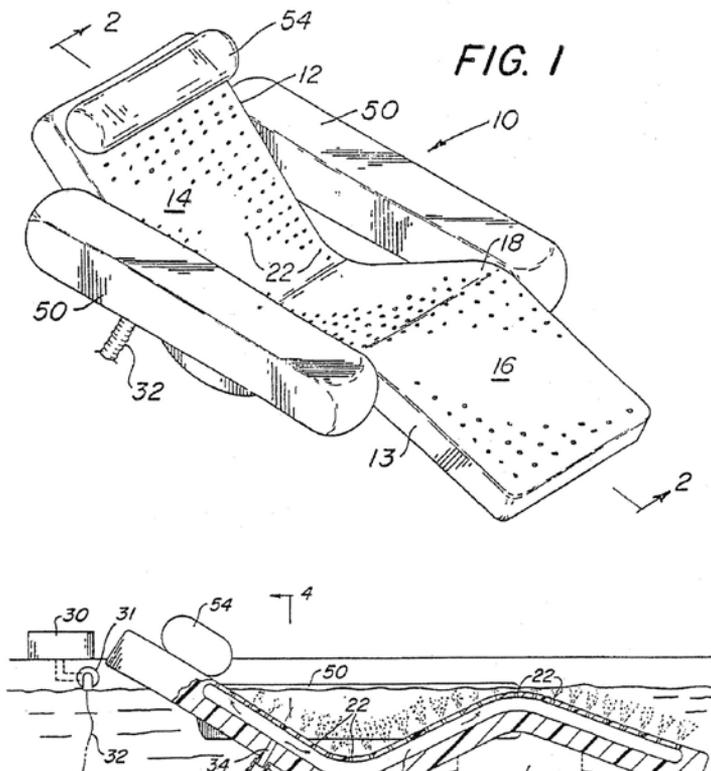


Figure 2.1 Floating Pool Chair

WHAT IS A PROVISIONAL PATENT APPLICATION?

years after the filing of the provisional application. Although for many inventions this extra year at the end of the term is of little consequence, certain inventions, such as prescription drugs, are most valuable toward the end of their patent terms, as marketing and time have worked to increase product demand.

Who Might Use Provisional Patent Applications?

For many entrepreneurs, especially in the technology sector, inventions are a bit of a lottery ticket. On the downside, the likelihood of any single invention generating incredible wealth is quite small, while on the upside, the rewards from a successful invention can be quite large, both to the entrepreneur and to society. In fact, it is this potential for the upside that drives the entrepreneur to be successful, working on an idea that he knows and fervently believes will result in a tremendously rewarding technology company, if only timing, limited money, and market conditions perfectly come together.

Technology giants such as Hewlett-Packard [Figure 2.2(a) and 2.2(b)] and Apple Computer (Figure 2.3) testify to the results that inspiration and tenacity can create from the most humble beginnings. The provisional patent application is particularly valuable to these types of independent inventors because the reduced filing fees and the permissive informality of the application fit into the low budget business style, which is essential to success for a bootstrapping start-up. The provisional patent application is, in some sense, recognition by the government of the importance of this vital phenomenon of American technology. Indeed, the

WHAT IS A PROVISIONAL PATENT APPLICATION?

constitutionally founded patent system was originally designed to promote the sciences by rewarding people who took risks and invested to improve the lives of fellow citizens.

As with the backyard lawn chair example, early stage inventors also benefit from using provisional patent applications. Early stage inventors often have complicated inventions and want to secure some immediate patent protection as they continue to develop and improve their basic designs.

In the early days of patents, it was necessary to have actually built the invention, or at least to have built a model of the invention. Although many such patent models demonstrate ingenuity and craftsmanship in their own right, these models are no longer required, fortunately. In the event that there is a dispute as to who is recognized as the first inventor of a claimed invention, the first to file the application receives the patent. Since filing a patent application legally represents a reduction to practice, there is great benefit to filing a patent application early.

A model of the invention is no longer required by the USPTO.

When multiple inventions or embodiments have been developed, yet it is unclear which inventions or embodiments will be pursued, it is important to file a provisional patent application. This is common within large research organizations where a variety of projects are being worked on in parallel. Typically, nonprovisional patent applications will be reserved for inventions related to products that are being sold. However, in the research setting, it often takes many months before a final decision is made regarding which inventions

WHAT IS A PROVISIONAL PATENT APPLICATION?

will result in products. Provisional patent applications provide an efficient way of obtaining early filing dates on each of the inventions, pending later determination as to which inventions will merit formal filings.

Filing provisional applications for multiple inventions can be beneficial.

Some companies, particularly those large multinational companies that require patents in a variety of countries, file provisional applications in order to secure filing priority dates in foreign jurisdictions. As previously discussed, the 174 or so Paris Convention countries recognize US provisional patent applications for purposes of honoring a priority filing date within those countries. For example, by filing a US provisional patent application on a specific date, an inventor or company can later file a national application in Japan within twelve months and be accorded the earlier US filing date as the original priority date. Japan, like most countries, grants a patent on a specific invention to the first inventor to file a patent application, independent of when the invention was actually conceived and/or reduced to practice.

Related to the first to file requirement followed in most foreign jurisdictions is the absolute requirement that patent applications can only be filed for new inventions. This novelty requirement precludes foreign patent filings for any invention that has already been published, shown in public, or publicly used. A provisional patent application is a convenient tool for preserving novelty on inventions for companies attending trade shows, conferences, and demonstrating prototypes.

WHAT IS A PROVISIONAL PATENT APPLICATION?

One final opportunity for using provisional patent applications arises when a company or inventor discovers that a competitor is simultaneously developing the same invention or readying a similar product for sale, and the inventor wants to quickly establish the earliest possible filing date.

Before March 16, 2013, the US utilized a first-to-invent system in which the inventor who invents first and diligently reduces the invention to practice takes priority over a later inventor. Even under a first-to-invent system, the inventor who filed his patent application first had a significant legal advantage over inventors who filed a patent application for the same invention at a later date. At the USPTO, a dispute between inventors of the same invention was called an *interference proceeding*. During one of these proceedings, the director of the USPTO and delegated staff would make a determination as to who should receive the patent based on priority of the invention, priority of conception, and diligent

Approximately 174 countries will honor a priority date secured by a US provisional patent application.

reduction to practice. The first to file a patent application was called the *senior party*, and the second filer was called the *junior party*. The senior party received certain benefits with respect to burden of proof and presentation of evidence.

On March 16, 2013, however, the United States transitioned to a first-to-file system to promote harmonization between its patent system and those of other countries. Under this system, the first inventor to file an application is awarded the patent. Interference proceedings will continue for applications with a filing date before

WHAT IS A PROVISIONAL PATENT APPLICATION?

March 16, 2013. For applications filed on or after March 16, 2013, the new process called a *derivation proceeding* settles disputes between inventors of the same invention.

A derivation proceeding can only be started by the later filing inventor, called the *petitioner*. To initiate the process, the petitioner must explain and provide evidence that the first inventor obtained the invention from the petitioner and filed a patent application without the petitioner's authorization. The petitioner must start the process within one year from the first publication date of the petitioner's claims to the same invention; otherwise, the right to claim first inventorship is lost. During a derivation proceeding, the Patent Trial and Appeal Board, comprised of the director of the USPTO and delegated staff, will determine who should receive the patent.

A provisional application preserves novelty for inventions being publicly disclosed, demonstrated, or published.

Limitations of a Provisional Patent Filing

The use of provisional patent applications is relatively new. Some controversy exists among patent professionals as to whether or not these placeholder applications are advantageous for inventors. Despite all the positive benefits of filing a provisional patent application, the lessened formality requirements tend to have the detrimental effect of reducing the amount of attention paid to actually preparing and filing the application. It is important to note, for example, that the requirement for clearly and fully explaining the invention is the same

WHAT IS A PROVISIONAL PATENT APPLICATION?

The first to file an invention has a legal advantage over later filers competing for priority to receive a patent.

for the provisional patent application as it is for the nonprovisional application. By using the provisional application as a low cost, temporary alternative to a nonprovisional patent application, inventors risk taking shortcuts in their provisional applications that might later jeopardize obtaining or enforcing patents.

If the provisional route is used, the inventor should ask, “Could someone else of ordinary skill in the art, reading this description, practice the invention as it will be claimed?” Another consideration that must be made when filing a provisional application is whether the inventor has explained the best mode of practicing the invention. Unlike secret family recipes, which when casually shared might be missing a vital ingredient or two, patent applicants are duty-bound to teach the world the details of the best embodiment known at the time the application is filed. Yet, leaving the secret sauce out of your patent application will no longer result in an invalid patent or claim in the event of a lawsuit.

Fact that the provisional application automatically becomes abandoned when its pendency period expires, twelve months after the filing date, or fourteen months with a petition. In order to preserve any benefit from the provisional patent application, an applicant must either file a nonprovisional application claiming benefit of the earlier filing date in the United States, or must convert the provisional application into a nonprovisional application before the one-year pendency period expires.

Patented Jan. 6, 1942

2,268,872

UNITED STATES PATENT OFFICE

2,268,872

VARIABLE FREQUENCY OSCILLATION GENERATOR

William E. Hewlett, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a co-partnership consisting of William E. Hewlett and David Packard

Application July 11, 1939, Serial No. 283,861

6 Claims. (Cl. 254-38)

My invention relates to variable frequency oscillation generators and more particularly to oscillation generators wherein the frequency is determined by means of resistance capacity networks.

Oscillation generators capable of tuning over a wide range of frequencies are useful for many purposes, for example, as test oscillation generators in place of heat frequency generators. In general such oscillation generators have been provided with a variably tuned resonant circuit to maintain the oscillations at a frequency to which the tuned circuit is adjusted.

According to my invention, I provide an oscillation generator with a variable resistance capacity network forming a positive feedback path for the purpose of determining the frequency of oscillation.

According to another feature of my invention an oscillation generator with resistance capacity frequency determining arrangements and with a negative feedback circuit for reducing distortion caused in the amplifier circuit, is provided.

According to a further feature of my invention I provide an automatic amplitude control arrangement in a negative feedback path of an oscillation generator to maintain the amplitude of the generated oscillations constant despite changes in the supply voltages for the tubes.

Other advantages and features of my invention will be apparent from the particular description thereof made in connection with the accompanying drawing, in which

Fig. 1 shows a diagrammatic circuit of the preferred form of an oscillation generator in accordance with my invention, and

Fig. 2 shows curves for the purpose of illustrating the operation of the circuit.

In Fig. 1 is shown an oscillation generator comprising two amplifying tubes 10 and 11, coupled together by resistance capacity means in a known manner. The voltage supply sources and the cathode heating supply are omitted for simplifying the circuit. The anode of tube 10 is coupled to the input grid of tube 11 and the anode of tube 11 is then connected to a circuit which provides a feedback path through a coupling condenser 12 and series connected resistance R₁ and variable capacity C₁, and a second circuit comprising R₂ and variable condenser C₂, to the input of tube 10. The circuit including R₁, C₁, R₂, C₂, provides a regenerative or positive coupling between the output and input circuits of the amplifiers 10 and 11, so that feedback occurs sufficient to maintain

oscillations in the circuit. By properly proportioning the value of the resistance capacity networks R₁, C₁, R₂, C₂, the desired frequency may be obtained. If R₁ and C₁, respectively, equal R₂ and C₂, the ratio of the voltage E_b at point b to the voltage E_a at point a varies with frequency in a manner similar to a resonance curve. In Fig. 2 this curve is shown in solid lines with voltage ratios of E_a and E_b plotted as ordinates against the relative frequency. At the maximum of this curve, the frequency

$$f_0 = \frac{1}{2\pi\sqrt{R_1 R_2 C_1 C_2}}$$

and the voltages at points a and b have the same phase. Accordingly, oscillations tend to occur at the frequency f₀ for this circuit.

In Fig. 3 the broken line curve indicates the phase shifts as ordinates with the change in relative frequency. It can be seen that at zero phase shift, the maximum of the E_a, E_b ratio occurs. If the various condensers and resistances are not made equal as they were for plotting this curve, the maximum would occur at some other point and a symmetrical curve would not be obtained. However, the principles of my invention apply to the circuit regardless of equality of these elements. In practical construction, however, it is generally desirable to make the separate elements equal.

As shown in Fig. 1, frequency shift in the oscillation generator is accomplished by adjusting variable capacities C₁ and C₂. It is clear, however, that since the resistances as well as the capacities serve to control the frequency of the oscillator, either the resistances alone or both the resistances and capacities may be adjustable for varying the tuning.

For the type of oscillators illustrated in Fig. 1, it is necessary in order to obtain satisfactory operation that the amplifiers comprising tubes 10 and 11 have phase shift independent of changes in supply, etc., and furthermore, there should be provided some means for controlling the amplitude of the oscillations so that they do not exceed the range over which tubes 10 and 11 will operate as class A amplifiers. A constant amplifier phase shift is necessary to insure a constant frequency, because the phase angle of the transfer impedance of the resistance capacity network from point a to point b varies only slowly with frequency. Accordingly, a small change in amplifier phase shift such as might be produced by a variation in voltage supply requires a comparatively large change in the frequency of opera-

Figure 2.2(a) Early Patent from Hewlett-Packard

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Jan. 6, 1942.

W. R. HEWLETT

2,268,872

VARIABLE FREQUENCY OSCILLATION GENERATOR

Filed July 11, 1939

FIG. 1.

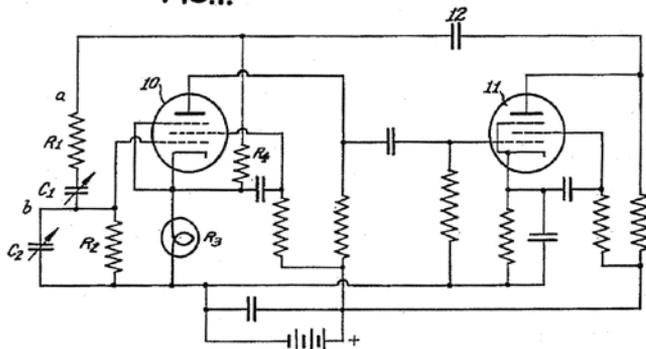
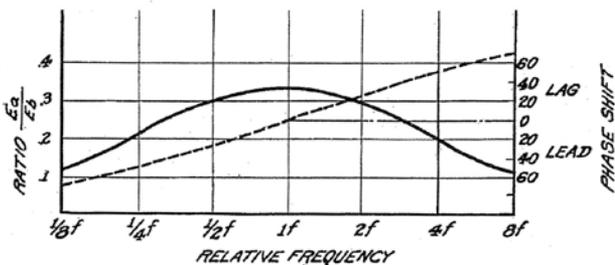


FIG. 2.



INVENTOR
WILLIAM R. HEWLETT
BY
Paul D. Fisher
ATTORNEY

Figure 2.2(b) Early Patent from Hewlett-Packard

WHAT IS A PROVISIONAL PATENT APPLICATION?

United States Patent [19]

[11] **Des. 268,584**

Jobs et al.

[45] **** Apr. 12, 1983**

[54] **PERSONAL COMPUTER**

[56] **References Cited**

[75] **Inventors:** Steven P. Jobs, Los Gatos; Jerrold C. Manock, Palo Alto; Dean A. Hovey, Los Altos; David M. Kelley, Palo Alto, all of Calif.

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 D. 252,086 6/1979 Calverly D14/106

[73] **Assignee:** Apple Computer, Inc., Cupertino, Calif.

Primary Examiner—Susan J. Lucas
Attorney, Agent, or Firm—Blakely, Sokoloff, Taylor & Zafman

[**] **Term:** 14 Years

[57] **CLAIM**

The ornamental design for a personal computer, substantially as shown.

[21] **Appl. No.:** 203,502

DESCRIPTION

[22] **Filed:** Nov. 3, 1980

FIG. 1 is a perspective view of the personal computer showing our new design;
 FIG. 2 is a top view thereof;
 FIG. 3 is a front elevational view thereof;
 FIG. 4 is a right side view thereof;
 FIG. 5 is a left side view thereof;
 FIG. 6 is a rear elevational view thereof; and,
 FIG. 7 is a bottom view thereof.

[51] **Int. Cl.** D14-02
 [52] **U.S. Cl.** D14/106
 [58] **Field of Search** D14/100, 101, 102, 103,
 D14/105, 106, 107, 111, 113, 114; 364/419, 708,
 709, 900; 340/365 R; D18/7

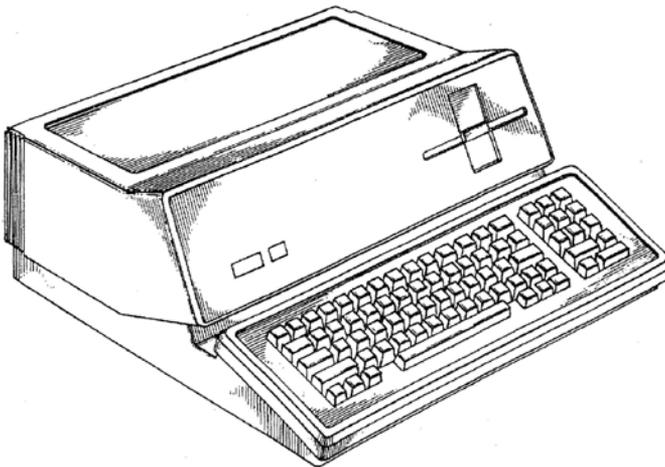


Figure 2.3 Apple Computer Design Patent - 1980 (filed in 1980)

Beware of Marketing Companies

Beware of promoters offering to market your invention in exchange for up-front payment in any form.

There is a cottage industry in the United States in which invention promotion companies solicit submissions by inventors and promise to help exploit and find purchasers for their inventions. Over the years, many promotional companies have promised great riches and have engaged in the worst forms of con artistry, preying on the hopes and dreams of sometimes naïve and often underfunded inventors. The industry has been more stringently regulated in recent years, but it continues to promise more than can be delivered. Beware of promoters offering to market your invention in exchange for up-front payment in any form.

Such companies often offer to prepare and file patent applications on an inventor's behalf. It is important to understand from the outset whether the promotion company is talking about a formal nonprovisional patent application or, more often, a provisional patent application that will expire on the twelve-month anniversary following the original filing date.

A provisional patent application cannot issue into a patent on its own.

There should be no confusion about the role and the extent of a provisional patent application. A provisional patent application cannot issue into a patent. If nothing further is submitted to the USPTO, then after twelve months after the filing date, or fourteen months with submission of a petition, the provisional

WHAT IS A PROVISIONAL PATENT APPLICATION?

patent application will forever expire, and all of the money and work invested in the provisional effort will be lost completely.

At some point in the patent process, you should hire a competent patent attorney or patent agent to help prepare and file the nonprovisional—“real”—patent application. Notwithstanding advice in other self-help books on this subject, patent preparation and filing is a difficult art form to master. Most patent attorneys spend several years in closely mentored training before reaching minimum competency. If the patent is important to your venture, it is important to get professional help with the nonprovisional filing. Suggestions about where to find help can be found in Chapter 9.

A knowledgeable patent attorney will greatly facilitate the nonprovisional patent filing process.

WHAT IS A PROVISIONAL PATENT APPLICATION?

■ CHAPTER THREE ■

UTILITY INVENTIONS



Types of Patents

Inventions falling into the broad category of utility patents can be classified more narrowly according to their specific purposes. A patentable utility invention can take the form of a new machine, composition of matter, article of manufacture, process, or any new and useful improvement. Machines, articles of manufacture, and compositions of matter inventions relate to structures and are sometimes grouped as product patents. Process or method inventions are expressed in terms of steps or acts that can be performed to achieve a certain result.

Machines

Machines are inventions formed by parts or components organized in a particular way such that, when activated, they produce predetermined and uniform results. Machines typically have structure and do work. A patentable machine includes the generally understood concept of machines as well as

Machine patents typically have mechanical or electrical components.

UTILITY INVENTIONS

various mechanisms, machine elements, and combinations of components. Machine patents often consist of inventions with mechanical or electrical components such as hinges, screws, levers, or transistors.

The category of machine patents includes simple inventions of everyday office equipment such as the stapler or fax machine, as well as more complex inventions such as electronic systems, vehicular components, or computer programs. Machine patent applications take one of four forms, depending on the type of invention.

The first type of machine patent involves an entire machine—for example, a typewriter. The second type describes one or more elements of the machine, but not the machine as a whole. The third type encompasses new elements as well as new combinations of elements previously used and well known. The fourth type involves an invention comprised of no new elements, only old elements put together in a new combination, thereby creating a new result.

This fourth type of patent is probably the most common machine invention, consisting of new uses for combinations of old things. The in-line skate is an example of this fourth type of machine patent. Boots, wheels, and bearings are all old inventions, as is the traditional four-wheel roller skate. Reconfiguration of the wheels of the skate, however, produced a new machine, the in-line skate, which was separately patentable because it was novel and non-obvious.

The patentability of a machine invention does not depend on the patentability of any material or article the machine is capable of operating on or creating. The material or article that is

UTILITY INVENTIONS

the result of operating the machine is distinct from the machine itself, as consumption or production of such materials or articles is not required and does not necessarily impart patentability to an invention.

Articles of Manufacture

A second type of patentable product is an article of manufacture. Articles of manufacture patents include product patents that are unable to be classified as a machine or a composition of matter (*to be discussed next*). This type of patent encompasses anything crafted from raw materials, made by hand, or by machinery. Inventions categorized as articles of manufacture generally do not have moving parts, distinguishing them from machines, which usually consist of components in motion and are controlled by some form of operating rules. Basic examples of patentable articles of manufacture include a pencil, a wrench, and a battery.

Natural products altered in some way by humans can receive patent protection as articles of manufacture.

The patentable article of manufacture is distinct from the machine or device used to produce the article. Although distinct, both the article of manufacture and the device or process from which it was derived can be patented.

If they have been genetically altered, living organisms including bacteria, microorganisms, and even animals are subjects eligible for patent protection. However, natural products that have not been altered by humans in some way cannot be covered by a patent as an

article of manufacture. For example, a newly discovered, naturally occurring anti-aging skin cream, effective in its natural state, would not be eligible for patenting.

Ordinarily, an article of manufacture is described as a combination of fixed elements connected together in a certain way. However, a group or *kit* of parts that are interrelated but not yet assembled can also be protected as an article of manufacture. Examples of such patentable kits include an assay kit for an infectious disease or a chemical kit that can be used to extract the ore from a rock.

An unassembled kit or group of parts may be eligible for patent protection.

Compositions of Matter

While a machine consists of a combination of parts, a composition of matter is comprised of two or more substances or ingredients. What sets this third type of utility patent apart is its concern with the chemical makeup of the substances involved. A composition of matter may result from either a combination of chemicals or a mechanical mixture, and it may take the form of a new molecule, compound, solution, mixture, or even a living organism. Compositions of matter embrace all composite materials—gases, liquids, and solids. Similar to the patentability of a machine invention, the components or ingredients of a composition of matter must function to create a unitary result and demonstrate properties distinguishable from

Compositions of matter may consist of chemical combinations or mechanical mixtures.



US005971829A

United States Patent [19]
Hartman

[11] **Patent Number:** 5,971,829
 [45] **Date of Patent:** Oct. 26, 1999

- [54] **MOTORIZED ICE CREAM CONE**
 [76] Inventor: **Richard B. Hartman**, P.O. Box 228, Issaquah, Wash. 98027
 [21] Appl. No.: **09/036,398**
 [22] Filed: **Mar. 6, 1998**
 [51] Int. Cl.⁶ **A63H 33/00; B65D 85/78**
 [52] U.S. Cl. **446/236; 446/73; 446/76; 40/430; 426/132; 426/104**
 [58] **Field of Search** **446/71, 73, 74, 446/76, 236; 40/414, 430; 426/132, 134, 135, 104**

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Primary Examiner—Robert A. Hafer
Assistant Examiner—Laura Fossum

[57] **ABSTRACT**

A novelty amusement eating receptacle for supporting, rotating and sculpting a portion of ice cream or similarly malleable food while it is being consumed comprising: a hand-held housing, a cup rotatably supported by the hand-held housing and adapted to receive and contain a portion of ice cream or food product of similar consistency, and a drive mechanism in the hand-held housing for imparting rotation upon the cup and rotationally feeding its contents against a person's outstretched tongue.

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7 Claims, 6 Drawing Sheets

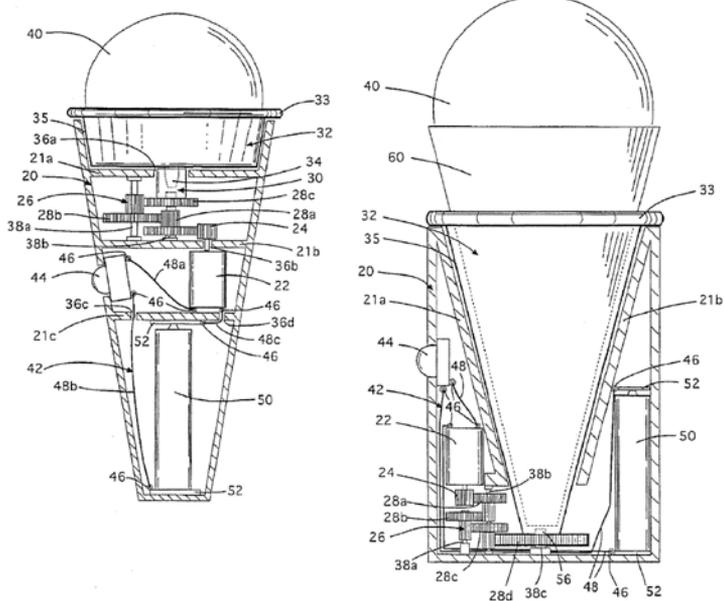


Figure 3.1 Machine Patent

UTILITY INVENTIONS

United States Patent [19]
Piro

[11] **Patent Number:** 4,608,967
 [45] **Date of Patent:** Sep. 2, 1986

- [54] PAT ON THE BACK APPARATUS
- [76] Inventor: **Ralph R. Piro**, 676 Centre Ave.,
 Lindenhurst, N.Y. 11757
- [21] Appl. No.: 739,669
- [22] Filed: May 31, 1985
- [51] Int. CL⁴ A61H 7/00
- [52] U.S. Cl. 128/61; 4/559;
 15/143 R; 15/210 R; 224/265; 269/3; 272/1 R;
 272/76; 446/26; 128/67
- [58] Field of Search 128/24.2, 24 R, 24 A,
 128/25 B, 28, 32-40, 45, 46, 47, 50-53, 56, 57,
 59, 61, 62, 65, 66, 67; 272/96, 8 N, 8 R, 76, 27
 R, 27 N, 1 R; 15/28, 29, 210 R, 143 R, 144 R,
 145; 4/559; 2/44, 45; 269/3; 224/265; 446/26,
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Primary Examiner—Clyde I. Coughenour
Attorney, Agent, or Firm—John J. Byrne, Bradford E. Kile, Kevin M. O'Brien

[57] **ABSTRACT**

A self-congratulatory apparatus having a simulated human hand carried on a pivoting arm suspended from shoulder supported member. The hand is manually swingable into and out of contact with the user's back to give an amusing or an important pat-on-the-back.

[56] **References Cited**

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2,642,863	6/1953	Gordon	128/38

4 Claims, 2 Drawing Figures

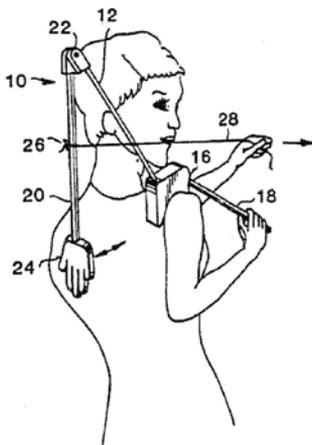


Figure 3.2 Celebrating the Machine Patent

UTILITY INVENTIONS

United States Patent [19]

[11] **4,070,029**

Panarelli

[45] **Jan. 24, 1978**

- | | | | | |
|---|-----------|---------|---------------------|-------------|
| [54] ROLLER SKATE | 1,921,018 | 8/1933 | Whitcomb, Jr. | 280/11.19 |
| | 2,502,566 | 4/1950 | Hooley | 280/11.37 E |
| [76] Inventor: Albert J. Panarelli, 8 Trowbridge Circuit, Worcester, Mass. 01603 | 2,531,959 | 11/1950 | Woodard et al. | 280/11.37 E |
| | 2,552,035 | 5/1951 | Cooke et al. | 280/11.28 |
| [21] Appl. No.: 675,288 | 2,961,269 | 11/1960 | Renfroe | 248/228 |
| | 3,870,328 | 3/1975 | Gemmel et al. | 280/11.37 E |

[22] **Filed: Apr. 9, 1976**

[51] **Int. Cl.² A63C 17/26**

[52] **U.S. Cl. 280/11.19; 280/11.37 E**

[58] **Field of Search 280/11.19, 11.37 E, 280/11.37 R, 11.28, 11.27, 11.2, 11.23, 11.12, 11.3, 11.17; 248/228**

[56] **References Cited**

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329,581 11/1885 Miller 280/11.19

Primary Examiner—David M. Mitchell
Attorney, Agent, or Firm—Norman S. Blodgett; Gerry A. Blodgett

[57] **ABSTRACT**

A roller skate having a blocking element extending between the front wheels and the rear wheels to permit its use with a hockey puck.

4 Claims, 2 Drawing Figures

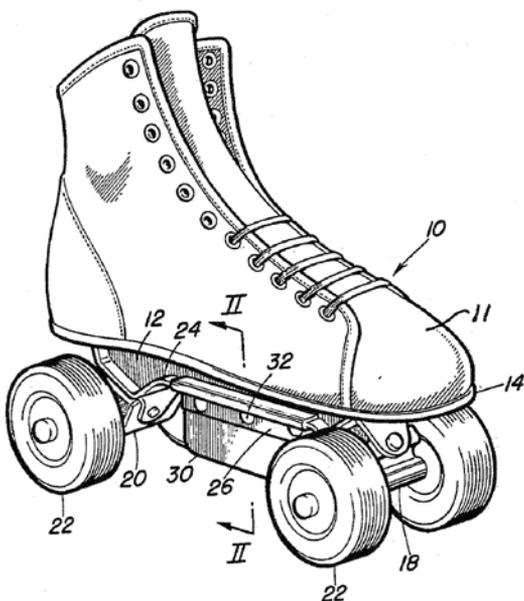


Figure 3.3 Roller Skate

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US006499748B2

(12) **United States Patent**
Meibock et al.

(10) Patent No.: **US 6,499,748 B2**
(45) Date of Patent: **Dec. 31, 2002**

(54) **IN-LINE ROLLER SKATE**

(75) Inventors: **Antonin A. Meibock, Alberta (CA);
John E. Svensson, Vashon, WA (US)**

(73) Assignee: **K-2 Corporation, Vashon, WA (US)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/068,595**

(22) Filed: **Feb. 6, 2002**

(65) **Prior Publication Data**

US 2002/0089131 A1 Jul. 11, 2002

Related U.S. Application Data

(63) Continuation of application No. 09/877,544, filed on Jun. 8, 2001, now Pat. No. 6,367,818, which is a continuation of application No. 09/587,374, filed on Jun. 1, 2000, now Pat. No. 6,254,110, which is a continuation of application No. 09/379,461, filed on Aug. 23, 1999, now Pat. No. 6,139,030, which is a continuation of application No. 09/209,321, filed on Dec. 9, 1998, now Pat. No. 6,152,459, which is a continuation of application No. 08/811,134, filed on Mar. 3, 1997, now Pat. No. 5,848,796, which is a continuation of application No. 08/464,467, filed on Jun. 7, 1995, now abandoned, which is a continuation of application No. 08/094,576, filed on Jul. 19, 1993, now Pat. No. 5,437,466.

(51) Int. Cl.⁷ **A63C 17/02**
(52) U.S. Cl. **280/11.221; 280/11.211**
(58) Field of Search **280/11.221, 1,
280/11.228, 11.3, 11.231, 11.211, 11.215;
36/115, 1, 118.6**

(56) **References Cited**

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5,775,008 A	*	7/1998	Bassel et al.	280/11.221

* cited by examiner

Primary Examiner—Richard M. Camby

(74) *Attorney, Agent, or Firm*—Christensen O'Connor Johnson Kindness PLLC

(57) **ABSTRACT**

In-line roller skate including a soft, pliable, and comfortable shoe body having structural foot support components positioned in selected strategic areas such as the ball, heel, and ankle. The shoe body may be made of a material that allows air circulation for coolness. In one embodiment, the structural components are made of semi-rigid plastic that may be heat moldable to conform to the user's foot. The shoe sole may also include heat moldable materials so that it can be anatomically formed to the foot. The shoe is mounted on a frame that supports a plurality of in-line roller wheels and includes structure for easily removing and replacing the wheels. The shoe-frame connection may be laterally and longitudinally adjustable. A speed control or brake, which applies a frictional force downwardly onto some or all of the in-line roller wheels, is mounted on the frame. Canting adjustment is provided to allow the ankle support to be canted laterally or longitudinally.

12 Claims, 13 Drawing Sheets

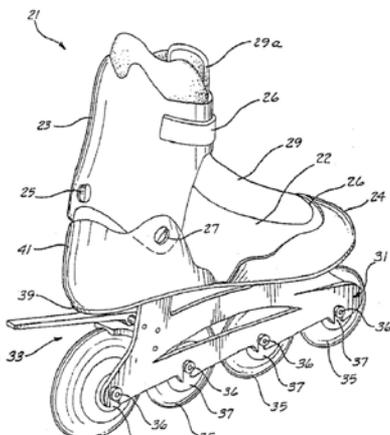


Figure 3.4 Roller Skate Improvement Patent

1

3,167,440

PLASTIC MODELING COMPOSITION OF A SOFT, PLIABLE WORKING CONSISTENCY

Noah W. McVicker and Joseph S. McVicker, Cincinnati, Ohio, assignors to Rainbow Crafts, Inc., Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed May 17, 1960, Ser. No. 29,573
16 Claims. (Cl. 106-150)

This invention relates to a plastic modeling composition of a soft pliable, working consistency for being molded into any desired shape or form and is slow-drying so as to be retained in a workable moldable condition for a long period of time to be repeatedly reworked and molded into different shapes and forms. It particularly pertains to a modeling composition for children's play, and is clean, non-sticky and non-staining.

This case is a continuation-in-part of application Serial No. 735,985, filed May 19, 1958, now abandoned.

One of the main objects of the invention is a modeling composition which may be reworked and remolded, or may be used for modeling objects which are more or less permanent.

Another object of the invention is a modeling composition which is easily compounded and is efficient in use.

Another object of the invention is a modeling composition which is non-toxic.

Another object of the invention is a modeling composition in which different colors may be incorporated without affecting its moldable consistency.

Still another object of the invention is a modeling composition which can be molded into objects adapted to be painted with conventional water and oil paints.

Further objects, and objects relating to details of construction and composition, will readily appear from the detailed description to follow. We have accomplished the objects of the invention by the means set forth in the following specification. The invention is clearly defined and pointed out in the appended claims, example compositions are also set forth for carrying out the invention. Generally described the invention comprises a composition consisting essentially of vegetable flour, such as grain flour which is adapted to be gelatinized; water, a hydrocarbon distillate preferably falling within the class consisting of a complex mixture of aromatic and aliphatic liquid hydrocarbon distillate derived from crude petroleum or shale or which may be made synthetically by combining lower boiling hydrocarbons and preferably having an initial boiling point of at least 60° C., and a soluble saline extender. Preferably also a drying agent, a hardener and astringent agent for binding the composition into a cohesive mass sometimes are included. Relatively small amounts of perfume or coloring, or both, may be added if desired. These latter two ingredients are not essential but optional to be used or not as may be desired.

Although any hydrocarbon distillate falling within the class defined above may be used it has been found that an excellent product is produced by the use of a hydrocarbon petroleum distillate such as typified by kerosene and preferably but not necessarily kerosene which has been deodorized. A kerosene of this type having an initial boiling point of approximately 150° C. has the advantage of not being so volatile as to be explosive. It is believed that the hydrocarbon distillate forms a thin film coating around the solid particles of the composition to give the composition a nice soft pliable texture. The coated flour particles, when extended by moist heat will gelatinize with the other particles into a homogenous mass which is soft and pliable without forming undesirable lumps therein. The homogenous mass is maintained

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lump-free. The thin film coating in addition to giving the process mixture a soft and pliable texture also renders the mixture smooth and velvety so that it will not be sticky when coming into contact with other objects or the hands of the user.

Any grain flour may be used but wheat flour is preferred. However, any of the other grain flours may be used, and they may be used alone or in combination. Rye flour is preferred next to wheat flour. The grain flour forms the body of the mixture after gelatinization occurs. It has been found during the manufacturing process that when wheat flour is used swelling begins at approximately 50° C. and gelatinization starts at approximately 65° C.

Any common salt that is soluble in water and is non-toxic may be employed. While sodium chloride is preferred, sodium hypochlorite and sodium chlorite may be used. The former is a common salt and is commonly used in tanneries and the latter is a bleaching agent commonly used for textile and paper pulp. In addition to the above, another common salt potassium chloride may also be used. None of the above salts will injure the flour. The term salt is used in its common ordinary meaning for indicating those materials which are commonly referred to as salt and are water soluble.

The drying agent includes such solid or powdered materials as borax, salicylic acid, sodium benzoate, sorbic acid, sodium and calcium propionate, calcium oxide, Colemanite, resorite, and kermite. These materials may be used alone or in combination. All of these materials function as a drying agent and as such they have an antiseptic effect upon the compound in that they inhibit or prohibit the growth and activity of micro-organisms and thus preserve the desirable properties of the compound. Of these materials borax is preferred. Borax is a hydrous borate, and commercial borax under Federal specifications call for not less than 95.5% of hydrous sodium borate in three grades from large crystals to fine white powder. Although all three grades are suitable, the fine white powder is preferred. Thus, the purpose of these materials is to maintain the composition in good physical condition and to prevent it from getting wet and sticky and further as an agent to inhibit microbiological growth in the composition which would cause the product to mold and in other ways deteriorate.

The hardener and astringent agent may be any of the well known alums, such as potash and soda alum. The term alum refers to hydrated double sulphates of aluminum and univalent or trivalent metals, such as sodium, potassium or ammonium, chromium and iron. Some suitable alums are listed below, they being used alone or in combination:

$\text{Na}_2\text{SO}_4\text{Al}_2(\text{SO}_4)_2\cdot 24\text{H}_2\text{O}$, sodium aluminum sulphate
 $\text{K}_2\text{SO}_4\text{Al}_2(\text{SO}_4)_2\cdot 24\text{H}_2\text{O}$, potassium aluminum sulphate
 $\text{Al}_2(\text{SO}_4)_3(\text{NH}_4)_2\text{SO}_4\cdot 24\text{H}_2\text{O}$, aluminum ammonium sulphate
 $\text{Cr}(\text{NH}_4)(\text{SO}_4)_2\cdot 12\text{H}_2\text{O}$, chromium ammonium sulfate
 $\text{CrK}(\text{SO}_4)_2\cdot 12\text{H}_2\text{O}$, chromium potassium sulfate
 $(\text{NH}_4)_2\text{SO}_4\text{Fe}_2(\text{SO}_4)_2\cdot 24\text{H}_2\text{O}$, ammonium ferric sulphate

A hardener and astringent other than alum such as aluminum sulfate ($\text{Al}_2(\text{SO}_4)_3\cdot 18\text{H}_2\text{O}$) may be used, and in fact is preferable because it is iron free. This aluminum sulphate or its hydrates are sometimes incorrectly referred to as alums. Accordingly, they are included in the general class of alums although they have been separately grouped here.

The foregoing examples include some alums which are not iron-free, but iron-free alums such as



are preferred because they do not stain. The term alum is used in its common ordinary meaning and refers to

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US00D461499S

(12) **United States Design Patent** (10) Patent No.: **US D461,499 S**
 Boyle et al. (45) Date of Patent: **** Aug. 13, 2002**

(54) **COMBINATION STYLUS AND PEN**

(75) Inventors: **Dennis Joseph Boyle; Daniel Sung-hwe Kim, both of Palo Alto; Andrew P. Switky, Menlo Park; Joseph S. Hei, Palo Alto; Peter Nils Skillman, San Carlos, all of CA (US)**

(73) Assignee: **IDEO Product Development, Inc., Palo Alto, CA (US)**

(**) Term: **14 Years**

(21) Appl. No.: **29/112,752**

(22) Filed: **Oct. 22, 1999**

D316,109 S	4/1991	Pappageorge	D19/48
5,247,137 A	9/1993	Epperson	178/18
D345,577 S	* 3/1994	Hohner	D19/48
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D431,598 S	* 10/2000	Kim et al.	D19/36
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Primary Examiner—**Martie K. Holtje**
 (74) Attorney, Agent, or Firm—**Carr & Ferrell LLP**

(57) **CLAIM**

The ornamental design for a combination stylus and pen, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a combination stylus and pen showing the front and left side of our new design; and, FIG. 2 is an elevation view showing the left side of the combination stylus and pen of FIG. 1. The surfaces or portions of the design not shown in the drawings or described in the specification form no part of the claimed design.

1 Claim, 1 Drawing Sheet

(51) LOC (7) Cl. 19-06

(52) U.S. Cl. D19/36; D19/43; D19/48; D14/411

(58) Field of Search D14/411; D19/35, D19/36, 41-51, 53-58, 81-85; 401/6, 7, 34, 52, 195, 202, 209, 98, 262, 243-247; 178/19.01-19.05; 345/179-183

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Figure 3.6 Article of Manufacture

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other compositions.

The patentability of a composition of matter is dependent upon both the originality of its ingredients and the method used to combine them. A composition of matter invention may be granted a patent even when the only novel and non-obvious part of the invention is the proportion of the components or ingredients used. The way that the ingredients in a mixture have been arranged can also determine the invention's uniqueness.

The manner in which a composition of matter is combined can also determine patentability. Compositions of matter can be combined either chemically, if the invention involves compounds, or physically, if the combination is a type of mixture. While it may seem that many mixtures could qualify as patentable compositions of matter, inventions involving cooking recipes or adding vitamins to food to produce an effect already known do not constitute patentable inventions. These types of mixtures are usually deemed too obvious or non-original to earn patent protection.

Cooking recipes are often deemed too obvious or non-original to earn patent protection.

A process invention usually involves a series of steps.

In contrast to other types of utility inventions, a composition of matter involves the materials or substances themselves, rather than a particular shape or form in which the composition may appear. Additionally, a composition of matter is considered for patentability separately from the method by which it was produced.

Processes

Methods and processes are also patentable. Processes are characterized by a series of actions or steps performed upon an article, thing, or substance that results in a useful thing or event. In the world of patent law, the terms *method* and *process* are used interchangeably even though the term process appears more commonly in inventions describing how to create something (such as a chemical formula), while the term method is more prevalent when describing electrical systems or mechanical operations. The term process as used here means process or method.

The heart of a process patent is the transformation or conversion of an article to produce a product, or to alter the character or quality of some substantial object. The physical result on the thing or substance acted upon may be permanent or temporary. Additionally, a process can be a new use of a known composition or system. A process producing a result or a product can be considered a patentable invention, even if the product itself is not patentable.

It is interesting to note the expansive scope of process patents, as evidenced by US Patent 5,443,036, issued in 1995, for a *Method of Exercising a Cat* (Figure 3.7) using a laser, and US Patent 6,257,248, issued in 2001, which describes a *Both Hand Hair Cutting Method* (Introduction figure).

Business Methods

Until the mid-1990s, business method patent claims were not

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US005443036A

United States Patent [19]
Amiss et al.

[11] **Patent Number:** 5,443,036
 [45] **Date of Patent:** Aug. 22, 1995

- [54] **METHOD OF EXERCISING A CAT**
 [76] **Inventors:** Kevin T. Amiss, 255 S. Pickett St., #301, Alexandria, Va. 22304; Martin H. Abbott, 10549 Assembly Dr., Fairfax, Va. 22030
 [21] **Appl. No.:** 144,473
 [22] **Filed:** Nov. 2, 1993
 [51] **Int. Cl.⁵** A01K 29/00
 [52] **U.S. Cl.** 119/707
 [58] **Field of Search** 119/702, 707, 174, 905; 446/485

5,194,007 3/1993 Marshall et al.

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Primary Examiner—Todd E. Manahan

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[57] **ABSTRACT**

A method for inducing cats to exercise consists of directing a beam of invisible light produced by a handheld laser apparatus onto the floor or wall or other opaque surface in the vicinity of the cat, then moving the laser so as to cause the bright pattern of light to move in an irregular way fascinating to cats, and to any other animal with a chase instinct.

4 Claims, 1 Drawing Sheet

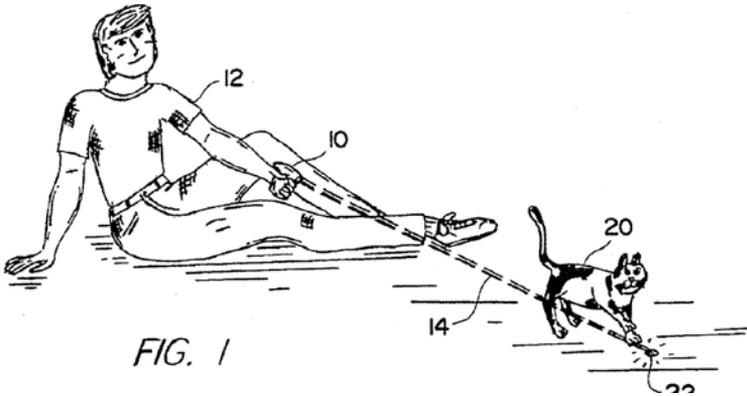


FIG. 1

Figure 3.7 Process Patent

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allowed by the USPTO on the basis that the subject matter of the invention was unacceptable under federal law. In 1998, the practice was changed to accept business methods as patentable subject matter.

Many foreign patent offices still do not allow patents on business methods.

The key issue when determining the patentability of a business method is whether the invention produces a transformation of information to a practical or useful result. Even the mere manipulation of data and information, according to a formula completely contained within another machine such as a computer, can be patentable. Abstract ideas lacking any useful effect and well known ideas merely implemented by computer, however, remain not patent eligible subject matter.

A business method application, like any other process patent application, should include a series of method steps. Examples of business method patents include advertising methods, methods of setting up Internet payment systems for business transactions, and methods for organizing databases of a company's customers or subscribers.

Amazon.com, for example, received a high-profile business method patent on its "one click" system for ordering products from its website (Figure 3.8).

Well-drafted patent applications often combine several of the

Business method patents are the newest approved type of utility patent.

Inventions involving only abstract ideas without a useful purpose will not receive patent protection.



US005960411A

United States Patent [19]

[11] **Patent Number:** **5,960,411**

Hartman et al.

[45] **Date of Patent:** **Sep. 28, 1999**

- [54] **METHOD AND SYSTEM FOR PLACING A PURCHASE ORDER VIA A COMMUNICATIONS NETWORK**
- [75] **Inventors:** Peri Hartman; Jeffrey P. Bezos; Shel Kaphan; Joel Spiegel, all of Seattle, Wash.
- [73] **Assignee:** Amazon.com, Inc., Seattle, Wash.
- [21] **Appl. No.:** 08/928,951
- [22] **Filed:** Sep. 12, 1997
- [51] **Int. Cl.:** G06F 17/60
- [52] **U.S. Cl.:** 705/26; 705/27; 345/962
- [58] **Field of Search:** 705/26, 27; 380/24, 380/25; 235/2, 375, 378, 381; 395/188.01; 345/962

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WO 98/21679	5/1998	WIPO	G06F 17/60

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Primary Examiner—James P. Trammell
Assistant Examiner—Demetra R. Smith
Attorney, Agent, or Firm—Perkins Coie LLP

[57] **ABSTRACT**

A method and system for placing an order to purchase an item via the Internet. The order is placed by a purchaser at a client system and received by a server system. The server system receives purchaser information including identification of the purchaser, payment information, and shipment information from the client system. The server system then assigns a client identifier to the client system and associates the assigned client identifier with the received purchaser information. The server system sends to the client system the assigned client identifier and an HTML document identifying the item and including an order button. The client system receives and stores the assigned client identifier and receives and displays the HTML document. In response to the selection of the order button, the client system sends to the server system a request to purchase the identified item. The server system receives the request and combines the purchaser information associated with the client identifier of the client system to generate an order to purchase the item in accordance with the billing and shipment information whereby the purchaser effects the ordering of the product by selection of the order button.

26 Claims, 11 Drawing Sheets



Figure 3.8

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categories listed above. For example, a patent describing a new office binding system might include a structural description of the plastic bindings (article of manufacture), the machine used to apply the binding to the paper (machine), and the processes used to construct and operate the binding machine (process). This type of complete disclosure provides protection for each type of invention disclosed, thus obtaining the broadest patent possible for the inventor. Also, disclosing a variety of different aspects of the invention reduces the likelihood of leaving out a key element in any part of the disclosure.

Categories of Utility Patents

- Machines
- Articles of Manufacture
- Compositions of Matter
- Process
- Business Methods

■ CHAPTER FOUR ■

FILING YOUR OWN PROVISIONAL APPLICATION



Required Parts of a Provisional Application

There are four basic elements to a provisional patent application. First, the backbone of the application is the written description of the invention. Second, the application must contain any drawings that are necessary to understand the invention. Third, a cover sheet form is required to identify the following:

- a.* The fact that the application is a provisional application for patent;
- b.* The name or names of all inventors;
- c.* The inventors' residences;
- d.* The title of the invention;
- e.* The name and registration number of the attorney or agent (if applicable);
- f.* A correspondence address; and
- g.* Any US government agency that has a property interest in the application.

Fourth, include the required fee for filing the application.

Subsequent sections of this book will cover each of the

above requirements for preparing and filing a provisional patent application.

Required Parts of a Provisional Application

- Written description of the invention
- Drawing if necessary
- Cover sheet for the provisional application
- Required filing fee

Who Is An Inventor?

At first blush, identifying an inventor should be a pretty easy task. Clearly it is someone who invents—the innovator of something new, useful, and nonobvious. But, what if two people collaborate on an invention? Are both considered inventors? Although seemingly simple in the abstract, the identification of inventors is often very complicated. Key to the analysis of inventorship is taking a careful look at the actual invention being claimed.

For example, let us imagine that you succeed, where all others before you have failed, in inventing a perpetual motion machine. You are able to uniquely arrange the elements of the machine so that, if properly constructed, perpetual motion will occur. One important piece of your invention is a frictionless bearing, for which you have not yet conceived an implementation. Without this novel bearing, the motion of your machine will not be

FILING YOUR OWN PROVISIONAL APPLICATION

perpetual. You discuss your motion machine with an associate, Billy, who immediately is able to sketch for you a novel solution for the frictionless bearing. Neither you nor Billy is an able machinist, so you then approach Candy, who is able to build the bearing using blueprints Billy supplies. With this bearing, you are then able to construct a working prototype. Before announcing your Nobel Prize worthy achievement, you seek to file a patent application on your new machine, but just who are the inventors of this perpetual motion machine?

If the machine itself is the subject of the patent, then you certainly are an inventor since you conceived of the machine and identified the parts needed to make it work. Billy also is arguably an inventor, since without his bearing contribution the functional operation of the machine would not be possible. Indeed, Billy may be entitled to a separate patent on his invention of the valuable, frictionless bearing. Candy, however, is probably not an inventor of this perpetual motion machine, since she did not contribute to the conception of the invention, but merely followed the instructions of Billy's blueprints in machining the bearing. Although unquestionably valuable, Candy's contribution did not elevate her to the level of inventor.

The terms *inventor*, *coinventor*, and *joint inventor* have formal definitions. Inventor refers to the collective entity of individuals who created or discovered the invention. A coinventor or joint inventor means any one of the individuals who created the invention. Thus, in the previous scenario, inventor refers to you and Billy collectively, while each of you would be individually a

joint inventor or coinventor.

When filing a patent application, it is essential that all true inventors be named in the application. Purposely leaving a true inventor out of a patent application or purposely adding the name of a noninventor, may give rise to later invalidation of the issued patent. As a matter of practice, it is preferable to err on the side of being over-inclusive in naming inventors. Individuals whose names are erroneously added to a patent application seldom complain, while inventors whose names are left off of a patent application are much more likely to seek legal redress and challenge the patent's validity. Avoid, however, gratuitously naming friends, relatives and superiors in your patent application as inventorship will likely be challenged in the event the patent is later litigated.

Filing Date

A provisional patent application receives a filing date, once the application is submitted, only if it contains both a written description of the invention and any drawings necessary to understand the invention. Once a provisional application has been filed, it automatically expires twelve months after the provisional application filing date. If you intend to file a nonprovisional patent application claiming the benefit of the provisional application filing date, it is essential that you do so before the expiration of the provisional application. Provisional patent applications will not develop into issued patents without additional submissions to the USPTO.

Filing Deadlines

In addition to the limitations on patentable subject matter, the patent laws of the United States also prohibit granting patents on otherwise patentable inventions due to certain occurrences, known as *barring events*. If a barring event has already transpired with respect to an invention, then there is no point in filing a provisional application because no patent can ever be issued claiming that invention. Before March 16, 2013, some occurrences were only considered barring events if they occurred in the United States. For example, if the invention was on sale or in public use in the United States more than one year before an application was filed, the invention could not be patented.

While sales and public use events are only barring if they occur in the United States, other events can be barring if they occur anywhere in the world. Thus, if the invention is described in a printed publication anywhere in the world more than one year before the application is filed, the invention cannot be patented. Likewise, the invention cannot be patented if the invention was previously patented anywhere in the world more than one year before the application was filed.

Lastly, if a patent on the invention is issued in a foreign country less than one year before the application is filed in the United States, but the application for that foreign patent is filed more than one year before the US application, again the invention is barred from being patented in the United States. Although the United States gives the inventor up to one year to file an application after these

FILING YOUR OWN PROVISIONAL APPLICATION

specified pre-filing disclosures, most foreign countries do not. It is important to note that the above examples may no longer apply to newly filed provisional applications as rules have changed as described below.

The provisional patent application automatically expires twelve months after filing.

The transition to a first-inventor-to-file system on March 16, 2013 allowed barring events to occur anywhere in the world. An invention generally cannot be patented if it has been patented previously, described in a printed publication, on sale, in public use, or otherwise available to the public before the invention's filing date. But, even if one of these events occurs, all hope is not lost. Two situations demonstrate how certain circumstances might allow inventions to be patented.

The first situation deals with disclosures made one year or less before the filing date of the invention. This situation has two exceptions where the disclosure would not be considered barring. The first exception is if the inventor or a joint inventor was the source of the information used in the disclosure; in this instance, the invention may still be patented. For example, if the inventor publicly used the invention in a foreign country, a US patent application must be filed within one year, otherwise the inventor's own disclosure will bar the grant of a patent.

The second exception is if the inventor or a joint inventor was the source of information for a disclosure before an independent third party discloses; in this instance, the independent disclosure will not be a barring event for the inventor. For example, if the inventor gave a presentation about the invention, and a third party

FILING YOUR OWN PROVISIONAL APPLICATION

independently made and sold the invention before the inventor applied for US patent protection, the inventor's prior public disclosure would allow the inventor to receive a patent on the invention when the sale would ordinarily be a barring event. The inventor, however, would need to have filed a patent application within one year of the prior public disclosure.

The second situation deals with disclosures in which an issued US patent or published patent application is filed before the claimed invention, and another person is named as the inventor. In this situation, there are three exceptions in which the disclosure would not be barring. The first exception applies if the inventor or a joint inventor was the source of the information in the patent or published application. For example, if an inventor tells a third party about his invention and the third party obtains a patent on that invention and names the third party as the inventor, that patent would not be considered barring. The second exception applies if a public disclosure occurred before the patent or published application's filing date, and the inventor or joint inventor was the source of the information for the public disclosure. The third exception applies when the same person owns, or is supposed to own, the claimed invention and the subject matter disclosed in the patent or application.

Filing Deadline Checklist

If the invention has been patented, described in a printed

publication, in public use, on sale, or otherwise available to the public (all must apply):

- Has it been one year or less since the invention was disclosed?
- Was the inventor or a joint inventor the source information disclosing the invention?
- If the invention was disclosed by an independent third party, was there a prior public disclosure with information obtained from the inventor or a joint inventor?

If the invention has been granted a patent or described in an application with another named inventor (only one need apply):

- Did the inventor or a joint inventor provide the information about the invention either directly or indirectly?
- Was the invention publicly disclosed either directly or indirectly by the inventor or a joint inventor before the patent or application was filed?
- Is the patent or application and the invention owned by or subject to assignment to the same entity?

It is important to note that deciding whether an occurrence constitutes a barring event can be tricky, as the statutory language has been heavily interpreted through numerous patent court cases. For instance, *on sale* means both *offered for sale* as well as *actually sold*. It is advisable to consult a patent attorney if either the

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anniversary of a potentially barring event is quickly approaching, or if there are doubts as to whether an occurrence more than one year ago may already bar patentability.

FILING YOUR OWN PROVISIONAL APPLICATION

■ CHAPTER FIVE ■

THE COMPLETE DESCRIPTION



Minimum Requirements

The cornerstone of the provisional patent application is the written specification. The written specification completely describes the claimed invention in sufficient detail to enable someone of ordinary skill in the relevant art to make and practice the invention. In order for the provisional application to lay enough foundation to be useful to serve as priority for a later filed nonprovisional application, the specification must meet three minimum disclosure requirements: the description requirement, the enablement requirement, and the best mode requirement. These requirements are distinct from each other and must be met separately. If you will be preparing your own patent specification, it is especially important to understand the specific requirements of each of the three disclosure obligations.

The written specification is the cornerstone of the provisional patent application.

The Description Requirement

The description requirement compels a written description of the invention. In the specification, the applicant must clearly convey

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The specification must clearly show possession of the claimed invention.

possession of the claimed invention so as to persuade someone skilled in the art that the inventor actually did invent the invention. To qualify for the patent monopoly, the specification must confirm that the inventor

had practiced the invention, or had conceived it in sufficient detail to practice it, at the time the patent application was filed.

The written description requirement often comes up in relation to priority of invention. A true inventor must have sufficient knowledge of the details of the invention to actually be able to

Drawings may also be sufficient to satisfy the written description requirement.

practice the invention. This knowledge must be conveyed in the specification. The written description requirement may also be satisfied by one or more drawings; words are not necessarily essential to satisfy this requirement.

The Enablement Requirement

The purpose of the enablement requirement is to ensure that the specification includes enough information to enable a person of ordinary skill in the art to make and use the claimed invention. Enablement requires that the invention be communicated to the interested public in a meaningful way.

Since insufficient enablement of an issued patent is usually only discovered during litigation, this problem may not appear for many years after the patent is granted. Since provisional applications are often hastily prepared, grossly underfunded, or cobbled together

THE COMPLETE DESCRIPTION

by bootstrapping do-it-yourself entrepreneurs, there is a natural incentive to cut corners on enablement. *Do not let this happen!* A generously enabled specification seldom has written description or best mode defects, and will, over time, save significant costs in the later examination process and potentially millions of dollars in litigation costs. Take the time to fully teach how the invention is to be made and practiced.

Enablement ensures that the invention is conveyed to the public in a meaningful way.

A fully enabled patent specification may still require some reasonable amount of experimentation by someone learning the invention from the patent description. For example, an electronic circuit diagram, included as a figure in the specification, might list values of many of the electrical components while leaving some values unassigned. This specification, if otherwise complete, would be enabling if someone with ordinary skill in electronics design could experimentally determine values for the unassigned components without excessive trial and error.

Try breaking the specification into two parts in order to prepare an enabling patent disclosure.

Although one-fits-all guidelines are difficult to generalize, a good practice in preparing an enabling patent disclosure is to break the specification into two parts. In the first part of the specification, describe the structure of the invention. What are the components required to build the device, composition, or machine? If the invention is a process or computer program, describe the structural elements of the process. Where applicable, discuss what the product

resulting from the process looks like.

As a second part of the specification, start over and describe the process for building the apparatus or the method steps for using the device, machine, or process. Flow charts are particularly useful for this part of the specification.

If you have done a good job of describing the invention in these two parts, there should be some overlap and redundancy. This overlap will provide insurance against leaving out a critical piece or process step.

The Best Mode Requirement

The patent specification must also describe the best mode contemplated for carrying out the invention at the time of the application. I had a teetotaling aunt who made the most phenomenal, award-winning preserves. Friends, relatives, and neighbors were constantly asking for the recipe but were never able to make their jam taste quite like hers. The secret ingredient was dark rum—lots of dark rum. Since my aunt was morally opposed to the use of liquor in all forms, her written recipe substituted cooked brown sugar and vanilla bean oil. If she tried to patent her jam, her written specification would fail to disclose the best mode for practicing her intoxicating recipe.

Don't leave the rum out of your recipe.

Like my prudish aunt, you may have the urge to keep certain information about your invention under wraps in order to preserve trade secrets. *Avoid this urge!* While the failure to disclose best mode will no longer invalidate an issued patent or claims

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during litigation, every applicant has a duty to deal with the USPTO in candor and good faith. Additionally, concealing the best mode can cause problems in subsequent dealings with the USPTO regarding the nonprovisional application, or may result in no protection for the best method of practicing the invention.

Rarely do patent examiners reject an application due to the failure to disclose the best mode. Unless evidence is presented otherwise, patent examiners generally assume that the best mode is indeed disclosed in the application. The examiner infrequently has access to the information that would be necessary to form the basis for a rejection due to the lack of disclosed best mode. Rather, concealment of the best mode is usually uncovered during interference or litigation proceedings. Once your issued patent is being litigated, it is too late to go back and add the rum to your recipe. On the other hand, the America Invents Act now protects patents or claims from being cancelled, deemed invalid, or unenforceable during litigation for failing to meet the best mode requirement.

Parts of the Specification

There is no formal organization requirement for the specification of a provisional patent application. However, the more you can make the provisional specification look like a well drafted nonprovisional specification, the easier it will be to prepare the nonprovisional application, should one ultimately be filed. Another good reason for taking the time to organize the provisional application is that a well-organized specification is less

likely to leave out key disclosure elements due to oversight. One of the biggest problems with merely submitting a stack of sketches and presentation slides as a provisional specification is that it often

A well-organized specification is less likely to leave out key disclosure elements.

takes the sum of the papers to fully knit the story into a complete whole. It is easy in such a random disclosure to accidentally forget a key element or process step that is essential to meeting the three disclosure requirements discussed above. Finally, a third important reason for submitting a well-organized

provisional application is that the filing papers may be reviewed by third parties when the technology is licensed or perhaps sold prior to the filing of the nonprovisional counterpart. A professional-looking specification often carries a much greater perceived value than a stack of random papers, even when the actual totality of the disclosures is equivalent.

The following sections will review the various parts of the well-drafted specification.

Title of the Invention

The USPTO requires that the title of the invention be brief—but technically accurate and descriptive—and that it contain fewer than 500 characters. Words such as *improved*, *improvement*, and the like will be dropped by the USPTO from the title of the invention. The best titles describe the invention in enough detail so that a quick read gives an accurate picture of what the invention is about. For example, if your invention relates to an improved ball bearing

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structure, the title *Ball Bearing* would be too broad to be useful in searching for or in identifying the novelty of the invention. A preferred title might be *Ball Bearing of Latticed Buckey Balls Formed in a Zero Gravity Vacuum*.

Parts of the Specification

- Title of the Invention
- Background of the Invention
- Brief Summary of the Invention
- Brief Description of the Drawings
- Detailed Description
- Claims
- Abstract of the Invention

Background of the Invention

The *background of the invention* section customarily includes two parts, the *field of the invention*, and the *description of the related art*. In the field of the invention section, include a statement paraphrasing the technology related to your invention. The statement should be directed to the subject matter of the claimed invention. For example, the floating pool chair patent (Figure 2.1) might contain a field of the invention section categorizing the invention as one that “relates to lounge furniture of the type adapted to float in the water of a swimming pool.” This section may be very short, one sentence or so, as long as it identifies the

field of art to which your invention pertains.

The description of related art section may include specific references to patents on prior inventions, where appropriate.

The more professional the specification, the greater the perceived value of the application.

The main benefit of this section in a nonprovisional application is to help provide context to the examiner and future readers about problems in the art that are being addressed by the present invention. This section is particularly helpful when the technology area is complex. For example, I

recently read a patent describing an integrated circuit used in a television tuner. The description of the related art section helpfully discussed the history of television tuners and described some of the problems of the conventional products and how these problems had been previously addressed. Terminology commonly used in the tuner industry was also introduced and explained.

Brief Summary of the Invention

Specific references to patents may be relevant in the Description of the Related Art section.

The *brief summary of the invention* section functions to describe the nature of the invention and should summarize the substance or general idea of the claimed invention. This section can point out the advantages of the invention and how it solves problems that previously existed.

The brief summary of the invention section typically consists of one or more clear, succinct sentences or paragraphs. Avoid very

general statements that could apply to several different inventions or types of inventions. Stereotyped, universal statements may be unhelpful and actually confusing. Instead, it is better to focus on statements that are directly on point and relevant exclusively to the invention.

Use as little legal jargon as possible in the summary. Summarizing the exact nature, operation, and purpose of the invention clearly and in the least complicated way possible will ease others' ability to understand the invention, especially if the patent becomes involved in any type of patent litigation.

Stay away from statements that are too general and could apply to a multitude of different inventions.

Finally, you may occasionally see other (especially older) patents in which the summary contains a list of *objects of the invention*. For example, several paragraphs might start with the words: "One object of the present invention is to...." The use of objects in the specification has been criticized in several federal patent cases, and in certain instances has been harmful to the scope of the allowed patents. Consequently, there has been a shift away from the use of objects in the summary in recent years. My advice is to play it safe and avoid listing objects in the brief summary of the invention section.

Play it safe and avoid listing "objects."

Brief Description of the Drawings

The *brief description of the drawings* section lists each of the figures contained in the application, including a reference by

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number to each and a description of the particular view it shows. If a figure contains several parts, for example, Figure 1A, Figure 1B, and Figure 1C, all may be described as Figure 1. However, if you choose to describe Figure 1A separately, be sure to describe any other figures that follow, including 1B and 1C. Using the floating pool chair of Figure 3.1 as an example, the first drawing described in the brief description of the drawings section states, “Figure 1 is a perspective view of a floating lounge in accordance with the present invention.”

Detailed Description

Following the brief description of the invention and brief description of the drawings sections is the *detailed description* section. This description must include sufficient detail so as to enable any person skilled in the pertinent art to make and use the invention without excessive experimentation. In this section, as long as others can understand what is being stated, the use of your own terminology to describe the invention is permitted.

There is no one “right” way to write a detailed description. The key to success in my experience, however, is to be organized. The better organized your specification is, the easier it will be to write and to understand, generally. My preferred approach to writing an organized specification is to use the figures as an outline in a technique I describe as the *space alien approach* in Chapter 6. Imagine yourself as a visiting space alien examining an invention for the first time. Start with a big picture point of view and slowly zoom in, one by one, on each of the novel elements of the invention.

THE COMPLETE DESCRIPTION

Describe each element in detail, from various perspectives if necessary, until its operation and relationship to the bigger picture has been completely explained. Analyze each element in this way, and when this process is complete, the invention should be well described.

The length of the specification obviously will be quite variable, since the nature and complexity of inventions vary significantly. Having written and supervised many nonprovisional patent applications, I have observed that most detailed descriptions can be adequately conveyed in fifteen to twenty double-spaced pages. I hasten to add that this rule of thumb does not apply to inventions in the field of life sciences, where specifications can be quite long. However, when the detailed description is less than ten pages, I immediately suspect that more information about the novel aspects of the invention should be described. When the detailed description exceeds twenty-five pages, it is often because either the point of novelty has not been sufficiently focused or multiple inventions are being described. There are, of course, many exceptions to this guideline, but if you believe your invention is so complex that it requires a one hundred page specification, you should probably be working closely with a patent attorney or patent agent.

Imagine yourself as a space alien examining an invention for the first time.

Claims

Patent claim drafting is among the most complex of all legal writing. Every word of a patent claim is subject to rigorous scrutiny,

THE COMPLETE DESCRIPTION

and often when patent infringement disputes arise, the words that seem most benign are often heavily litigated. Fortunately, patent claims are not required in provisional patent applications, and consequently are generally beyond the scope of this book. Patent claims are the essence of the patent grant, and some discussion of claims is appropriate even though the claims themselves are not required when filing a provisional application.

Patent claims are the essence of the patent grant... every word is subject to rigorous scrutiny.

In a sense, the claims act as a boundary around the patented invention. They are essentially the “metes and bounds” of the abstract property the inventor regards as his own. Claim drafting should strive to define the invention broadly to maximize patent protection, while also being specific enough to differentiate the invention from what others have invented in the past.

Independent claims are those that stand alone and do not refer to limitations in any other claims. Dependent claims refer either directly to an independent claim or indirectly through other dependent claims. Dependent claims add additional limitations to the referenced claim and are said to be narrower than their referenced base claims. Also, dependent claims are routinely added to patents in order to provide a narrower fallback position in the event that a broader independent claim is judged to be invalid.

Independent claims are those that stand alone and do not refer to limitations in any other claims.

THE COMPLETE DESCRIPTION

by the discovery of prior art, which previously taught or used the broad invention.

Although patent claims are not required for provisional patent applications, it is a useful exercise to insert a broad claim into the specification to help define the believed point of novelty and roughly the believed scope of the invention.

A broad claim is useful, although not required in a provisional application.

Claim drafting, and indeed claim reading, can be quite arduous, but a decent patent claim can be drafted using a relatively simple formula:

I claim <title of the invention> comprising:
<element name> + <connection> + <function>; and
repeat for each element.

An example claim using this formula might recite a roller skate having a shoe, wheels, and a shoe bed for holding the shoe, as follows:

I claim a roller skate comprising:

- (i) a shoe + <nothing else yet to connect to> + <the first element often functions as the base and is abbreviated>;
- (ii) a shoe bed + connected to the shoe + for rigidly holding the shoe; and
- (iii) wheels + rotatably connected to the shoe bed + to enable the shoe to roll along a flat surface.

Or rewritten:

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I claim a roller skate comprising:

(i) a shoe;

(ii) a shoe bed connected to the shoe for rigidly holding the shoe; and

(iii) wheels rotatably connected to the shoe bed to enable the shoe to roll along a flat surface.

Abstract of the Invention

The purpose of the *abstract of the invention* section is to enable someone reading the patent, regardless of his or her familiarity with patent documents, to get the gist of the invention. The abstract should be fashioned to assist readers in deciding whether to consult the full patent text for further details.

Create the abstract as a concise statement of the technical disclosure of the patent, including anything that is new in the

The abstract allows readers to get the gist of the invention without having to read the entire patent.

art. The abstract should be written in narrative form and generally limited to a single paragraph of no more than one hundred fifty words in length. Avoid using phrases that can be implied by someone reading the abstract such as, “The disclosure concerns,” “The disclosure defined by this invention,” and “The disclosure describes.”

■ CHAPTER SIX ■

FIGURES



More is Better

The clarity of nearly all invention descriptions can be significantly improved by a good figure. Indeed, many inventions contain complicated ideas that would be nearly impossible to properly understand without the assistance of explanatory figures.

There is no limit to the number of figures that can be included in a patent application. In fact, the drawings section should contain as many figures as necessary to properly illustrate the invention, as teaching is a primary purpose of a patent application. In general, the more complicated the invention, the more figures needed to fully describe the different aspects and facets of the invention.

If there is a question whether to include a certain figure in a provisional patent application, add it. The absence of an essential figure can later limit the usefulness of the provisional application in reserving a priority date for a claimed invention. Besides, short of revealing trade secrets, there is no downside to including extra figures in the provisional filing package. More is definitely better.

If there is a question whether to include a certain figure... add it.

FIGURES

When preparing the provisional patent application, keep in mind that the figures can be less formal than you might see in an issued printed patent. Hand sketches are perfectly acceptable, as are photographs and presentation slides. Since the provisional patent applications are not examined by the USPTO, the patent-drawing guidelines and requirements do not apply. However, since efficiency is gained by avoiding duplicate work, it is useful to understand how figures will be used in the nonprovisional application.

Different Views

Figures must be selected so as to accurately and precisely reveal the invention. To determine which views are important, focus on the novel elements of the invention. The views should completely reveal the claimed design. Perspective views show the appearance of three dimensional designs. The figures can also be in the form of flow charts, block diagrams, schematics, timing diagrams, cross sections, or plain views of the invention. Certain parts of the invention might also benefit from being shown in larger scale views, with increased detail as needed to elaborate upon critical aspects of the invention.

Figures with block diagrams are very helpful when demonstrating the structure of certain inventions such as a step in an intricate computer process. Each block and its unique purpose should be identified in the figure. Additionally, flow charts can be helpful in illustrating

Hand sketches are perfectly acceptable.

Focus on the novel elements of the invention.

FIGURES

computer programs and for expressing a series of steps in a process or business method.

Applications directed to mechanical inventions often require especially detailed figures. Every claimed component in this type of patent application must be illustrated. If the invention is comprised of any moving parts, the movement should be shown in a series of consecutive figures. When illustrating internal parts and structures of the invention, cross-sectional views are often helpful.

Mechanical inventions often require especially detailed figures.

A good set of figures will guide the reader through the invention in a way that makes the written text almost superfluous.

As previously mentioned, I like to imagine the reader as a visiting space alien, descending in a space ship as in an old science fiction movie. The space ship lowers to a level of several thousand feet to take a first look at a farm, a tractor, a cornfield and a small collection of farm animals. This first “thousand-foot view” helps the reader get oriented. If the invention is roller skate wheels, for instance, a first figure of a roller skate is very helpful in setting the stage for the description.

Imagine the reader as a visiting space alien.

After surveying the farm, I imagine the space alien descending to one hundred feet or so, slowly circling the object of interest—perhaps a cow—taking in various views and perspectives. The continuing inspection singles out and zooms in on a particular novel feature

The first “thousand-foot view” helps the reader get oriented and sets the stage for the description.

FIGURES

or element—the cowbell—paying particular attention to the details of this novel element. Once the cowbell has been studied, the alien will back up to a full view of the cow and then zoom in on the next interesting feature, repeating this process until the entire cow has been fully examined.

The set of figures should be a pictorial inspection of the invention. Start with the big picture and drill down on the various elements that

The set of figures should be a pictorial inspection of the invention.

are new, unique and necessary to making the invention work. Often the invention is a relatively small improvement in a conventional and well understood

apparatus. Pay particular attention to fully depicting this point of novelty from various views and levels of detail.

Photographs

While perfectly acceptable in a provisional application, photographs are generally not considered proper figures in a nonprovisional patent application. If

Photographs are appropriate in instances where it would be difficult to draw a figure.

they are the only practical medium for illustrating the claimed invention, the USPTO will accept black and white photographs as formal drawings

in nonprovisional utility patent applications. Additionally, photographs must be good enough quality so that all details in the picture are reproducible in a printed patent. Some examples of objects allowed to be submitted in photograph form include electrophoresis gels, blots, in vivo imaging, plants, and animals.

FIGURES



US006239968B1

(12) **United States Patent**
Kim et al.

(10) Patent No.: **US 6,239,968 B1**
(45) Date of Patent: **May 29, 2001**

(54) **DETACHABLE CASE FOR AN ELECTRONIC ORGANIZER**

(75) Inventors: **Daniel Sung-hwe Kim; Edwin Thorne, III; Dennis Joseph Boyle**, all of Palo Alto; **Markus Diebel**, San Francisco, all of CA (US); **Elisha Tal, Macabin (IL)**

(73) Assignee: **Ideo Product Development Inc.**, Palo Alto, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/451,679**

(22) Filed: **Nov. 30, 1999**

Related U.S. Application Data

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(51) Int. Cl.⁷ **H05K 5/00**

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(58) Field of Search **361/679-683; 345/168, 169, 905; 400/691-693; 220/581, 836, 843, 845, 848, 811, 813, 815, 4.22, 4.23; 206/38, 214, 232, 472, 471, 320, 576; 16/319, 284, 292, 317, 297, 223, 235**

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(74) Attorney, Agent, or Firm—Carr & Ferrell, LLP

(57) **ABSTRACT**

The present invention provides a personal information system unit detachable case. This case has a top cover assembly, a bottom cover assembly, both of which are pivotable around a longitudinal axis forming a hinge assembly. The top and bottom cover assemblies are similar in shape and function to allow a personal information management electronic system unit to be mounted within the case either facing to the right or to the left at the user's preference. Mounted on the hinge assembly is a mounting rail, which is pivotally mounted on the hinge assembly of the detachable case. This mounting rail extends most of the internal vertical dimension of the case. The mounting rail provides a means for removably attaching a personal management unit within the detachable case. Indents and other openings are provided in the top and/or bottom cover assemblies to accommodate a specific personal system unit or other type of electronic instrument whether it faces toward the top assembly or bottom assembly.

12 Claims, 11 Drawing Sheets

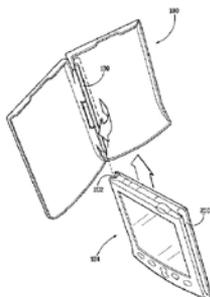


Figure 6.1 Examples of Different Views

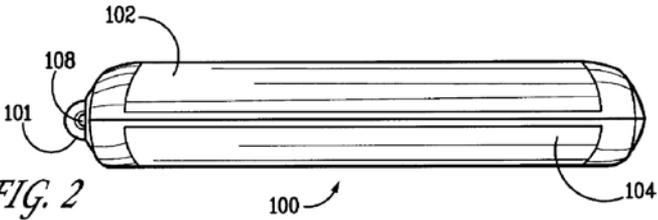


Figure 6.2 Example of a Front Elevation View

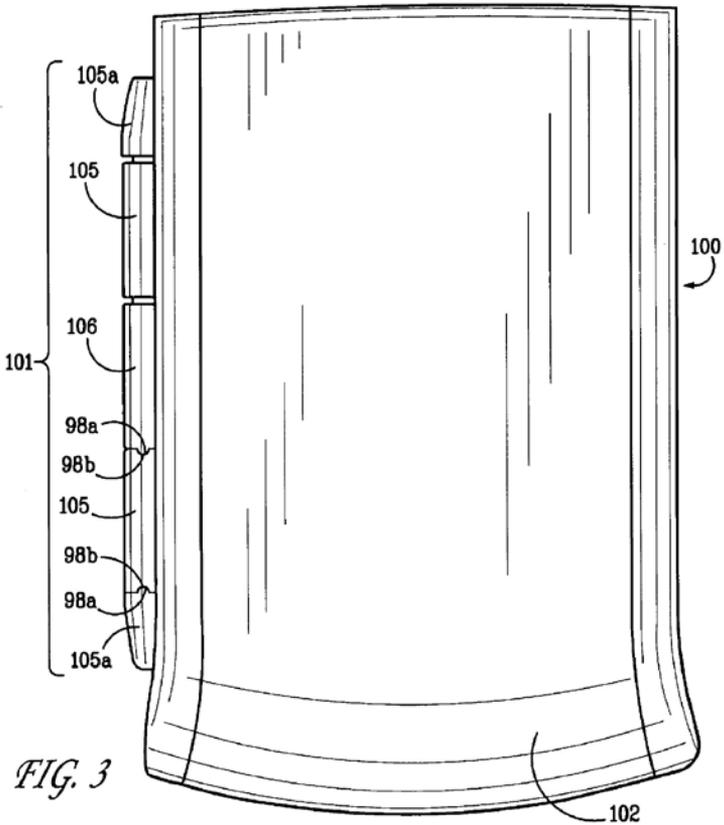


Figure 6.3 Example of a Top Plan View

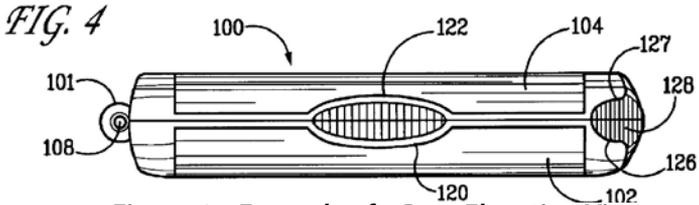


Figure 6.4 Example of a Rear Elevation View

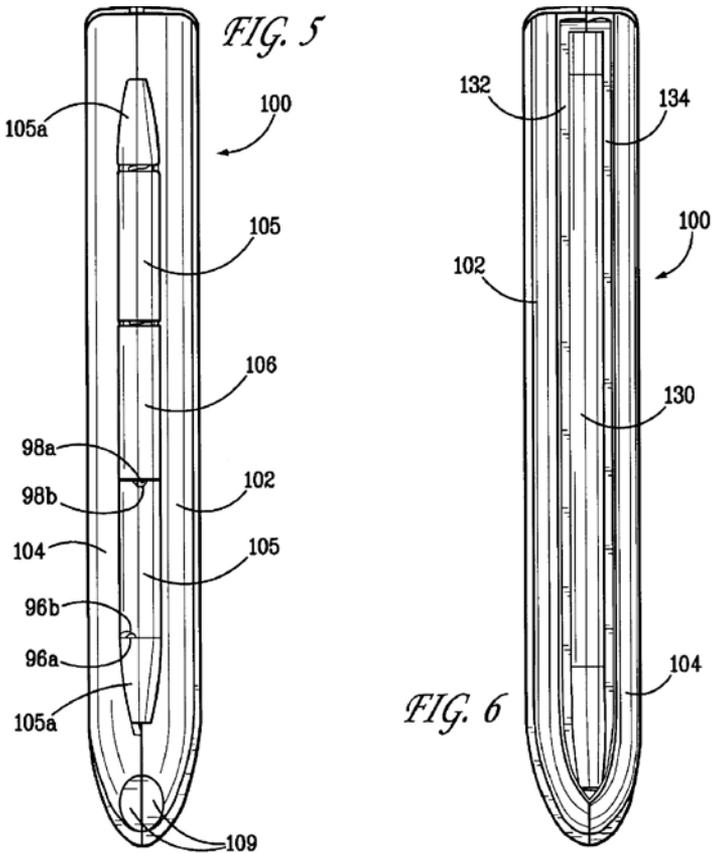


Figure 6.5 Example of Left and Right Side Elevation Views

FIG. 7

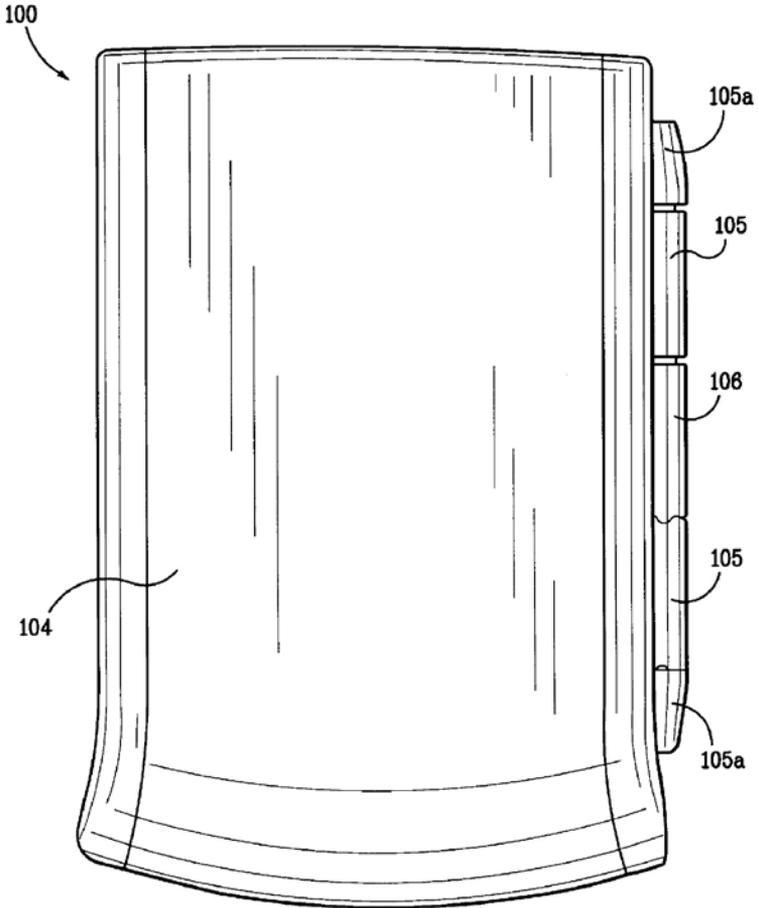


Figure 6.6 Example of a Bottom Plan View

FIGURES



US006480198B2

(12) **United States Patent**
Kang

(10) **Patent No.:** **US 6,480,198 B2**
(45) **Date of Patent:** **Nov. 12, 2002**

(54) **MULTI-FUNCTION CONTROLLER AND METHOD FOR A COMPUTER GRAPHICS DISPLAY SYSTEM**

(75) Inventor: **Dan C. Kang**, Sunnyvale, CA (US)

(73) Assignee: **S3 Graphics Co., Ltd.**, Grand Cayman (KN)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(21) Appl. No.: **09/481,371**

(22) Filed: **Jan. 10, 2000**

* cited by examiner

(65) **Prior Publication Data**

US 2001/0012015 A1 Aug. 9, 2001
(Under 37 CFR 1.47)

Primary Examiner—**Ke M. Tung**
(74) *Attorney, Agent, or Firm*—**Carr & Ferrell LLP**

Related U.S. Application Data

(57) ABSTRACT

(63) Continuation of application No. 08/884,361, filed on Jun. 27, 1997, now Pat. No. 6,052,133.

(51) **Int. Cl.**⁷ **G06F 15/76**

(52) **U.S. Cl.** **345/519; 345/520; 345/532; 345/542**

(58) **Field of Search** **345/302, 502, 345/507-509, 512, 513, 519-521, 526, 531, 541, 542, 557, 536, 532; 710/100, 126-129**

A multi-function controller in a computer graphics system performs the functions of a graphics processor, a video processor, a system memory controller, a cache controller, and a PCI bridge. The multi-function controller is connected to the host bus of the computer graphics display system to maximize performance. A graphics frame buffer and a system memory are combined into a unified system memory, which is controlled by and coupled to the multi-function controller.

7 Claims, 7 Drawing Sheets

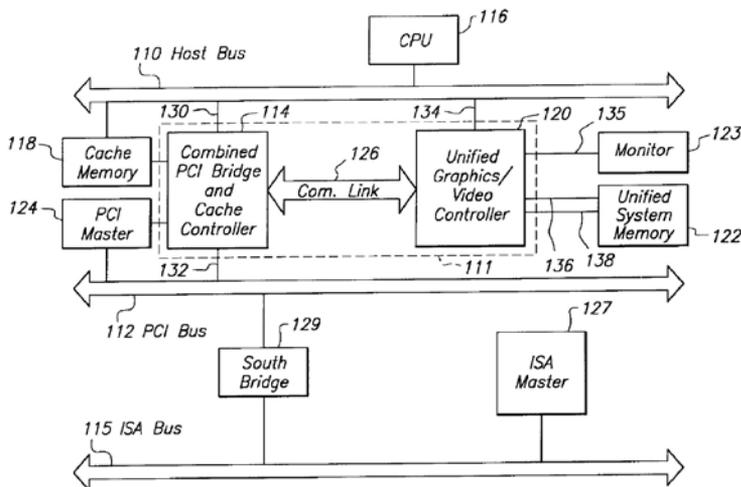


Figure 6.7 Example of a Block Diagram

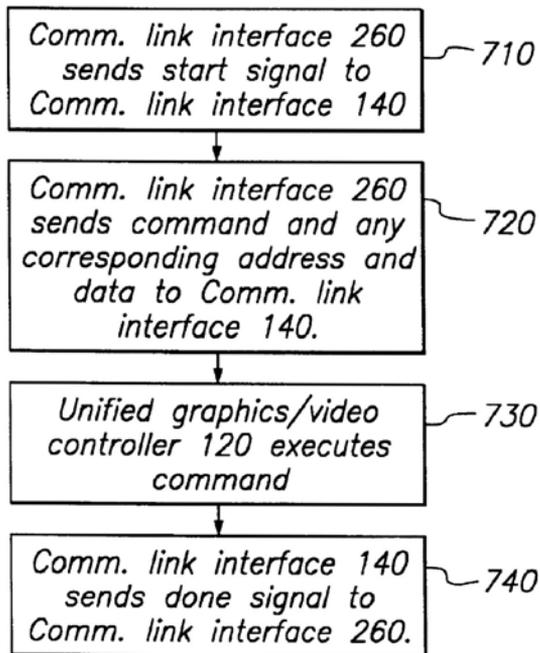
**FIG. 7**

Figure 6.8 Example of a Flow Chart

FIGURES

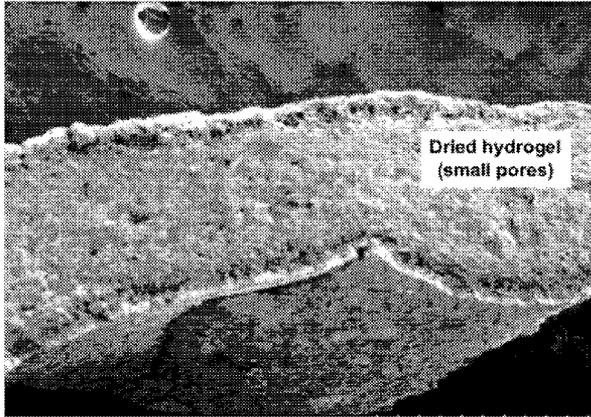


FIG. 1

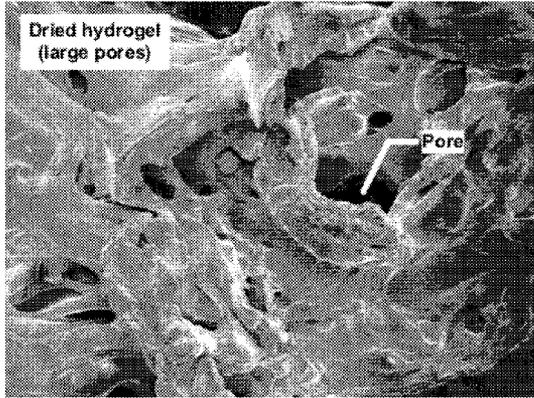


FIG. 2

Figure 6.9 Example of a Photograph

FIGURES

■ CHAPTER SEVEN ■

FILING PAPERS



Checklist

A comprehensive checklist is essential for avoiding errors in the preparation and filing of patent applications. Leaving out any component of an application can result in additional correspondence with the USPTO and potentially in the loss of the filing date.

Some patent deadlines have absolutely no flexibility.

Many years ago when I first opened my law practice, I spent most of my time writing patent applications and would routinely turn the finished documents over to my very competent secretary for copying and filing. One morning I arrived at the office early, and upon powering up the copy machine, I was horrified to find that one of the original figures from a patent application filed the evening before was stuck in the copier. I immediately checked our file copy, which should have been a complete duplicate of the filed application, and discovered there was no copy of the orphaned figure. Obviously one of two things had happened: either the file copy of the figure had been mailed to the USPTO with the other original figures from the application, or no copy of the figure had

been made and the patent application was incomplete when it was mailed.

One of the incredibly harsh realities of the patent system is that there are some very hard deadlines that have absolutely no flexibility. For instance, waiting one year and one day to file a patent application after the first sale of a product containing the invention will result in the waste of good postage on a useless application. There is no grace period, no extension, no excuse, and no forgiveness when dealing with the USPTO on a missed statutory filing deadline. Careers and companies have been inexorably altered by the mercilessness of our patent system.

We were incredibly fortunate in this case of the stuck figure. Luckily, it turned out that the invention had not yet been built or

Careers and companies have been inexorably altered by the inflexible deadlines the patent system imposes.

disclosed, so there were no statutory bar deadlines to worry about. I immediately refiled the patent application with copies of all the figures. Later, I requested and received a copy of the originally filed application from the USPTO and learned

that the figure indeed had been copied and filed with the original application. The results, however, could have been catastrophic. Had there been a bar date and had the copy of the figure not been sent with the application, the missing figure could have resulted in an incomplete patent application. With no application, the filing deadline would have been missed and the opportunity to receive a patent on the invention forever lost. At best, I would have had to argue to the USPTO that the missing figure was not necessary for a

complete description of the invention—always a tough argument. Alternatively, I would have had to try to add a new figure to the application, inferred from the written description and the figures that were included in the application.

The lesson I learned in this instance was that our office needed a better procedure for submitting patent applications. We religiously adopted the use of the filing checklist. Although our office uses the USPTO's Electronic Filing System (EFS) for the hundreds of applications we file every year, we still use a similar checklist with every application, just as every airline pilot checks down before taxiing to the runway. Note, however, that the checklist is only an aid in preparing documents for the application and not part of the application itself; do not submit it with the application to the USPTO.

Paper Filing and Electronic Filing

The USPTO accepts both paper and electronic application submissions. How an inventor chooses to file an application is generally a matter of preference, and each method carries certain benefits. For example, if a paper application is sent by Express Mail, the application will be considered filed on the date sent, while the electronic filing will have a filing date and time according to the eastern time zone when it was submitted. This can be helpful if the applicant is in a later time zone, which provides an extra hour or more to file on the current day. The electronic submission is instantaneous and may be more convenient if all

See Appendix C
for a provisional
filing checklist.

of the documents are prepared on the computer. In the next seven sections, we will cover paper filings, before moving on to electronic filing.

Filing Paper Checklist

- Return postcard
- Express Mail label
- Provisional application cover sheet
- Fee transmittal
- Check for filing fee OR credit card payment form
- Specification
- Drawings
- Assignment (*optional*)

Return Postcard

The return postcard acts as a confirmation of exactly what the USPTO has received.

Including a self-addressed, stamped return postcard with the provisional patent application provides a quick way to verify that the application was actually received by the USPTO.

The return postcard should clearly state the title of the invention and the name(s) of the inventor(s). It should also list all of the papers included in the application package, the filing fee check number, the total number of pages in the provisional application, and, if applicable, the number of drawing sheets. It

FILING PAPERS

is crucial that the return postcard itemizes all of the components of the provisional application (*see* Appendix D).

When the application is received in the mailroom of the USPTO, an intake clerk will compare the listing of the application papers recorded on the return postcard with the papers actually filed. Once the package contents have been audited, the postcard will be stamped with the date of receipt and a serial number and returned by US mail. If any of the listed items are not filed, they will be crossed out on the return postcard by the USPTO. This return postcard operates as a confirmation to the applicant of exactly what the USPTO has received in the application package. The return postcard stamped by the USPTO is notification that the provisional application documents have been submitted and are presumed received. Items omitted from the return postcard will not benefit from this presumption.

The provisional application serial number stamped by the USPTO on the return postcard is merely a preliminary assignment of a provisional application serial number and should not be relied upon as necessarily representing the final application serial number. The final serial number will be recorded on the filing receipt from the USPTO.

Use Express Mail to secure the earliest possible filing date.

Upon receiving the return postcard back from the USPTO, it is especially important to review it to ensure that every item you believe to be included in the mailing was indeed received by the USPTO.

Express Mail Label

Using Express Mail to send the provisional patent application to the USPTO will secure the earliest possible filing date. Any correspondence sent to the USPTO, including the provisional patent application filing, delivered using the *Express Mail Post Office to Addressee* service of the United States Postal Service (USPS) will be deemed as filed in the USPTO on the date of deposit with the USPS.

The USPS date of deposit is the “date-in” on the Express Mail mailing label or other official USPS form. An application sent via Express Mail on a Saturday, Sunday, or federal holiday will receive the filing date of the next working day.

The date recorded on the Express Mail filing receipt may vary depending on where, how, and what time of day the package is deposited with the USPS. If the exact filing date is important, especially if a filing deadline is looming, the filer should physically hand the Express Mail package to a postal representative and insist on a receipt showing the date mailed. In the event that proof is ever required, this receipt will be evidence as to when the filing actually occurred.

Provisional Application Cover Sheet

A transmittal cover sheet must be filed with a provisional patent application. When filing a provisional patent application, the title of the transmittal cover sheet is required to specify that the submission is for a provisional patent application. If a provisional

patent application is not designated as such, the application will be received and processed by the USPTO as a nonprovisional patent application. This patent application cover sheet forms a table of contents identifying the inventor, the title of the invention, and an address that can be used for correspondence. The cover sheet also lists the included components of the application, as well as the amount and method of payment of the filing fee. The enclosed application parts section identifies the number of pages corresponding to each section, as well as whether assignment papers and a return receipt postcard are included. If a patent attorney or patent agent files the application, the cover sheet must also list the attorney's or agent's name and registration number.

The provisional patent cover sheet functions as a table of contents for the application package.

Fee Transmittal

The fee transmittal is a form that is used to calculate and identify fees accompanying the provisional patent application. Only the basic filing fee is due for filing a provisional application. The basic filing fee depends upon the size of the entity filing for the provisional patent application. *A large entity* is currently defined as an entity with more than five hundred employees, or one that has licensed the invention to an entity or entities with more than five hundred employees. An applicant that is too small to meet the large entity definition may file a provisional application as either *a small entity* or as a *micro entity*, and receive fifty percent or seventy-five percent reduction in filing fees,

FILING PAPERS

respectively. Eligibility for small entity and micro entity status is based on size of the applicant entity and various other restrictions. A small entity may not transfer or be required to transfer rights in the invention to an entity that does not meet small entity size requirements, unless the transfer is to a federal agency. A micro entity, meanwhile, faces even stricter eligibility requirements. A micro entity applicant cannot be a named inventor on more than four previously filed patent applications.* Moreover, a micro entity's gross income must be less than three times the latest reported median household income, and it may not transfer rights in the invention to an entity with a gross income greater than three times the latest reported median household income. An applicant filing as a small or micro entity must indicate on both the fee transmittal and the provisional application cover sheet that they are filing as a small or micro entity. Although it may be tempting to pay the discounted fees in order to save money, if the small or micro entity fee is improperly paid by a large entity, the provisional patent filing can be deemed invalid.** The option to pay the micro entity fee will be available when the USPTO sets or adjusts fees for filing, searching, examining, issuing, appealing, and maintaining patent applications and patents following September 16, 2011.

** Patent applications from a previous job that have been assigned or are under an obligation to be assigned are excluded from the requirement.*

*** The option to pay the micro entity fee will be available the next time the USPTO sets or adjusts fees for filing, searching, examining, issuing, appealing, and maintaining patent applications and patents.*

FILING PAPERS

PTO/SB/16 (03-13)

Approved for use through 01/31/2014. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995 no persons are required to respond to a collection of information unless it displays a valid OMB control number

PROVISIONAL APPLICATION FOR PATENT COVER SHEET – Page 1 of 2

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. _____

INVENTOR(S)		
Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
Additional inventors are being named on the _____ separately numbered sheets attached hereto.		
TITLE OF THE INVENTION (500 characters max):		
Direct all correspondence to: CORRESPONDENCE ADDRESS		
<input type="checkbox"/> The address corresponding to Customer Number: 		
OR		
<input type="checkbox"/> Firm or Individual Name		
Address		
City	State	Zip
Country	Telephone	Email
ENCLOSED APPLICATION PARTS (check all that apply)		
<input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76.		
<input type="checkbox"/> Drawing(s) <i>Number of Sheets</i> _____		
<input type="checkbox"/> Specification (e.g., description of the invention) <i>Number of Pages</i> _____		
<input type="checkbox"/> CD(s), Number of CDs _____		
<input type="checkbox"/> Other (specify) _____		
Fees Due: Filing Fee of \$260 (\$130 for small entity) (\$65 for micro entity). If the specification and drawings exceed 100 sheets of paper, an application size fee is also due, which is \$400 (\$200 for small entity) (\$100 for micro entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).		
METHOD OF PAYMENT OF THE FILING FEE AND APPLICATION SIZE FEE FOR THIS PROVISIONAL APPLICATION FOR PATENT		
<input type="checkbox"/> Applicant asserts small entity status. See 37 CFR 1.27.		
<input type="checkbox"/> Applicant certifies micro entity status. See 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent.		
<input type="checkbox"/> A check or money order made payable to the <i>Director of the United States Patent and Trademark Office</i> is enclosed to cover the filing fee and application size fee (if applicable).		
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.		
<input type="checkbox"/> The Director is hereby authorized to charge the filing fee and application size fee (if applicable) or credit any overpayment to Deposit Account Number: _____		
<div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block;"></div> TOTAL FEE AMOUNT (\$)		

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 10 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Figure 7.1A Provisional Patent Application Cover Sheet for Paper Filing

FILING PAPERS

Since November 15, 2011, the USPTO charges up to an additional \$400 fee for each patent application not filed electronically. This fee does not apply to design, plant, and, more importantly, provisional applications.

In addition to the basic filing fee, if an assignment is filed concurrently with the provisional patent application, a fee to record the assignment must also be paid.

If the filing fee sent with the application is not correct as required by the current schedule of fees, the USPTO will contact the inventor or attorney for the inventor, requesting further fees to make up any deficiency.

Assignment (*Optional*)

Patents and patent applications possess the same attributes as personal property and can be purchased and sold accordingly. An assignment of a patent or application formally takes place when one party transfers its ownership interest—and the rights associated with that ownership interest—to another party.

Ownership of a patent gives the patent owner the right to exclude others from making, using, offering for sale, selling, or importing the invention claimed in the patent into the United States. Unless and until an assignment is filed, the named inventor(s) of the invention personally own and have rights to the patent application. However, if the ownership of the patent is to be transferred immediately upon filing the application, an assignment may be included with the application materials.

The patent application must be assigned by a written

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document. While notarization of an assignment is not required, a notarized assignment can later serve as evidence of the authenticity of the assignment. If an assignment is not recorded with the USPTO, it is void against anyone who later purchases the application or patent for valuable consideration without notice.

An assignment document submitted to the USPTO for recording is required to include a cover sheet identifying:

- the name of the party (assignor) conveying the interest
- the name and address of the party (assignee) receiving the interest
- a description of the interest conveyed or transaction to be recorded
- the provisional patent application number against which the document is to be recorded, or an indication that the document is filed with the patent application
- the name and address of the party to whom correspondence concerning the request to record the document should be mailed
- the number of provisional patent applications to be recorded and the total fee
- the date the document was executed
- the signature of the party submitting the document

Addressed Envelope

Always make sure that your patent application, as well as any mail you send to the USPTO, includes a complete return address and zip code.

The provisional application, in its entirety, should be sent via Express Mail, unfolded, in an Express Mail envelope to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Preparing Documents for Electronic Filing

Several documents should be prepared before electronically filing the provisional application. The following two sections discuss the preparation of the provisional application cover sheet and ensure that all documents are in a format acceptable by the USPTO.

Filling Out the Provisional Application Cover Sheet

The provisional application cover sheet is available on the USPTO website forms page. You should select the SB16 EFS-WEB form, which is much easier to handle electronically, rather than the standard SB16 form. If you choose the standard form, you will have to fill it out by hand, then scan and convert it to Adobe PDF format. Specific instructions on filling out the SB16 EFS-WEB form are also available on this page. You can type and

FILING PAPERS

sign the SB16 EFS-WEB form using the latest version of Adobe Reader, available for free at <http://www.adobe.com>.

The process for filling out this form is much the same as for filling out the standard SB16 form, except that you can do it in your web browser or Adobe application.

- Fill in the *Inventor* name and address at the top, clicking on *Add* and repeating if you need to list additional inventors.
- Fill in the *Title of the Invention* and, optionally, the *Attorney Docket Number*.
- Select *Firm* or *Individual Name*, and fill in your name, address, and phone number for correspondence. For *The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government*, select *No*, unless it is true. Likewise select *Yes* for *Small Entity*, unless you are a *Large Entity*.
- Under *Signature*, sign your name in the format /First name Last name/ and enter the *Date*.
- Fill in *First Name* and *Last Name*. Your provisional application cover sheet is complete.
- Go to the *File* menu and *Save* the document in the same folder as your other provisional patent application documents.

Creating Adobe PDF Documents

The USPTO EFS does not allow for the submission of Adobe

PDF documents with non-embedded fonts. If you use Adobe Acrobat Professional to create your Adobe PDF documents, the USPTO has published a settings file that you can download to create compliant documents. This file, as well as a document explaining how to use it, is available at <http://www.uspto.gov/patents/process/file/efs/guidance/index.jsp> (*see* Job Options). If you do not have this software, the USPTO lists other software that can be used to create compliant documents, some of which are free at http://www.uspto.gov/patents/process/file/efs/guidance/efswweb_compatibility.pdf.

If you run into problems creating compliant documents according to the above instructions—anecdotally, some applicants have, perhaps due to ongoing changes in software and/or to EFS itself—another solution is simply to convert all documents to image PDFs, which contain no metadata at all. Such image PDF files are usually quite large, however, and can present other disadvantages due to their lack of metadata (namely recognition of the text contained therein).

Electronic Filing of Your Provisional Patent Application

As of 2011, the EFS is used by most law firms. There is, however, a learning curve associated with the EFS, so if you are filing only one or two provisional patent applications, it is probably easier to mail a paper application. The USPTO allows the pro se applicant the option of becoming a registered eFiler. This registration takes several weeks, and most of the advantages

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Form PTO-1595 (Rev. 03-11)
OMB No. 0651-0027 (exp. 04/30/2015)

U.S. DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

RECORDATION FORM COVER SHEET PATENTS ONLY	
To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.	
1. Name of conveying party(ies) Additional name(s) of conveying party(ies) attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	2. Name and address of receiving party(ies) Name: _____ Internal Address: _____ _____ Street Address: _____ _____ City: _____ State: _____ Country: _____ Zip: _____ Additional name(s) & address(es) attached? <input type="checkbox"/> Yes <input type="checkbox"/> No
3. Nature of conveyance/Execution Date(s): Execution Date(s) _____ <input type="checkbox"/> Assignment <input type="checkbox"/> Merger <input type="checkbox"/> Security Agreement <input type="checkbox"/> Change of Name <input type="checkbox"/> Joint Research Agreement <input type="checkbox"/> Government Interest Assignment <input type="checkbox"/> Executive Order 9424, Confirmatory License <input type="checkbox"/> Other _____	4. Application or patent number(s): <input type="checkbox"/> This document is being filed together with a new application. A. Patent Application No.(s) _____ B. Patent No.(s) _____ Additional numbers attached? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Name and address to whom correspondence concerning document should be mailed: Name: _____ Internal Address: _____ _____ Street Address: _____ _____ City: _____ State: _____ Zip: _____ Phone Number: _____ Docket Number: _____ Email Address: _____	6. Total number of applications and patents involved: _____ 7. Total fee (37 CFR 1.21(h) & 3.41) \$ _____ <input type="checkbox"/> Authorized to be charged to deposit account <input type="checkbox"/> Enclosed <input type="checkbox"/> None required (government interest not affecting title)
9. Signature: _____ <div style="display: flex; justify-content: space-between; width: 80%; margin-left: auto; margin-right: auto;"> Signature Date </div> <div style="display: flex; justify-content: space-between; width: 80%; margin-left: auto; margin-right: auto; margin-top: 10px;"> Name of Person Signing Total number of pages including cover sheet, attachments, and documents: <input style="width: 40px;" type="text"/> </div>	8. Payment Information Deposit Account Number _____ Authorized User Name _____
<small>Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to: Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450</small>	

Figure 7.3 Assignment of Application

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of registration do not apply to provisional patent applications. In addition, assignment recordations cannot be made with the EFS system. The applicant must use the entirely separate EPAS system, which will be discussed below.

The EFS Web Help Center can be found at <http://www.uspto.gov/patents/process/file/efs/guidance/index.jsp>. For a list of web browsers compatible with EFS, see http://www.uspto.gov/patents/process/file/efs/guidance/efswb_compatibility.pdf. Also, you can call the patent Electronic Business Center at (866) 217-9197, or contact via e-mail at EBC@uspto.gov. Note that the help center also has a simulated EFS so you see what the process looks like before actually filing an application.

Sign-on as an UNREGISTERED eFILER

* e-Filer Last Name:

* e-Filer First Name:

* e-Filer E-Mail Address:

*Main Functions

New application

(This includes new filings of continuation, divisional, and continuation-in-part applications. A request for continued examination existing documents and must be filed as a registered eFiler.)

*Select Type of New Application

Utility (Please select a type below) 

-  Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a) 
- Accelerated Exam 
- Nonprovisional Application under 35 USC 111(a) 
- Provisional 
- Reexam 
- Reissue 
- U.S. National Stage under 35 USC 371 

Design (Please select a type below) 

International Application for filing in the US receiving office 

Existing application/patent 

 Privacy Policy

Figure 7.4

FILING PAPERS

To start a patent application filing by the EFS, go to the Electronic Business Center (EBC) at <http://www.uspto.gov/patents/process/file/efs/index.jsp>. There, you will see the options EFS-Web Unregistered eFilers and EFS-Web Registered eFilers. (Figure 7.4) Since most of the people using this chapter will fall under the first category (and the procedure for using both is quite similar), we will spend the rest of this chapter assuming that the applicant is an unregistered eFiler.

Clicking the first option will take you to the Unregistered eFiler page. Enter your last name, first name and e-mail address. Then select *New Application, Utility and Provisional* and click *Continue*. Note that there are information icons marked “i” that you can click to provide information on particular fields.

When you reach the next form, *Application Data*, enter the title of the invention. You can also enter the attorney docket number to distinguish one application from another one, although there is no attorney in this situation. Next select *Correspondence Address* and fill in the relevant information. The telephone number and e-mail address are not required information but should be entered. Click *Continue*.

This will take you to the *Attach Documents* page. Note that you can go backward and forward in your application by clicking on the tabs at the top of the screen. Take a moment to read the *Please Read Announcements* page, then return to the *Attach Documents* page using the tabs. Under *Files to be Submitted*, browse for or enter the path to your provisional application cover sheet, PTO/SB/16. Then under *Category*, select *Application Part*, and under

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Document Description, select *Provisional Application Cover Sheet*.

* Title of Invention	<input type="text" value="John Doe Machine"/>	
Attorney Docket Number	<input type="text"/>	
First Named Inventor: 		
*First Name	<input type="text" value="John"/>	
Middle Name	<input type="text"/>	
* Last Name	<input type="text" value="Doe"/>	
Correspondence Address: 		
Enter a customer number for correspondence or provide an address where USPTO should send correspondence for this application.		
<input type="radio"/> Customer Number		
OR		
<input checked="" type="radio"/> Correspondence Address		
If you do not have a customer number, please provide a correspondence address.		
*Name 1	<input type="text" value="John Doe"/>	
Name 2	<input type="text"/>	
*Street Address 1	<input type="text" value="1234 Some Street"/>	
Street Address 2	<input type="text"/>	
* City	<input type="text"/>	

Figure 7.5

Next, click *Add File*. Although not absolutely required, your provisional patent application should include an abstract and claims, in addition to the specification (*see* Chapter 5). You can upload each of these parts as a single Adobe PDF document or broken up into two or more documents (*see* Creating Adobe PDF

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Documents *above for details on how to create the documents*). If a document that you upload contains more than one part, select *Yes* for *Does your PDF file contain multiple documents?*, then enter the page numbers that correspond to each of those parts. Likewise, select *No* if the document does not have more than one part. Click *Add Document* if you need to upload more than one document. Under *Document Description*, enter specification, claims and abstract as appropriate. If your document does not contain claims or an abstract, don't worry; remember, these are not required in a provisional patent application. Click *Upload & Validate*.

Register & e-file	Please Read Announcements	Application Data	Attach Documents	Review Documents	Calculate Fees	Confirm & Submit	Pay Fees	Receipt
Attach Documents								
A submission has not been filed officially at the USPTO until the e-filer executes the Submit function and the documents are received at the USPTO Eastern Time. The Acknowledgement Receipt is evidence of this submission.								
This is the application data associated with your filing. If any information is incorrect, please edit the Application Data								
Title of Invention	John Doe Machine							
First Named Inventor	John Doe							
Customer Number or Correspondence Address	John Doe Some 1234 Some Street San Francisco CA 94116 US							
Filed By	John Doe							
Attorney Docket Number								
Application Type	Provisional							
Files to be Submitted	Category	Document Description						
1 Choose File SB16-EFS_Pro...er_Sheet.pdf	View All Categories	Provisional Cover Sheet (SB16) Delete						
Does your PDF file contain multiple documents?	<input type="radio"/> Yes <input checked="" type="radio"/> No							
2 Choose File Specification.pdf	View All Categories	Specification Delete						
Does your PDF file contain multiple documents?	<input type="radio"/> Yes <input checked="" type="radio"/> No							
3 Choose File Figure.pdf	View All Categories	Drawings-only black and white line drawings Delete						
Does your PDF file contain multiple documents?	<input type="radio"/> Yes <input checked="" type="radio"/> No							
4 Choose File Claim.pdf	View All Categories	Claims Delete						
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5 Choose File Abstract.pdf	View All Categories	Abstract Delete						
Does your PDF file contain multiple documents?	<input type="radio"/> Yes <input checked="" type="radio"/> No							
Add File								
A provisional application must include a cover sheet required by § 1.51(c)(1) (e.g. form PTO/SB/16), which may be an application data sheet or a cover letter identifying the application as a provisional application that meets the requirements of § 1.51(c)(1).								

Figure 7.6

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The next page is the *Review Documents* page. If there is an error in the application data, click on the *Application Data* tab to go back and correct that information. If EFS indicates a yellow triangle warning or red triangle error with any of your documents, remove the relevant documents and correct the errors. Then click on the *Attach Documents* tab to upload the corrected documents. When you have returned to the *Review Documents* page and there are no errors, click *Continue*.

Title of Invention	John Doe Machine				
First Named Inventor	John Doe				
Customer Number or Correspondence Address	John Doe Some 1234 Some Street San Francisco CA 94116 US				
Filed By	John Doe				
Attorney Docket Number					
Application Type	Provisional				

To Review a Document, please click on the document name. To add more files please [Attach Files](#)

Validation Status	Files to be Submitted	Multi-Doc PDF	Document Description	Page Count	Size	
WARNINGS	SB16: EFS Provisional Cover Sheet.pdf	NO	Provisional Cover Sheet (SB16)	1	2797 bytes	Edit Remove
◆ No validation errors found.						
PASS	Specification.pdf	NO	Specification	1	2797 bytes	Edit Remove
◆ No validation errors found.						
PASS	Figure.pdf	NO	Drawings-only black and white line drawings	1	2797 bytes	Edit Remove
◆ No validation errors found.						
PASS	Claim.pdf	NO	Claims	1	2797 bytes	Edit Remove
◆ No validation errors found.						
PASS	Abstract.pdf	NO	Abstract	1	2797 bytes	Edit Remove
◆ No validation errors found.						

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◆ No Error(s) ▲ Warning(s) ▼ Error(s) found
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Figure 7.7

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This will take you to the *Submit Application* page. Verify that all the data listed on the page is correct. Also, click on the names of each of the documents, which will open them up in separate screens (note that an additional document, *fee-info.pdf*, has been generated in the previous step). Scroll through each document to make sure it has been uploaded correctly, then click *Continue*.

EFS Unregistered

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Calculate Fees

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A submission has not been filed officially at the USPTO until the e-filer executes the Submit function and the documents are received at the USPTO Eastern Time. The Acknowledgement Receipt is evidence of this submission.

Current Business Size: **Large Entity**
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Fee Calculator

Total Fees Due: \$

Provisional Patent Application Filing Fees

Provisional

Amount \$250

Fee Code 1005 Sub-Total \$

Application Size Fee - Number of Pages in the Specification (including any external tables) and drawings [?](#)

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Number of Pages * .75 = - 100 = / 50 = * \$ 310 = Sub-Total \$

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- To ask questions about Patent e-Filing, or to suggest improvements to the online system, please call the Patent Electronic Business Center at (866) 217-9197 (toll free) or send email to ERC@uspto.gov.
- Send general questions about USPTO programs to the [USPTO Contact Center \(USCC\)](#).
- If you experience technical difficulties or problems with this application, please report them via e-mail to [Electronic Business Support](#) or call 1 800-786-9199.
- For general questions regarding a petition, or requirements for filing a petition, contact the Office of Petitions Help Desk at 1 800-786-9199.

or material you would like featured on this section by e-mail to the webmaster@uspto.gov. While we cannot promise to accommodate all requests, your suggestions will be considered and may lead to other improvements on the website.

Figure 7.8

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Application	Please Read Announcements	Application Data	Attach Documents	Review Documents	Calculate Fees	Confirm & Submit	Pay Fees	Receipt
submit Application								
submission has not been filed officially at the USPTO until the e-filer executes the Submit function and the documents are received at the USPTO Eastern Time. The Acknowledgement Receipt is evidence of this submission.								
this is the application data associated with your submission. If any information is incorrect, please edit the Application Data								
Title of Invention	John Doe Machine							
First Named Inventor	John Doe							
Customer Number or Correspondence Address	John Doe Some 1234 Some Street San Francisco CA 94116 US							
Filed By	John Doe							
Attorney Docket Number								
Application Type	Provisional							
this is the fee data associated with your submission. If the following amount is incorrect, please edit the Fee Calculation								
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To Review a Document, please click on the document name.								
Sequence	Files to be Submitted	Page Count	Document Description	File Size	Validation Status Message			
1	SB16 FFZ_Provisional_Cover_Sheet.pdf No validation errors found.	1	Provisional Cover Sheet (SB16)	2797 byte	PASS			
2	Specification.pdf No validation errors found.	1	Specification	2797 byte	PASS			
3	Figure.pdf No validation errors found.	1	Drawings-only black and white line drawings	2797 byte	PASS			
4	Claim.pdf No validation errors found.	1	Claims	2797 byte	PASS			
5	Abstract.pdf No validation errors found.	1	Abstract	2797 byte	PASS			
6	fee-info.pdf No validation errors found.	2	Fee Worksheet (SB06)	28128 byte	PASS			
Edit Attached Files								
<input type="button" value="Cancel"/> <input type="button" value="Submit"/> Please click Submit only once								

Figure 7.9

The next screen is the *Review Fees* page. You will be given the options of *Yes—I Want to Pay Now* and *No—I Want to Pay Later*. You should opt to pay now to avoid the additional fee associated with paying later and to avoid the even more serious problem of losing your filing date should you fail to pay later.

This will take you to the *You Are Ready to Pay Fees* page. Click on *Pay by Credit Card* or *Pay by EFT* and enter the appropriate payment information. Click on *Continue* and confirm the payment information. We will assume you will pay by credit

card, though the process is similar for EFT.

You will arrive at the *Pay Fees by Credit Card* page. Click *Confirm eCharge Information*. You will then be directed to a second *Pay Fees by Credit Card* page. Next, click *Charge This Credit Card Now*.

This will take you to the *Acknowledgement Receipt* page. Click on *Save* and an Adobe PDF document will open up with your filing information. Save this document and print it for your records.

Electronic Assignment Recordation

If you wish to record an assignment of your provisional patent application electronically, you must use an entirely different system on the USPTO website, the Electronic Patent Assignment System (EPAS), available at <http://epas.uspto.gov>. You can do this whether you filed your patent application electronically or by mail, but you must have the patent application number on hand, which you will receive several weeks after you file a paper application, but momentarily when you file electronically.

Note that a dedicated fax number is required when using EPAS, in order to receive the Official Notice of Recordation. The EPAS home page has software requirements and a help fax line phone number and e-mail address.

To start the process, go to the bottom of the EPAS home page and click on *Please Click Here* to access EPAS forms. This will take you to the *Guidelines* page. Here, click on *Start* (rather than *Start from Template*, which requires you to download a template

and is useful only for filing multiple assignment recordations). Note that you can go backward and forward in your assignment by clicking on the links at the top of the screen.

This will take you to the *Conveyance Type* page, where you will select *Assignment* and click *Next Screen*. The hyperlinked descriptors provide additional information if you click on them.

You will arrive at the *Correspondence Information* page, where you are required to fill in a name, address, e-mail address, and fax number where the Official Notice of Recordation will be faxed.

The next page is the *Conveying Party(ies)* page. Select *Individual*, enter information for the first inventor and enter the date of execution (when the assignment was signed). If there is only one inventor, then click *Add and Go to the Next Screen*. If there are additional inventors, click on *Add* and repeat for the next inventor until you have entered all the inventors. Note that from this point forward, you can click *Save* and the system will save your work for four days and give you a link to access it later.

On the *Receiving Party(ies)* page, you will presumably select *Company* and enter information for the company receiving the assignment. Then click on *Add and Go to the Next Screen*.

This will take you to the *Property(ies)* page, where you will enter the application number of your patent application (eg, 61/111,222).

The following page is the *Image Attachments* page, where you will browse for or enter the path to a scanned image of the assignment. Note that only .pdf, .tif or .txt files are allowed. Next click *Attach File*, and after you see the image of the document in

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You will then arrive at the *Signature* page. Verify that all the information is correct, then enter your signature in an allowed format as described at the top of the page (e.g. /First Name Last Name/). Also enter your name, then click *Next Screen*.

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The next page is the *Payment* screen. Click on *Pay by Credit Card* or *Pay by EFT* and enter the appropriate payment information. Click on and confirm the payment information. You can also optionally enter an attorney docket number. Click *Submit*.

This will take you to the *Confirmation of Receipt* screen where the EPAS tracking identification number, acknowledging receipt of your submission, will be displayed to the screen. An e-mail acknowledgement will also be sent to you. Save and/or print a copy of this screen for your records. You should receive your Official Notice of Recordation by e-mail, fax, or US Mail within a matter of weeks.

■ CHAPTER EIGHT ■

MAILING AND CALENDARING



Copy of Filing Documents

Before mailing the completed patent application, make sure to copy all papers being submitted. Although the mail system and USPTO are very reliable considering the number of documents they handle, patent applications do occasionally get lost in the mail or misplaced at the USPTO. Keeping a complete copy is cheap insurance against a transmittal problem that may arise later.

Do not forget to keep a complete copy of your filed patent application.

The Mailing Process

A patent application may be delivered to the USPTO by any form of mail or by hand delivery. In order to obtain the earliest possible filing date, however, either hand deliver or send the provisional patent application to the USPTO by USPS Express Mail. When delivering Express Mail to the post office, remember to ask for a stamped mailing receipt in order to have proof of the date submitted.

Calendaring

A complete copy of your application is cheap insurance against transmittal problems, should they arise.

Once the USPTO issues an effective filing date for the provisional patent application, it is absolutely essential to record the one-year anniversary of the filing date on a calendar. This is extremely important as the provisional patent application will remain pending for exactly one year. Just like Cinderella's carriage at midnight, unless a nonprovisional application is filed, the provisional patent application will automatically turn into mice and pumpkins at the end of the year. There are absolutely no extensions or magic potions that will revive an abandoned provisional patent application once the year has passed. Not even one glass slipper will remain.

If the patent application's one-year cutoff date falls on a Saturday, Sunday, or federal holiday, the life of the provisional patent application is extended until the next business day.

Filing Receipt

Once the USPTO establishes that the provisional patent application is complete (having met the minimum requirements to receive a filing date), a filing receipt will be granted and sent to the applicant or attorney. This filing receipt identifies the inventor(s), the title of the invention, the serial number, and the filing date of the provisional patent application. Issuance of the filing receipt usually occurs within three or four months from

MAILING AND CALENDARING

the date the application was filed. The filing receipt signifies the official designation of a final serial number for the application by the USPTO. If the application serial number on the filing receipt differs from the preliminary serial number printed on the return postcard, the number on the filing receipt controls.

No magic potions are available to revive an abandoned provisional patent application.

MAILING AND CALENDARING

■ CHAPTER NINE ■

RESOURCES



The **United States Copyright Office** website is the official government site for information on licensing and registering work.

Government Resources

The official **United States Patent & Trademark Office** website provides information on current patent laws and filing information, including filing of both provisional and nonprovisional patent applications:

- <http://www.uspto.gov> (general)
- <http://oedci.uspto.gov/OEDCI/query.jsp> (search page to find a registered patent attorney or patent agent)
- <http://www.uspto.gov/forms/index.jsp> (the latest USPTO forms can be found here; forms used with the provisional application are PTO/SB/16, PTO/SB/17, and PTO-1595)
- <http://www.uspto.gov/patents/process/file/efs/index.jsp> (**USPTO EFS website**)

RESOURCES

- <http://epas.uspto.gov/> (**USPTO EPAS website**)

Patent Resources

The following websites enable to you to obtain and download copies of issued US patents and applications:

- Thomson Reuters, <http://www.micropat.com>
- Patent Fetcher®, <http://www.patentfetcher.com>
- Google Patent Search, <http://www.google.com/patents>

Entrepreneur Resources

Other websites that provide helpful and pertinent information for an entrepreneur include:

- BayWater Publishing, <http://www.BayWaterPublishing.com>
- Carr and Ferrell LLP Attorneys at Law,
<http://www.CarrFerrell.com>
- StephenKey, <http://www.inventright.com>
- PatentLawLinks.com, <http://www.patentlawlinks.com>

Books

The following written resources are recommended:

Ferrell, John S. *Monopoly Protection: The 90-Minute Guide to*

RESOURCES

Patents, Trademarks, Copyrights, and Trade Secrets. Menlo Park: BayWater Publishing, 2013.

Pressman, David. *Patent it Yourself*. Berkeley: Nolo Press, 1986, 2002.

Rivette, Kevin G. and David Kline. *Rembrandts in the Attic: Unlocking the Hidden Value of Patents*. Boston: Harvard Business School Press, 1999.

Kawasaki, Guy and Michele Moreno. *Rules For Revolutionaries: The Capitalist Manifesto for Creating and Marketing New Products and Services*. New York: Harper Collins Publishers, HarperBusiness, 1999, 2000.

Kawasaki, Guy. *Selling the Dream*. New York: Harper Collins Publishers, 1991, 1992.

Appendices

- A. Sample Nonprovisional Patent Application
- B. Sample Issued Patent
- C. Provisional Filing Checklist
- D. Provisional Application Cover Sheet
- E. Fee Transmittal
- F. Patent Assignment
- G. Non-Disclosure Agreement
- H. Sample Product Sell Letter – Request Meeting
- I. Sample Product Sell Letter – Trade Show Meeting

RESOURCES

J. Sample Patent License Letter

*Please check the Patent and Trademark Office (USPTO) website (www.uspto.gov) before filing any form to ensure a revision has not been issued.

APPENDICES

APPENDIX A

PTO/SB/16 (11-95)

Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

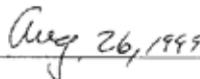
PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (b)(2) & 1.51(a)(2)(i).

Docket No.		PA1212		Type a plus sign (+) inside this box ->			
INVENTOR(s) / APPLICANT(s)							
LAST NAME	FIRST NAME	MIDDLE INITIAL	RESIDENCE (CITY AND EITHER STATE OR FOREIGN COUNTRY)				
Thorne, III	Edwin		Palo Alto, California				
TITLE OF INVENTION (280 characters max)							
"UNDERWATER FLYING DISC"							
CORRESPONDENCE ADDRESS							
Franklyn C. Weiss Carr & Ferrell LLP 2225 East Bayshore Road, Suite 200 Palo Alto				Tel: (650) 812-3473 Fax: (650) 812-3444			
STATE:	California	ZIP CODE:	94303	COUNTRY:	U.S.A.		
ENCLOSED APPLICATION PARTS (check all that apply)							
<input checked="" type="checkbox"/> Specification		Number of Pages [17]		<input type="checkbox"/> Small Entity Statement			
<input checked="" type="checkbox"/> Drawing(s)		Number of Sheets [6]		<input checked="" type="checkbox"/> Other (specify): Express Mail Certificate, Return Postcard			
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT							
<input type="checkbox"/> A check or money order is enclosed to cover the filing fees.							
<input type="checkbox"/> The Commissioner is hereby authorized to charge the filing fees and credit Deposit Account No. 06-0600.							
<input type="checkbox"/> The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 06-0600. A duplicate copy of this sheet is attached.							
						Filing Fee Amount (\$):	\$
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.							
<input checked="" type="checkbox"/> No.							
<input type="checkbox"/> Yes, the name of the U.S. Government agency and the Government contract member are: _____							

Respectfully submitted,
Edwin Thorne, III


Date:



Franklyn C. Weiss, Reg. No. 23,141
Carr & Ferrell LLP
2225 East Bayshore Road, Suite 200
Palo Alto, CA 94303
Tel.: (650) 812-3400
Fax: (650) 812-3444

Send To: Box Provisional Application
Assistant Commissioner for Patents
Washington, D.C. 20231

 Additional inventors are being named on separately numbered sheets attached hereto.

APPENDIX A
HYDRODYNAMIC THROWING DISC

Edwin Thorne, III

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Application Serial No. 60/150,755, filed on August 26, 1999, entitled "UNDERWATER FLYING DISC," which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0002] The present invention relates to throwing discs for recreational use, and more specifically to a hydrodynamic throwing disc for use in a swimming pool, lake, or the ocean.

2. Description of Related Art

[0003] There are many toys and recreational devices on the market for use in and around swimming pools and other bodies of water. One such toy is a tire inner tube that is inflated and used as a flotation device. Another is a floating ball, which is waterproof so it will not sink when used in water, such as a pool, lake, or the ocean. Such balls include the type used in water polo, for example. Still other toys or devices include the type that sink to the bottom of a pool and are retrieved by the user diving into the pool. Such toys and recreational objects are used to teach swimming and water safety to young persons, and can even be used to teach SCUBA divers the skill of underwater diving.

[0004] A well-known toy or recreational device used out of water is the flying saucer device. These are tossed from one user to another, using the aerodynamic aspects of the device to enable it to glide in the air from the thrower to the catcher. However, such flying saucer devices are difficult, if not impossible, to use under water.

APPENDIX A

SUMMARY OF THE INVENTION

[0005] The present invention relates to a gliding disc toy or device designed for use under water, such as in a pool or the ocean. The invention is a hydrodynamic disc which, in one embodiment, includes a central circular core of a solid construction with a predetermined diameter and height which tapers to an outer edge. The core includes a material to impart a predetermined buoyancy to the disc when used within several feet below the surface of the water. The circular core includes a softer flexible material along the edge and radially inward a short distance along the top and bottom surfaces to provide a gripping surface and safety protection to disc users. The disc may have either a neutral, a positive, or a negative buoyancy.

[0006] An alternate embodiment includes a central circular core of a hollow construction with a predetermined diameter and height having first and second surfaces which taper to the outer edge. The hollow core is partially or completely filled with water to control the buoyancy. Still another embodiment of the disc includes identical first and second sides each having a circular member with an inner section of a first diameter and an outer section extending from the first diameter to a second diameter. The inner section has a height much less than the second diameter of the outer section. The outer section includes radial tabs emanating radially outward. The inside surfaces of the first and second sides are positioned against each other to form a symmetrical body. Each side of the disc includes a material of a first stiffness and a second material formed over the radial tabs so that the second material extends beyond the peripheral edges of the first and second sides in a taper to a rounded peripheral edge of the disc.

APPENDIX A

DESCRIPTION OF THE DRAWINGS

[0007] The present invention may be better understood, and its numerous features and advantages made apparent to those skilled in the art by referencing the accompanying drawings. For ease of understanding and simplicity, common numbering of elements within the illustrations is employed where an element is the same in different drawings.

[0008] Figure 1 is a top plan view of an underwater flying disc incorporating the principles of the invention;

[0009] Figure 2 is an edge view of the disc of this invention;

[0010] Figure 3 is a sectional view taken in the direction of lines A-A of Figure 1;

[0011] Figure 4 is a sectional view of the edge of the disc, taken about portion B in Figure 3;

[0012] Figure 5 is a top plan view of a second embodiment of an underwater flying disc according to the invention;

[0013] Figure 6 is an edge view of the embodiment of Figure 5;

[0014] Figure 7 is a perspective view of the disc of Figure 5;

[0015] Figure 8 is a sectional view taken in the direction of lines A-A of Figure 5;

[0016] Figure 9 is a sectional view of the edge of the disc taken about portion B in Figure 8;

[0017] Figure 10 is a top plan view of part of a third embodiment of an underwater flying disc according to this invention;

[0018] Figure 11 is a bottom plan view of the part shown in Figure 10;

[0019] Figure 12 is an edge section view of the part shown in Figure 10;

[0020] Figure 13 is a perspective view of the identical parts of Figure 13 after being joined or mated;

[0021] Figure 14 is a top plan view of the two mated parts of Figure 13;

[0022] Figure 15 is an edge view of the flying disc of the third embodiment; and

[0023] Figure 17 is a sectional view taken in the direction of lines A-A of Figure 15.

APPENDIX A

DETAILED DESCRIPTION OF THE INVENTION

[0024] The following is a detailed description of illustrative embodiments of the present invention. As these embodiments of the present invention are described with reference to the aforementioned drawings, various modifications or adaptations of the methods and or specific structures described may become apparent to those skilled in the art. All such modifications, adaptations, or variations that rely upon the teachings of the present invention, and through which these teachings have advanced the art, are considered to be within the spirit and scope of the present invention. For example, the devices set forth herein have been characterized herein as recreational toys, but it is apparent that professional and training uses may also be found for these devices. Hence, these descriptions and drawings are not to be considered in a limiting sense as it is understood that the present invention is in no way limited to the embodiments illustrated.

[0025] The present invention provides a gliding disc toy or device for use under water with a throwing or a pushing motion. Most toys or devices used for recreational use under water are too light and they float, or are too heavy and they sink. Such toys or devices quickly lose the interest of users, as they have to be retrieved after every action. However, this invention was designed specifically to be used under water as if it were used out of water. The disc of the present invention has a generally symmetrical or neutral buoyancy to maintain it mostly level in the water. This requires additional design to ensure that the device does not sink or rise to the top appreciably before it has completed its desired action.

[0026] This invention provides a new way to play catch and other games under water. The shape and the materials are crafted to provide minimum drag; specifically, the top and bottom of the device are symmetrical to minimize drag-inducing lift effects. The solid core provides a rigidity necessary to allow

APPENDIX A

the disc to cut through the water. The soft outer edge provides a good grip on the device for effective and safe use in the water. The disc can also be used as a dive plane by the user holding it in front while swimming or to change direction while swimming under water.

[0027] Figure 1 is a top view of the underwater flying disc 100. The overall shape of disc 100 is circular and its size is about 12 inches or 300 mm in diameter. Circular grooves 102 on the surface of disc 100 provide a grip surface so that a user can maintain adequate control of the disc under water. Raised ridges could be used, but are generally not, as ridges cause more turbulence and drag. The weight of disc 100 is determined to allow the device to be near equilibrium while under water. That is, unless thrown or otherwise moved in the water, disc 100 will not rapidly sink to the bottom or float to the surface. This is advantageous in that as a user swims to the surface for more air, for example, disc 100 remains in the water generally near where the user left it. A heavier disc would travel further through the water and a denser disc would sink slowly when not in active use. Different variations of buoyancy of the device, however, could provide for a slightly heavier (negative buoyancy) unit for divers, and slightly lighter (positive buoyancy) unit for use by children, for example.

[0028] Figure 2 is an edge view of disc 100, showing it to be very flat with a large width to height ratio. The “top” surface 104 and “bottom” surface 106 of disc 100 are symmetrical and the disc is used indifferently with either surface 104 or 106 up or down; thus there is no real top or bottom. This allows the disc to move in the water without undesirable drag-inducing lift effects. The previously-mentioned flying saucer toys used in the air, and not in water, are generally flat and have a downward facing concave shape, which provides lift to more or less float the flying saucer toy upon the air. Such a shape would be detrimental and would seriously curtail movement of the flying saucer if such an article were attempted to be used under water. The symmetrical design and

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heavier weight of disc 100 of this invention allows for easy movement in the water upon being pushed, thrown or launched by a user.

[0029] Figure 3 shows a cross section of disc 100. The disc is made of a first central core material 108 of, for example, rigid polypropylene or its equivalent. The volume of the particular embodiment shown in Figure 3 is approximately 454 cubic centimeters. The overall diameter of disc 100 is about 12 inches (30 centimeters) and the center height is about ½ inch (1.2 centimeters). Surfaces 104 and 106 have a polished texture. Edge 110 of disc 100 is made of a softer material to provide a better gripping surface, and also for protection of the users, whose vision may not be as good under water as out of the water, in the event the disc is not seen and caught but rather strikes a user. This edge material is soft flexible polypropylene or its equivalent, and the volume of the material as used in this embodiment is about 127.15 cubic centimeters. A typical disc 100 twelve inches in diameter and ½ inch in height made of the aforementioned materials weighs about 630 grams. As with all the embodiments disclosed herein, other suitable materials may be used.

[0030] Figure 4 is an enlarged view of the portion B of disc 100 described in conjunction with Figure 3. The softer material 110 has protruding annular ridges 114 that mate and provide a snug fit with recessed annular grooves 116 in central core 108. Through-holes (not shown) in the edge of the central core, if provided, could, if desired, provide mechanical strength to the softer material.

[0031] In operation, a user would grip disc 100 with the thumb of his/her hand on one side (probably the upper surface) with the fingers on the other side (probably the lower surface). With disc 100 in the user's hand, the user would move the arm holding the disc in a backhand motion across his/her body and away from the body towards another user in the pool some six to ten feet or so away. As the user's hand passes in front of the user's body, the user relaxes his/

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her grip on disc 100 and the weight of the disc and its forward motion causes the disc to glide towards the other user. The hydrodynamic shape of disc 100 and its predetermined weight allows the disc to move smoothly in the water to the other user, who grabs the disc in his/her hand. This person will then launch disc 100 back to the other person in the same manner. Of course, users may find their own methods of launching the disc in the water, such as overhand or forehand, or pushed. Disc 100 is designed for underwater use, but may also be used to skim the surface of the water.

[0032] While the above embodiment has a solid disc core, a second embodiment includes a hollow core that is filled with water or air to adjust the buoyancy of the disc. This allows a lighter disc to be transported and allows for adjustments if the disc is used at different depths or in salt water. A simple valve system could be employed to achieve the desired buoyancy.

[0033] The second embodiment of this invention is shown in Figure 5 through Figure 9. Figure 5 shows underwater flying or gliding disc 200 to be similar to that described above in conjunction with Figure 1. Figure 5 shows that the overall dimension of disc 200 is also about 300 mm in diameter. Similar to the embodiment of Figure 1, there are circular depressions or grooves 202 on the surface 204 of disc 200, which allow the user to adequately grip and launch the disc under water. These circular depressions and grooves might be manufactured on one side only and thus the surface seen in Figure 5 would probably be used as the top side when it is tossed. However, it is possible that the embodiment shown in Figure 5 would have the circular ridges and depressions manufactured on the other side as well to allow for a symmetrical gliding disc. Such a symmetrical flying disc would then, of course, not have an inherent top or bottom.

[0034] Figure 5 also shows the crescent-shaped vent holes 230 which, in this embodiment, are open to a central section or cavity 232 of the underwater

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flying disc. While the embodiment shown in Figure 1 has a solid central core and a softer outer section, as seen in Figure 4, the embodiment shown in Figure 5 has the hollow central cavity 232 open via vent holes 230 to the outside. If, as set forth previously, the underwater flying disc is to be completely symmetrical, the opposite side of the disc could also have these vent holes on the matching surface. However, it should be understood that it is not necessary to have these holes on both sides, depending on the size of the holes and the use for which the holes are intended.

[0035] The holes 230 are provided in hollow central core 232 so that when the disc is first used, it would be submerged in the water to allow water to flow into the central core and force out any air that may be there. This provides for easier and cheaper manufacture, because it utilizes less material. It also allows for a lighter article which is useful for a user who has to carry the underwater disc; and, of course, for the manufacturer and seller who have a lighter article to ship and to handle in a store. When disc 200 is used under water, hollow central cavity 232 would quickly fill with water. The water provides additional weight to allow disc 200 to be adequately moved through the water by a user.

[0036] Figure 6 is a side view of underwater flying disc 200 seen in Figure 5. The thickness of disc 200 is about 11.5 mm which equals the ratio of the diameter to thickness as that embodiment discussed above. Figure 6 shows disc 200 top surface 204, bottom surface 206, and edge 210 which tapers gradually to a smooth rounded shape 212. Edge 212 and the grooves and depressions 202 allow for movement in the water while providing a gripping surface for the user. Figure 7 is a perspective view of the embodiment shown in Figure 5.

[0037] Figure 8 is a side section view of the embodiment shown in Figure 5, and shows central core 232 with the hollow center section to be filled with water. Edge 210 of disc 200, which is indicated by circle B in Figure 8, is detailed

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in Figure 9. Center section 208 is made of polypropylene, with a volume of about 454 cubic centimeters with a fine texture (if desired), or equivalent material. Figure 9 shows edge material 210 of disc 200, which is softer to prevent injuries and is made of soft polypropylene, or equivalent material, with a volume of about 127.15 cubic centimeters. A typical disc made of the aforementioned materials would weigh about 488 grams, or about 1 pound, 1.2 ounces, when empty. Similar to the embodiment shown in Figure 4, central core 208 has its own ridges 214 and/or depressions 216 so that when the over-molded material is molded onto the central core 208, there is an adequate gripping surface 202 and the structure makes a more solid and rigid unit.

[0038] The embodiments shown in Figures 1 through 4 provide for any solid central core with an overmolded edge as manufactured. The embodiment shown in Figure 5 through Figure 9 allows for hollow center section 232 with holes 230 to provide a generally neutral buoyancy in the water. The water in the central cavity provides the necessary added weight to the flying disc.

[0039] However, still another embodiment may be utilized such that the center section may be made out of two identical pieces which are joined together and then over-molded around the outer periphery of the disc to allow for a softer edge. Figure 10 shows a different embodiment of this invention which comprises two identical halves 302 which are snapped together with the outer edge tabs 304 being over-molded with the softer material. Figure 10 shows one surface of the underwater flying disc 300 with center hollow section 306 including vent holes 308 that allow cavity 306 to fill with water upon immersion. Around the edge of the center core are tabs 304, six of which are seen in Figure 10, each tab 304 occupying about one-twelfth (1/12) of the circumference of the outer edge. It is noted that indents 305a and 305b are indications to an assembler in manufacturing how to quickly line up the halves of the disk for plastic injection.

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[0040] Figure 11 shows the inside of the same half of disc 300 seen in Figure 10 with the six outer tabs 304. The cross members 310 in the inner surface of disc 300 are support ridges molded therein to help prevent disc 300 from flexing, and to add strength and stability to the half shown in Figure 11. The cross members 310 end in the center of the disc at a curved portion 322 for each cross member. The curved portions define a circle with four openings 318 which allow for rapid ingress of water upon initial submersion into the water, and rapid egress of the water when taken out of the water. The cross members also provide for a water stop to keep the water from excessive movement inside the disc chamber when the disc is thrown or tossed. Such water movement can slow the rotation of the disc and cause drag.

[0041] Also seen in Figure 11 is a boss 312 and pin 314 arrangement. Pin 314 provides the male portion that would be snapped into place on a complementary boss 312, or female portion, on the other half of the disc to which it is mated. Pin 314 is shown triangular in shape for easy manufacture and assembly; but could be any shape to accomplish this end result.

[0042] Figure 12 is a side view of the half shown in Figures 10 and 11 before two of them are snapped together.

[0043] To make a completed flying disc requires two of the same halves of flying disc 300 shown in Figures 10 to 12. Once the halves of disc 300 are manufactured, the inside surface of the half as depicted in Figure 11 is placed against the inside surface of the other half, but rotated 180 degrees so that the protruding pin 314 on one inside surface would snap into the boss 312 on the other half, such that there are two bosses and two pin engagements which hold the disc together.

[0044] After the mating of one section or half of disc 300 with the other half of the disc is completed, the disc now looks like disc 300 seen in perspective in Figure 13. That is, tabs 304 of one half disc 302 occupy the spaces between

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tabs 304 of the other half disc 302a after being combined during the manufacturing cycle. Figure 14 is a top view of disc 300 after having both halves 302, 302a snapped together as previously described. The overall diameter of disc 300 is about 300 mm after assembly and the over-molding over the assembled tabs is applied. After plastic mold injection of each half, the halves are snapped together as set forth above and then placed in another injection molding machine wherein the edge material is molded over the tabs such that the end result is a flying disc similar to those seen in Figure 1, Figure 5, and Figure 7.

[0045] Figure 15 is an edge view of disc 300 of this invention and is about 11.5 mm in height after the two sections 302, 302a are mated to each other. Figure 16 is a side section view of flying disc 300 after the two halves 302, 302a have been snapped together, but prior to the over-molding of the edge sections with flexible material. Figure 16 shows how the tabs 304 overlap to provide for a strong gripping effect of the over-molding material once applied. Also shown in the relationship of pin 314 and boss 312 after mating of both identical halves.

[0046] The material for manufacturing the embodiments in Figure 13 through Figure 16 comprise the polypropylene material which occupies about 454 cubic centimeters of space with a fine or no external texture. The overmold material includes the edge material extending a certain distance radially from the edge includes polypropylene or softer material with a volume of about 127.15 cubic centimeters with a fine or no texture. Other suitable material may be used.

[0047] While the invention has been described with reference to specific embodiments, it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the true spirit and scope of the invention. In addition, modifications may be made without departing from the essential teachings of the invention.

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CLAIMS

What is claimed is:

1. A hydrodynamic disc comprising:
a solid circular core having a predetermined diameter across top and bottom surfaces and a predetermined height tapering to an outer edge thereof;

said core including a material which gives said disc a predetermined buoyancy when within several feet under the surface of water.
2. The disc of Claim 1 wherein said core includes a soft flexible material around the edge and extending a short distance radially inward along the top and bottom surfaces to provide a gripping surface to a disc user.
3. The disc of Claim 1 wherein said buoyancy is neutral in fresh water.
4. The hydrodynamic disc of Claim 1 wherein said buoyancy is either a positive or a negative buoyancy.
5. A gliding disc comprising:
a central circular core of a predetermined diameter and predetermined height having first and second surfaces, said core having a hollow construction and tapering to the outer edge thereof;

said core including a material such that it will be of equalizing neutral buoyancy when used in water within several feet of the water surface and when said hollow core is filled with a material to allow for said neutral buoyancy depending on the amount of said material used to fill said hollow core.
6. The disc of Claim 5 wherein said circular core includes an inner section and an outer section generally spaced from the center of said circular core, said

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inner section including a first core material, and said outer section including a second core material, said second core material being softer than said first core material.

7. The disc of Claim 6 wherein said inner section includes a hollow portion of a predetermined circular diameter in the center of said inner section, said hollow portion defining an open chamber in said inner section, and further including vent holes in the part of said inner section covering said open chamber.

8. The disc of Claim 7 wherein said vent holes appear on one surface of said disc.

9. The disc of Claim 8 wherein said vent holes appear on both surfaces of said disc.

10. The disc of Claim 7 wherein said outer section further includes circular grooves on the surface of said outer section to provide a gripping surface for said disc.

11. The disc of Claim 10 wherein said circular grooves appear on one surface of said disc.

12. The disc of Claim 10 wherein said circular grooves appear on both surfaces of said disc.

13. The disc of Claim 7 wherein the outer edge of said inner section includes protubing annular ridges to provide mechanical strength to the outer section when said outer section is formed on the outer edge of said inner section.

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14. A hydrodynamic throwing disc comprising:
a first side including a circular member having an inner section of a first diameter and an outer section from the first diameter to a second diameter, said inner section having a height dimension much less than the second diameter of said outer section, said outer section further including radial tabs emanating away in a radial direction from said outer section,

said first side further including an inside surface and an outside surface, said inside surface including a boss extending away from said inside surface of said first side, and a pin extending away from said inside surface at a point on said inside surface 180 degrees away from said boss and the same distance as said boss from the center point of said first side.

15. The hydrodynamic throwing disc of Claim 14 the further comprising:
a second side of said disc identical to said first side of said disc, such that the inside surfaces of said first and second sides are positioned against one another to form a symmetrical body, said pin of said first side being mated with the boss of said second side, and said pin of said second side being mated with the boss of said first side, the tabs of the first and second sides of said disc being positioned about the edges of said sides such that when the first and second sides are mated together, the tabs of said first side alternate in a circular dimension about the edges of said disc.

16. The hydrodynamic throwing disc of Claim 15, wherein each side of said disc includes support ridges along the inner surface of said disc sides to render rigid support to said first and second sides of said disc.

17. The hydrodynamic throwing disc of Claim 15, wherein said symmetrical body includes the hollow chamber defined by said inner sections of said first diameter, said hollow chamber being accessed by vent holes formed in each side of said disc.

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18. The hydrodynamic throwing disc of Claim 17 wherein each side of said disc includes a material of a first stiffness.
19. The hydrodynamic throwing disc of Claim 18, further including a second material formed over the radial tabs emanating from each side of said disc, said material extending the outside surfaces of said first and second sides in a tapered direction to a rounded circular edge defining said hydrodynamic throwing disc.
20. The hydrodynamic throwing disc of Claim 19, wherein said second material is of a second stiffness softer than said first stiffness.
21. The hydrodynamic throwing disc of Claim 20, said second material including circular grooves provide a gripping surface for said disc.
22. The hydrodynamic throwing disc of Claim 15 wherein said alternating tabs are coplanar.
23. The hydrodynamic throwing disc of Claim 17 wherein said support ridges are radially formed on said inner surface and ending in a generally open circle at the center of said disc side to allow water to easily ingress and egress from said hollow chamber.
24. The hydrodynamic throwing disc of Claim 17 wherein said support ridges are radially formed on said inner surface to prevent water from movement in said hollow chamber.
25. The hydrodynamic throwing disc of Claim 14 wherein said boss is cylindrically shaped and said pin is triangular shaped.

HYDRODYNAMIC THROWING DISC

Abstract

A gliding or flying hydrodynamic disc designed for recreational use under water. The disc is circular and about 12 inches or 300 mm in diameter, and about ½ inch or 1.198 centimeters high. Circular grooves on the surface of the disc provide a grip surface so that the user can adequately maintain control of the disc under water. The weight of the disc is determined to allow the device to generally maintain equilibrium while under water. The shape and the materials are crafted to provide minimum drag. The top and bottom of the device are symmetrical to minimize drag-inducing lift effects. A soft outer edge surface provides a good grip on the device and for safety in pool and dive use. The disc can also be used as a dive plane or to change course by holding it out in front while the user is swimming.

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Respectfully submitted,
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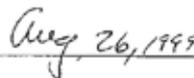
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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (b)(2) & 1.51(a)(2)(i).

Docket No.		PA1212		Type a plus sign (+) inside this box -->	+
INVENTOR(s) / APPLICANT(s)					
LAST NAME	FIRST NAME	MIDDLE INITIAL	RESIDENCE (CITY AND EITHER STATE OR FOREIGN COUNTRY)		
Thorne, III	Edwin		Palo Alto, California		
TITLE OF INVENTION (280 characters max)					
"UNDERWATER FLYING DISC"					
CORRESPONDENCE ADDRESS					
Franklyn C. Weiss Carr & Ferrell LLP 2225 East Bayshore Road, Suite 200 Palo Alto			Tel.: (650) 812-3473 Fax: (650) 812-3444		
STATE:	California	ZIP CODE:	94303	COUNTRY:	U.S.A.
ENCLOSED APPLICATION PARTS (check all that apply)					
<input checked="" type="checkbox"/> Specification	Number of Pages	[17]	<input type="checkbox"/> Small Entity Statement		
<input checked="" type="checkbox"/> Drawing(s)	Number of Sheets	[6]	<input checked="" type="checkbox"/> Other (specify): Express Mail Certificate, Return Postcard		
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The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
<input checked="" type="checkbox"/> No.					
<input type="checkbox"/> Yes, the name of the U.S. Government agency and the Government contract member are: _____					

Respectfully submitted,

Edwin Thorne, III



Date:

Aug 26, 1999

Franklyn C. Weiss, Reg. No. 23,041
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Washington, D.C. 20231

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APPENDIX A

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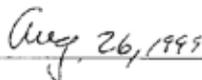
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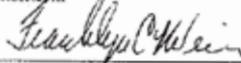
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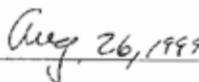
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Respectfully submitted,
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Date: Aug 26, 1995

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APPENDIX B



US006554674B1

(12) **United States Patent**
Thorne, III

(10) **Patent No.:** **US 6,554,674 B1**
(45) **Date of Patent:** **Apr. 29, 2002**

(54) **WATER-SKIMMING DISC**

(76) **Inventor:** **Edwin Thorne, III**, 410 Monroe Dr.,
Palo Alto, CA (US) 94306

(*) **Notice:** Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) **Appl. No.:** **09/573,435**

(22) **Filed:** **May 16, 2000**

Related U.S. Application Data

(60) **Provisional application No. 60/150,755**, filed on Aug. 26,
1999.

(51) **Int. Cl.⁷** **A63H 27/00**

(52) **U.S. Cl.** **446/46; 473/588**

(58) **Field of Search** **446/153, 46, 47,**
446/48; 473/588

(56) **References Cited**

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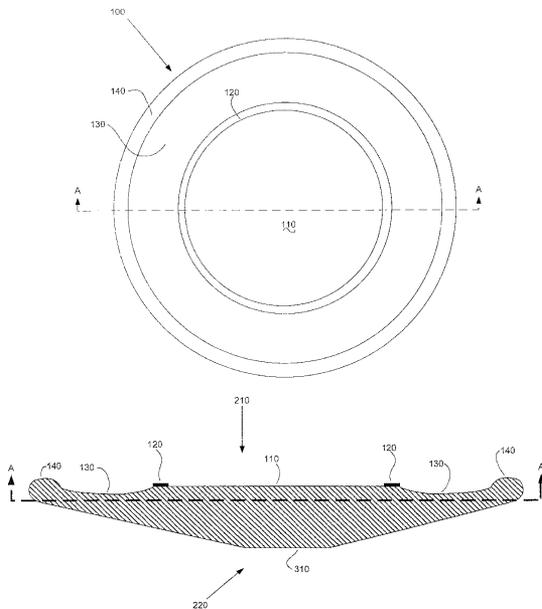
* cited by examiner

Primary Examiner—Derris H. Banks
Assistant Examiner—Urszula M Cegielnik
(74) *Attorney, Agent, or Firm*—Cart & Ferrell LLP

(57) **ABSTRACT**

A gliding or flying hydrodynamic disc designed for recreational use upon and across a surface of water is provided. The disc is circular with a peripheral circular trough on the top surface to provide a grip for a user. The bottom of the disc contains a circular flat section to provide minimum drag and maximum hydrodynamic performance. The outer rim of the disc is rounded and extends above the planar surface of the disc to provide increased aerodynamics to keep the disc on the surface of the water and improve gliding duration.

12 Claims, 3 Drawing Sheets



APPENDIX B

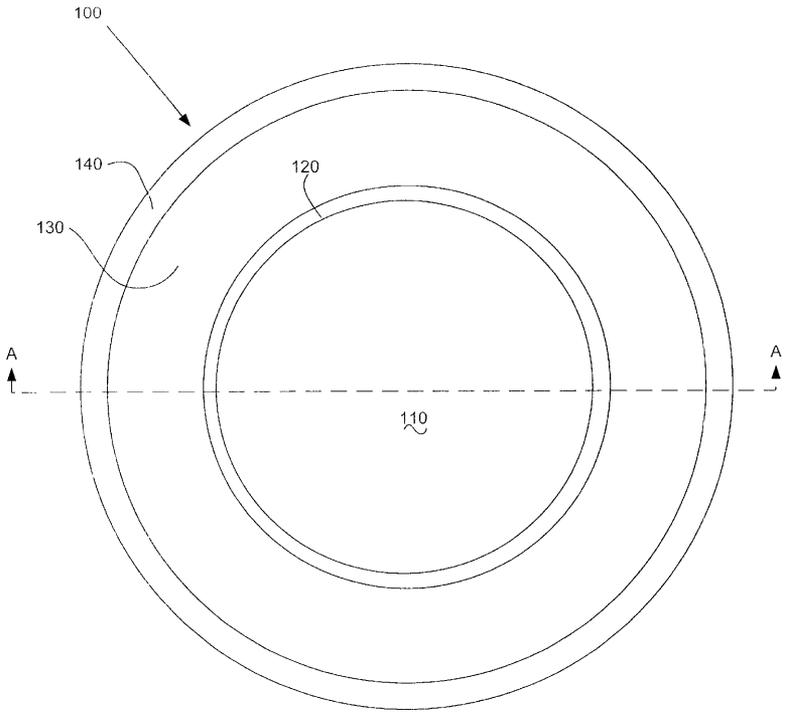


FIG. 1

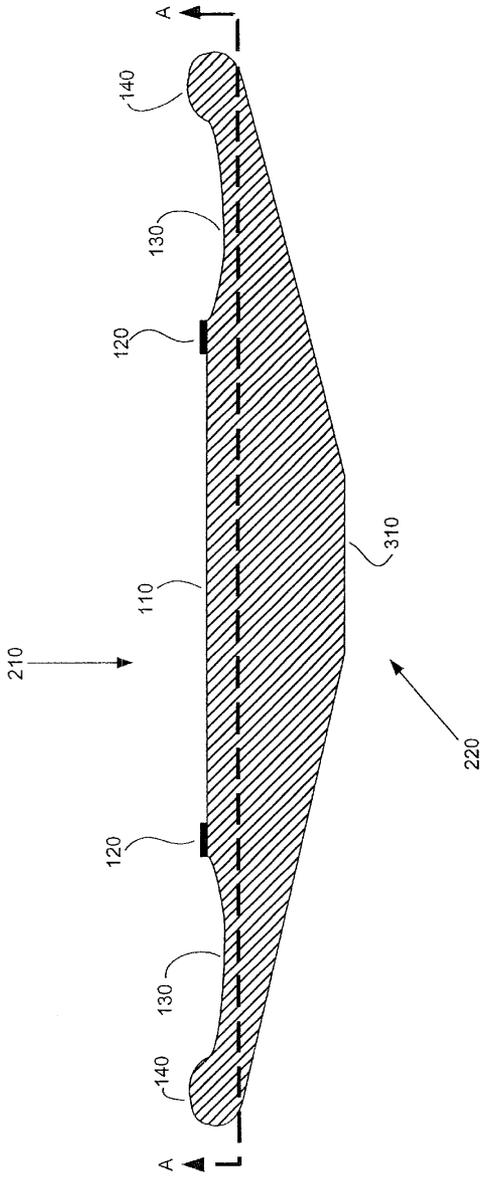


FIG. 2

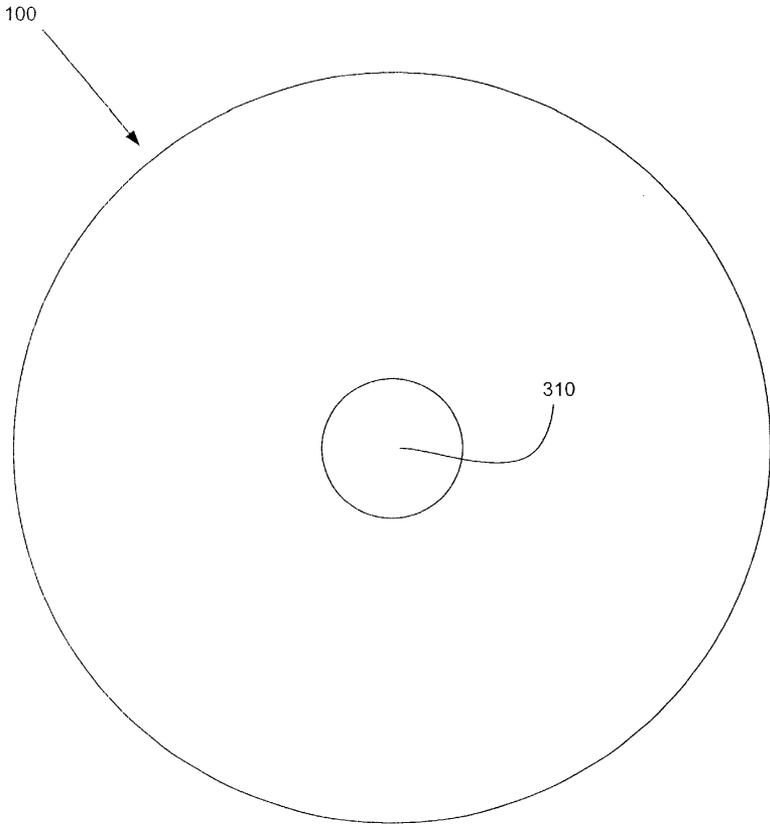


FIG. 3

1

WATER-SKIMMING DISC

CROSS-REFERENCES TO RELATED APPLICATIONS

This application claims the benefit of Provisional patent application Ser. No. 60/150,755, filed on Aug. 26, 1999, entitled Underwater Flying Disc, which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to throwing discs for recreational use, and more specifically to a water-skimming disc for use in a swimming pool, lake or ocean.

2. Description of Related Art

There are many toys and recreational devices on the market for use in and around swimming pools and other bodies of water. Recreational throwing discs for skimming or skipping across bodies of water have been known for many years, much like skipping flat stones across water. A well-known toy or recreational device used out of water is the flying saucer device. Such devices are tossed from one user to another, exploiting their aerodynamic aspects to enable them to glide from the thrower to the catcher through the air. However, due to their emphasis on aerodynamic design, such flying saucer devices are not adapted towards skimming or skipping over bodies of water. In addition, most flying saucer devices are manufactured with rigid material that can injure people or damage property upon impact.

U.S. Pat. No. 5,836,840 to Bustamante (1998) discloses a hydroplaning disc designed to skip or skim over water; however, the design of this disc is complex and expensive to manufacture.

Several other types of water skimming or skipping devices have been proposed. Examples are U.S. Pat. No. 4,979,922 to Clark (1990), 4,463,954 to Panse, et al. (1984), 4,395,046 to Cosmopolus (1983), and 4,151,997 to Glovak (1979). However, none of these can easily skip off a body of water. U.S. Pat. No. 5,679,082 to Hincke (1997) is heavy and likely expensive to manufacture.

SUMMARY OF THE INVENTION

It is the general object of the present invention to provide a lightweight disc that is easily gripped and designed to safely and efficiently skim or skip upon and across the surface of a body of water, such as a pool or the ocean, from one user to another. The invention is a hydrodynamic disc that, in one embodiment, includes a central circular core of a solid construction with a predetermined diameter and height that tapers to an outer edge. The circular core includes a softer flexible material along the edge and radially inward a short distance along the top and bottom surfaces to provide a gripping surface and safety protection to disc users.

The bottom surface includes a center bulge that tapers to a thinner outer edge and has a flat circular bottom, giving the disc efficient hydrodynamic qualities that allow it to easily skip across a body of water.

The present invention provides for a multitude of gripping means at any point along its top surface.

The simple design of the present invention provides enhanced safety to a user, hydrodynamic efficiency, is lightweight and inexpensive to manufacture.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention may be better understood, and its numerous features and advantages made apparent to those

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skilled in the art, by referencing the accompanying drawings. For ease of understanding and simplicity, common numbering of elements within the illustrations is employed where the same element is in different drawings.

FIG. 1 is a top plan view of a water-skimming disc incorporating the principles of the invention;

FIG. 2 is a cross-sectional view in the direction of lines A—A through the water-skimming disc of FIG. 1; and

FIG. 3 is a bottom plan view of the water-skimming disc of this invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 is a top view of a water-skimming disc 100 that has an overall shape of a generally circular disc. Disc 100 includes at its center a circular core section 110 surrounded concentrically by an annular overlap section 120, a cupped rim section 130, and an outside lip section 140. The overall diameter of disc 100 is preferably about 6½ inches, but could be in the range between 1½ inches and 12 inches to accommodate users of various ages and skills.

The circular core section 110 on the top of the water-skimming disc 100 is preferably about ¾ inches in diameter and has an exposed flat surface except for about ¼-inch along the outer periphery of the circular core section, which is covered by the annular overlap section 120.

The cupped rim 130 is a smoothly contoured trough with a textured surface that provides a grip to help a user to maintain adequate control when tossing the disc.

A raised surface of the outside lip section 140 further enhances the user's grip on the water-skimming disc 100. Most flying saucer or flying disc toys have rounded edges that slope downward. The upward sloping rounded edge of the outside lip section 140 enables the disc 100 to skip off the surface of a body of water, rather than to dive through the surface and come to an abrupt halt as would most other flying saucer or disc toys. The shape of the outside lip section 140 not only allows the water-skimming disc 100 to glide on the surface of the water, but the aerodynamics of the outside lip section 140 create lift that keeps the disc on the water's surface, rather than flying up.

FIG. 2 is a cross sectional view showing the water-skimming disc 100 to be generally disc-shaped with a large width-to-height ratio. A top surface 210 shows the upper contours of the disc 100, including the circular core section 110, the annular overlap section 120, the cupped rim section 130, and the outside lip section 140. FIG. 2 also shows the contoured radius of the cupped rim section 130 and the raised edge of the outside lip section 140. The water-skimming disc 100 has a bottom surface 220 that is substantially elliptical or conical. In the center of the bottom surface 220 is a skimming plane 310. The skimming plane 310 is preferably flat and circular, with a diameter of approximately one inch. Designing the bottom surface 220 with the substantially flat skimming plane 310 at its center gives the water-skimming disc 100 increased hydroplaning capabilities over that of purely elliptical or conical shaped discs. The disc 100 will therefore glide over the water surface faster and for longer distances. The entire bottom surface 220 is smooth to reduce friction.

FIG. 3 shows a bottom view of the water-skimming disc 100. The skimming plane 310 is preferably about 1¼ inches in diameter.

Referring again to FIG. 2, the thickness between the top of the circular core section 110 and the bottom of the

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skimming plane **310** (see FIG. 3) is preferably about $\frac{3}{4}$ inch or 18 mm. The disc is preferably a monolithic structure, with the material comprising the annular overlap section **120**, the cupped rim section **130**, the outside lip section **140** and the bottom surface **220** being contiguous. Alternate embodiments may have a rigid core and flexible outer edge for improved performance.

While the preferred embodiment of the water-skipping disc **100** has a solid core of polyurethane foam with a density of 0.3 (relative to water), other embodiments could include other suitable materials with a density in the range from 0.1 to 2.0. The water-skimming disc **100** can be made either more or less dense than water, allowing a wide range of weights, skipping characteristics, speeds and distances.

The optimal weight for the water-skimming disc **100** is 3 ounces; however, other embodiments may weigh as little as two ounces and as much as 6 ounces.

The water-skimming disc **100** is launched by hand, and will operate properly only with the top surface **210** facing up. This orientation also allows the hydrodynamic design of the bottom surface **220** and the skimming plane **310** to interact with the surface of a body of water (for example, a pool, a lake or the ocean) upon which a user throws the water-skimming disc **100**. The shape of top surface **210** allows the user to grip the water-skimming disc **100** preferably by placing a thumb inside the cupped rim **130** and placing the outside lip **140** between the thumb and forefinger, with the other fingers supporting the bottom of the water-skimming disc. With the water-skimming disc **100** in a user's hand, the user would move his or her arm holding the water-skimming disc in a backhand motion across his/her body, away from the body, and nearly parallel to the surface of the body of water towards another user who is either in, or on the other side of, the body of water. As the user's hand passes in front of the user's body, the user releases his/her grip on the water-skimming disc and the weight of the disc and its forward motion causes the disc to glide towards the other user, skipping off the surface of the water one or more times like a flat rock. The hydrodynamic shape of the bottom surface **220** of disc **100** allows the disc to skip smoothly across the water to the other user, who can then catch the disc in his/her hand. The catcher can then launch the water-skimming disc **100** back to the thrower in the same manner. Users may find their own methods of launching the water-skimming disc **100** across water, resulting in any number of skips and in a variety of speeds and directions.

As preferred embodiments of the present invention are described above with reference to the aforementioned drawings, various modifications or adaptations of the methods and or specific structures described may become apparent to those skilled in the art. All such modifications, adaptations, or variations that rely upon the teachings of the present invention, and through which these teachings have advanced the art, are considered to be within the spirit and scope of the present invention. Hence, these descriptions and drawings are not considered in a limiting sense as is understood that the present invention is in no way limited to the embodiments illustrated.

What is claimed is:

1. A water skimming disc comprising:

a solid central core, the central core being substantially circular,

a top surface, incorporated with and partially overlapping the central core, the top surface being substantially circular and further including:

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an annular channel at its radial periphery, and an annular outer rim;

a bottom surface, joined to the top surface at the annular outer rim, the bottom surface being substantially circular with a substantially ellipsoidal cross-section; and

a skimming plane disposed on the bottom surface, the skimming plane being flat and substantially circular, with a diameter less than that of the bottom surface and positioned concentric to the bottom surface.

2. The water skimming disc of claim 1 wherein the central core is made of a material that is buoyant in water.

3. The water skimming disc of claim 1 further comprising a gripping means disposed along the annular channel of the top surface of the disc.

4. The water skimming disc of claim 1 wherein the central core, the top surface and the bottom surface are integrated together and are formed from a single piece of material.

5. A water skimming disc comprising:

a central core, the central core being substantially circular; a top surface, incorporated with and partially overlapping the central core, the top surface being substantially circular and further including:

an annular channel at its radial periphery, and

an annular outer rim having an outside edge that is rounded and upward sloping to provide lift to the disc, the rim extending above the planar surface of the central core;

a bottom surface, joined to the top surface at the annular outer rim, the bottom surface being substantially circular with a substantially ellipsoidal cross-section; and

a skimming plane disposed on the bottom surface, the skimming plane being flat and substantially circular, with a diameter less than that of the bottom surface and positioned concentric to the bottom surface.

6. The water skimming disc of claim 5 wherein the central core is made of a material that is buoyant in water.

7. The water skimming disc of claim 5 further comprising a gripping means disposed along the annular channel of the top surface of the disc.

8. The water skimming disc of claim 5 wherein the central core, the top surface and the bottom surface are integrated together and are formed from a single piece of material.

9. A water skimming disc comprising:

a solid, substantially circular central core;

a top surface, incorporated with and partially overlapping the central core, the top surface being substantially circular and further including

an annular channel at its radial periphery, and

an annular outer rim; and

a bottom surface, joined to the top surface at the annular outer rim, the bottom surface being substantially elliptical and including a flat circular bottom center portion with a diameter less than that of the bottom surface and positioned concentric to the bottom surface.

10. A water skimming disc comprising:

a solid, substantially circular central core;

a top surface, incorporated with and partially overlapping the central core, the top surface being substantially circular and further including

an annular channel at its radial periphery, and

an annular outer rim having an edge with a rounded, upward sloping, convex shape to improve grip and enhance water-skimming functionality; and

a bottom surface, joined to the top surface at the annular outer rim, the bottom surface being substantially elliptical.

APPENDIX B

US 6,554,674 B1

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tical and including a flat circular bottom center portion with a diameter less than that of the bottom surface and positioned concentric to the bottom surface.

11. A water skimming disc comprising:

a solid substantially circular central core;

a top surface including

an annular channel at its radial periphery, and an annular outer rim having an edge with a rounded convex shape, the edge being upward sloping; and

a bottom surface being substantially elliptical and convex and having an elliptical portion joined to the annular outer rim of the top surface with a junction having a surface of a convex shape.

12. A water skimming disc comprising:

a solid central core, the central core being substantially circular and having a flat surface on a top side;

6

a top surface, incorporated with the solid central core, the top surface being substantially circular and further including

the flat surface of the solid central core;

an annular channel at its radial periphery, and

an annular outer rim having an edge with a rounded convex shape, the edge is upward sloping, the surface of the outer rim is textured to provide a grip; and

a bottom surface, joined to the top surface at the annular outer rim, the bottom surface being substantially elliptical and convex and including an elliptical portion and a flat circular bottom center portion with a diameter less than that of the bottom surface and positioned concentric to the bottom surface, the elliptical portion is joined to the outer rim with a junction having a surface of a convex shape.

* * * * *

Filing Paper Checklist

- Return postcard
- Express mail label
- Provisional application cover sheet
- Fee transmittal
- Check for filing fee OR credit card payment form
- Specification
- Drawings
- Assignment (optional)

APPENDIX D

PTO/SB/16 (03-13)

Approved for use through 01/31/2014. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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PROVISIONAL APPLICATION FOR PATENT COVER SHEET – Page 1 of 2

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. _____

INVENTOR(S)		
Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
Additional inventors are being named on the _____ separately numbered sheets attached hereto.		
TITLE OF THE INVENTION (500 characters max):		
Direct all correspondence to: CORRESPONDENCE ADDRESS		
<input type="checkbox"/> The address corresponding to Customer Number: 		
OR		
<input type="checkbox"/> Firm or Individual Name		
Address		
City	State	Zip
Country	Telephone	Email
ENCLOSED APPLICATION PARTS (check all that apply)		
<input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76.		
<input type="checkbox"/> Drawing(s) <i>Number of Sheets</i> _____		
<input type="checkbox"/> Specification (e.g., description of the invention) <i>Number of Pages</i> _____		
<input type="checkbox"/> CD(s), Number of CDs _____		
<input type="checkbox"/> Other (specify) _____		
Fees Due: Filing Fee of \$260 (\$130 for small entity) (\$65 for micro entity). If the specification and drawings exceed 100 sheets of paper, an application size fee is also due, which is \$400 (\$200 for small entity) (\$100 for micro entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).		
METHOD OF PAYMENT OF THE FILING FEE AND APPLICATION SIZE FEE FOR THIS PROVISIONAL APPLICATION FOR PATENT		
<input type="checkbox"/> Applicant asserts small entity status. See 37 CFR 1.27.		
<input type="checkbox"/> Applicant certifies micro entity status. See 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent. 		
<input type="checkbox"/> A check or money order made payable to the <i>Director of the United States Patent and Trademark Office</i> is enclosed to cover the filing fee and application size fee (if applicable). TOTAL FEE AMOUNT (\$)		
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.		
<input type="checkbox"/> The Director is hereby authorized to charge the filing fee and application size fee (if applicable) or credit any overpayment to Deposit Account Number: _____		

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 10 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

APPENDIX D

PTO/58/16 (03-13)

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PROVISIONAL APPLICATION FOR PATENT COVER SHEET – Page 2 of 2

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

No.

Yes, the invention was made by an agency of the U.S. Government. The U.S. Government agency name is: _____

Yes, the invention was made under a contract with an agency of the U.S. Government. The name of the U.S. Government agency and Government contract number are: _____

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

SIGNATURE _____ DATE _____

TYPED OR PRINTED NAME _____ REGISTRATION NO. _____
(if appropriate)

TELEPHONE _____ DOCKET NUMBER _____

APPENDIX F

Form PTO-1595 (Rev. 6-12)
OMB No. 0651-0027 (exp. 04/30/2018)

U.S. DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

RECORDATION FORM COVER SHEET PATENTS ONLY	
To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.	
1. Name of conveying party(ies) Additional name(s) of conveying party(ies) attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	2. Name and address of receiving party(ies) Name: _____ Internal Address: _____ _____ Street Address: _____ _____ City: _____ State: _____ Country: _____ Zip: _____ Additional name(s) & address(es) attached? <input type="checkbox"/> Yes <input type="checkbox"/> No
3. Nature of conveyance/Execution Date(s): Execution Date(s) _____ <input type="checkbox"/> Assignment <input type="checkbox"/> Merger <input type="checkbox"/> Security Agreement <input type="checkbox"/> Change of Name <input type="checkbox"/> Joint Research Agreement <input type="checkbox"/> Government Interest Assignment <input type="checkbox"/> Executive Order 9424, Confirmatory License <input type="checkbox"/> Other _____	4. Application or patent number(s): <input type="checkbox"/> This document serves as an Oath/Declaration (37 CFR 1.63). A. Patent Application No.(s) _____ B. Patent No.(s) _____ Additional numbers attached? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Name and address to whom correspondence concerning document should be mailed: Name: _____ Internal Address: _____ _____ Street Address: _____ _____ City: _____ State: _____ Zip: _____ Phone Number: _____ Docket Number: _____ Email Address: _____	6. Total number of applications and patents involved: _____ 7. Total fee (37 CFR 1.21(h) & 3.41) \$ _____ <input type="checkbox"/> Authorized to be charged to deposit account <input type="checkbox"/> Enclosed <input type="checkbox"/> None required (government interest not affecting title)
9. Signature: _____ <div style="display: flex; justify-content: space-between; width: 100%;"> Signature Date </div> _____ Name of Person Signing	8. Payment Information Deposit Account Number _____ Authorized User Name _____ Total number of pages including cover sheet, attachments, and documents: <input style="width: 50px;" type="text"/>
Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to: Mail Stop Assignment Recordation Services, Director of the USPTO, P.O. Box 1450, Alexandria, V.A. 22313-1450	

APPENDIX F

Guidelines for Completing Patents Cover Sheets (PTO-1595)

Cover Sheet information must be submitted with each document to be recorded. If the document to be recorded concerns both patents and trademarks separate patent and trademark cover sheets, including any attached pages for continuing information, must accompany the document. All pages of the cover sheet should be numbered consecutively, for example, if both a patent and trademark cover sheet is used, and information is continued on one additional page for both patents and trademarks, the pages of the cover sheet would be numbered from 1 to 4.

Item 1. Name of Conveying Party(ies).

Enter the full name of the party(ies) conveying the interest. If there is insufficient space, enter a check mark in the "Yes" box to indicate that additional information is attached. The name of the additional conveying party(ies) should be placed on an attached page clearly identified as a continuation of the information Item 1. Enter a check mark in the "No" box, if no information is contained on an attached page. If the document to be recorded is a joint research agreement, enter the name(s) of the party(ies) other than the owner of the patent or patent application as the conveying party(ies).

Item 2. Name and Address of Receiving Party(ies).

Enter the name and full address of the first party receiving the interest. If there is more than one party receiving the interest, enter a check mark in the "Yes" box to indicate that additional information is attached. Enter a check mark in the "No" box, if no information is contained on an attached page. If the document to be recorded is a joint research agreement, enter the name(s) of the patent or patent application owner(s) as the receiving party.

Item 3. Nature of Conveyance/Execution Date(s).

Enter the execution date(s) of the document. It is preferable to use the name of the month, or an abbreviation of that name, in order that confusion over dates is minimized. Place a check mark in the appropriate box describing the nature of the conveying document. If the "Other" box is checked, specify the nature of the conveyance.

Item 4. Application Number(s) or Patent Number(s).

Indicate the application number(s), and/or patent number(s) against which the document is to be recorded. National application numbers must include both the series code and a six-digit number (e.g., 07/123,456), and international application numbers must be complete (e.g., PCT/US91/12345).

Enter a check mark in the appropriate box: "Yes" or "No" if additional numbers appear on attached pages. Be sure to identify numbers included on attached pages as the continuation of Item 4. Also enter a check mark if this Assignment is being filed as an Oath/Declaration (37 CFR 1.63).

Item 5. Name and Address of Party to whom correspondence concerning the document should be mailed.

Enter the name and full address of the party to whom correspondence is to be mailed.

Item 6. Total Applications and Patents Involved.

Enter the total number of applications and patents identified for recordation. Be sure to include all applications and patents identified on the cover sheet and on additional pages.

Block 7. Total Fee Enclosed.

Enter the total fee enclosed or authorized to be charged. A fee is required for each application and patent against which the document is recorded.

Item 8. Payment Information.

Enter the deposit account number and authorized user name to authorize charges.

Item 9. Signature.

Enter the name of the person submitting the document. The submitter must sign and date the cover sheet. Enter the total number of pages including the cover sheet, attachments, and document.

This collection of information is required by 35 USC 261 and 262 and 15 USC 1057 and 1060. The information is used by the public to submit (and by the USPTO to process) patent and trademark assignment requests. After the USPTO records the information, the records for patent and trademarks, assignments, and other associated documents can be inspected by the public. To view documents recorded under secrecy orders or documents recorded due to the interest of the federal government, a written authorization must be submitted. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the form to the USPTO. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Manager of the Assignment Division, USPTO, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Assignment Recordation Services, Director of the USPTO, P.O. Box 1450, Alexandria, VA 22313-1450.

APPENDIX G

Sample Mutual Non-Disclosure Agreement

The AGREEMENT herein, dated as of _____, 20__ is between _____ and _____, (both referred to herein collectively as “the parties”).

WHEREAS the parties desire that disclosure of information be exchanged in support of discussing their respective business ideas, services and products.

WHEREAS for said good and mutual consideration, the parties desire to enter into an agreement governing the disclosure between themselves and to any third parties of said information;

NOW THEREFORE the parties agree to hold all Proprietary Restricted Information (as defined herein) furnished to them under this Agreement in complete confidence and not in any way to disclose such information to any other party for any purpose, or to reproduce such information. These restrictions shall apply to any Proprietary Restricted Information exchanged by the parties during any discussions, negotiations or correspondence and to any Proprietary Restricted Information contained in any memoranda, papers or documents forwarded to either of the parties under this Agreement or under any contract between the parties. In carrying out the provisions of this Agreement, the following terms shall apply:

1. The term “Proprietary Restricted Information” shall include the following;
 - A. All information and data relating to the current discussions (“the project”), as well as samples, specimens, patents applications, and other proprietary information relating to the development, testing, manufacture, or application of any such devices or systems (including but not limited to system concepts, architectures, source documents and programmatic documents), and
 - B. All marketing plans, studies, and information relating to the project effort. Proprietary Restricted Information shall not include the following:
 - (1) information that is already public or becomes public without fault of the receiving party;
 - (2) information that, as of the time of receipt by the receiving party, is already known to or in the possession of the receiving party;
 - (3) information that, at any time, is received in good faith by the receiving party from a third party that was lawfully in possession of the information and had the right to disclose the same;

APPENDIX G

(4) information that is disclosed to third parties by the disclosing party on a non-confidential basis;

(5) information that the parties mutually agree in writing to release from the terms of the Agreement;

(6) information that is independently developed by or on behalf of the receiving party without benefit of the Proprietary Restricted Information.

2. If any part of the Proprietary Restricted Information has been or hereafter shall be disclosed in a United States patent issued to the party furnishing the information hereunder, after the issuance of said patent, the limitations on such information as is disclosed in the patent shall be only that afforded by the United States Patent Laws.

3. Each party shall use the same reasonable efforts to protect Proprietary Restricted Information as are used to protect its own proprietary information. Disclosures of such information shall be restricted to those individuals who are directly participating in the review of the information and have a need to know such information.

4. Neither the execution and delivery of this Agreement, nor the furnishing of any Proprietary Restricted Information by the parties hereunder shall be construed as granting to any other party to this Agreement, either expressly, by implication, estoppel, or otherwise, a license under any invention, whether or not patented, hereafter owned or controlled by the party furnishing same.

5. Each party shall return to the disclosing party the original and all copies of written information furnished to the other.

6. Each party shall not make copies of such information other than for purposes of assisting the parties in the development of the proposal.

7. The obligations and provisions of this Agreement shall continue for a period of two (2) years from the date of this Agreement, and may be extended from this date by mutual written agreement of the parties hereto.

8. Each party will designate one or more individuals within its organization as the only point(s) for receiving Proprietary Restricted Information from the other party pursuant to this Agreement.

9. Either party can disclose confidential information it has received if it is required to do so by a governmental agency or a court of law having proper jurisdiction. If such a requirement is made, the party required to make such a disclosure shall give the other party reasonable notice to enable the other party to try to protect the confidentiality of the information.

APPENDIX G

IN WITNESS WHEREOF, the parties hereto have, through duly authorized representatives, executed this Agreement effective as of the day, month and year set forth above.

Company Name

Company Name

BY: _____
Signature

BY: _____
Signature

NAME: _____
Printed

NAME: _____
Printed

TITLE: _____

TITLE: _____

DATE: _____

DATE: _____

APPENDIX H

Sample Product Sell Letter Request Meeting

John S. Ferrell
120 Constitution Drive
Menlo Park, CA 94025

Phone: (650) 812-3408
Email: jferrell@carrferrell.com

Via FEDEX

Mr. William Doe
President & CEO
Outdoor Pool Accessories, Inc.
555 Pat Booker Road
Universal City, Texas 78148

January 1, 2017

Dear Mr. Doe:

Please find enclosed with this letter several photographs and a short DVD video clip of my new product design that I am calling POOL PARADISE™. This floating pool lounge is lightweight, self-inflating, constructed of durable polypropylene, and has an array of storage and comfort features including an ice chest, four cup holders, an adjustable head rest, and a battery operated body mister.

I am interested in finding an exclusive licensee to manufacture and distribute this new patent-pending, invention, and believe that the POOL PARADISE product would be a perfect and profitable fit with Outdoor Pool's unique catalog of related goods. If you have an interest in learning more about my product, I would be happy to visit Outdoor Pool in Universal City and provide a demonstration of the prototype.

I will follow up with you later this week to confirm your availability for a meeting. In the meantime, please let me know if I can assist by providing additional information.

Sincerely,

John S. Ferrell

Encl. photographs and DVD

APPENDIX I

Sample Product Sell Letter Trade Show Meeting

John S. Ferrell
120 Constitution Drive
Menlo Park, CA 94025

Phone: (650) 812-3408
Email: jferrell@carrferrell.com

Via FEDEX

Mr. William Doe
President & CEO
Outdoor Pool Accessories, Inc.
555 Pat Booker Road
Universal City, Texas 78148

January 1, 2017

Dear Mr. Doe:

Please find enclosed with this letter several photographs and a short DVD video clip of my new product design that I am calling POOL PARADISE™. This floating pool lounger is lightweight, self-inflating, constructed of durable polypropylene, and has an array of storage and comfort features including an ice chest, four cup holders, an adjustable head rest, and a battery operated body mister.

I am interested in finding an exclusive licensee to manufacture and distribute this new patent-pending, invention, and believe that the POOL PARADISE product would be a perfect and profitable fit with Outdoor Pool's unique catalog of related goods. From your company's website, I note that Outdoor Pool will be exhibiting at the Pool and Boat Show in China Lake, California next month. If you will be attending the show, this would be great opportunity for me to meet with you and to demonstrate my prototype.

I will follow up with you later this week to confirm your availability for a meeting. In the meantime, please let me know if I can assist by providing additional information.

Sincerely,

John S. Ferrell

Encl. photographs and DVD

APPENDIX J

Sample License Letter

John S. Ferrell
120 Constitution Drive
Menlo Park, CA 94025

Phone: (650) 812-3408
Email: jferrell@carrferrell.com

Via FEDEX

Mr. William Doe
President & CEO
Outdoor Pool Accessories, Inc.
555 Pat Booker Road
Universal City, Texas 78148

January 1, 2017

Dear Mr. Doe:

I am a product designer specializing in outdoor furniture and pool accessories. You may be interested to know that I have filed a United States patent application entitled, "A Self-Inflating Floating Pool Lounger With Body Mister." A copy of the filed patent specification with one exemplary claim is attached with this letter. My reason for writing is that I am interested in finding an exclusive licensee for this invention.

In reviewing your product catalog I note this patent application might be of great interest to you, especially since several of your company's products and those of your competitors appear to be very similar to the invention that I am patenting. Outdoor Products' FLOATING ISLAND and LOUNGE PARTY floating lounge chairs contain many of the features claimed in this patent application. Please understand that I am not suggesting that Outdoor Pool currently would be infringing my patent application if now issued, only that this application might provide Outdoor Pool with a significant competitive product advantage when issuance does occur.

If you would like to further discuss licensing this patent application on an exclusive basis, please contact me by fax or mail within 10 days. If I have not heard from you within this period, I will assume that there is no immediate interest by Outdoor Pool in this opportunity, and I will approach other manufacturers in this market for possible licensing of my application.

Sincerely,

John S. Ferrell

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