Patentes: Lo que todo inventor debe saber

Presentado por Dra. Gladys E. López
PTRC representative
Biblioteca General
Universidad de Puerto Rico
Recinto Universitario de Mayagüez
Ciclo de Inovación y Emprendimiento
21 de septiembre de 2021

- **La información que se presenta tiene propósitos educativos.**
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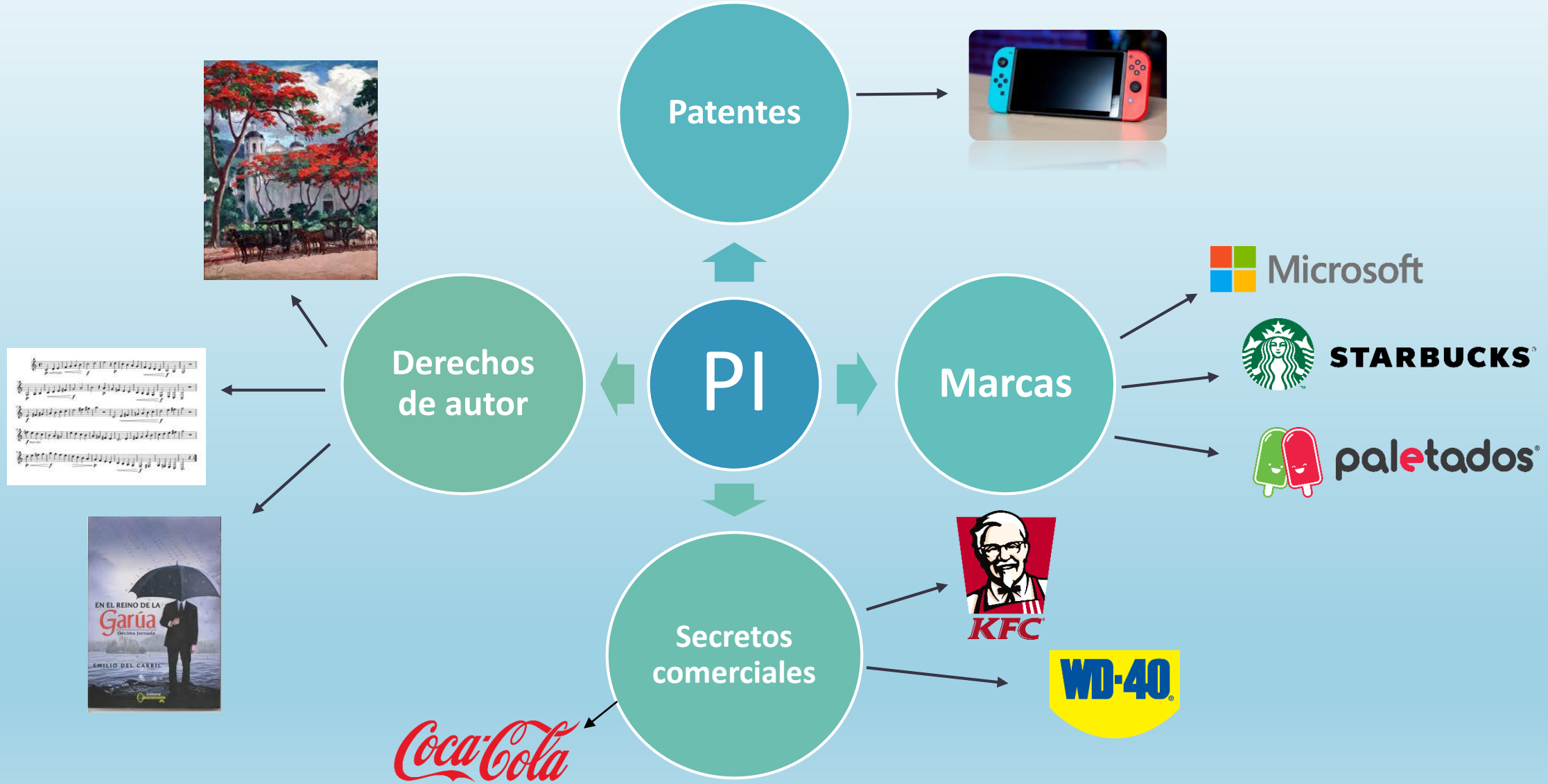
Propiedad Intelectual

Obras de arte
Afiches
Libros
Poemas
Canciones
Diseño de páginas web
Fotografías
Invenciones
Productos
Recetas
Sonidos

Diferentes tipos de propiedad intelectual



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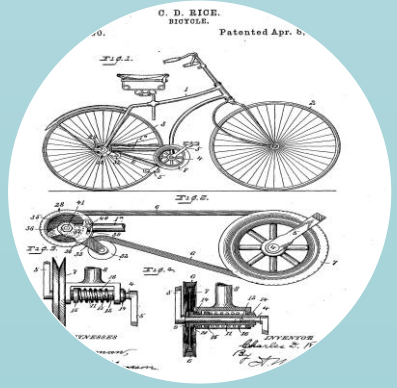


Patentes

(Titulo 35, United States Code)

Marcas

(Titulo 37, United States Code)

pr.gov

Ley Núm. 169-2009

Secretos Comerciales

(Título 18, United State Code)

pr.gov

Ley 80 (2011)

Derechos de autor

(Título 17, United States Code)

pr.gov

Ley 55 (2012)

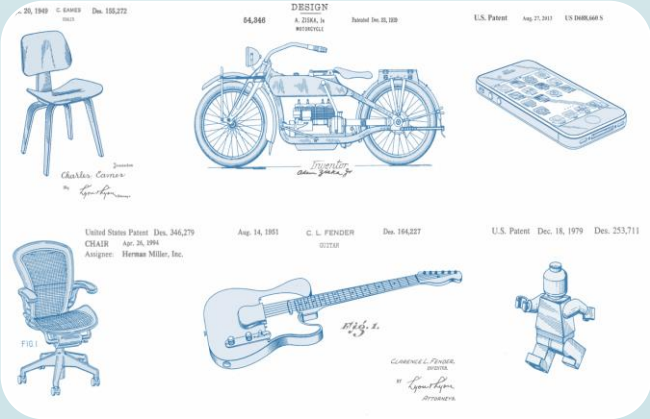
Tipos de propiedad intelectual protegidas por ley

PATENTES

Patentes

- Una patente es una protección a la propiedad intelectual, que es otorgada por el gobierno federal a un inventor para que de forma exclusiva tenga el derecho de manufacturar, mercadear, vender, usar o licenciar su invento.
- Para ser patentable, el invento debe cumplir con ciertos requisitos mínimos: innovador, nuevo, único, novedoso, nunca antes visto, funcional, útil, que supla una necesidad o solucione un problema, y que no exista naturalmente en el ambiente.
- La agencia encargada de procesar y otorgar patentes es la Oficina de Patentes y Marcas de los Estados Unidos, mejor conocida por USPTO.

Tres tipos de patentes



Patentes de utilidad

Patentes de diseño

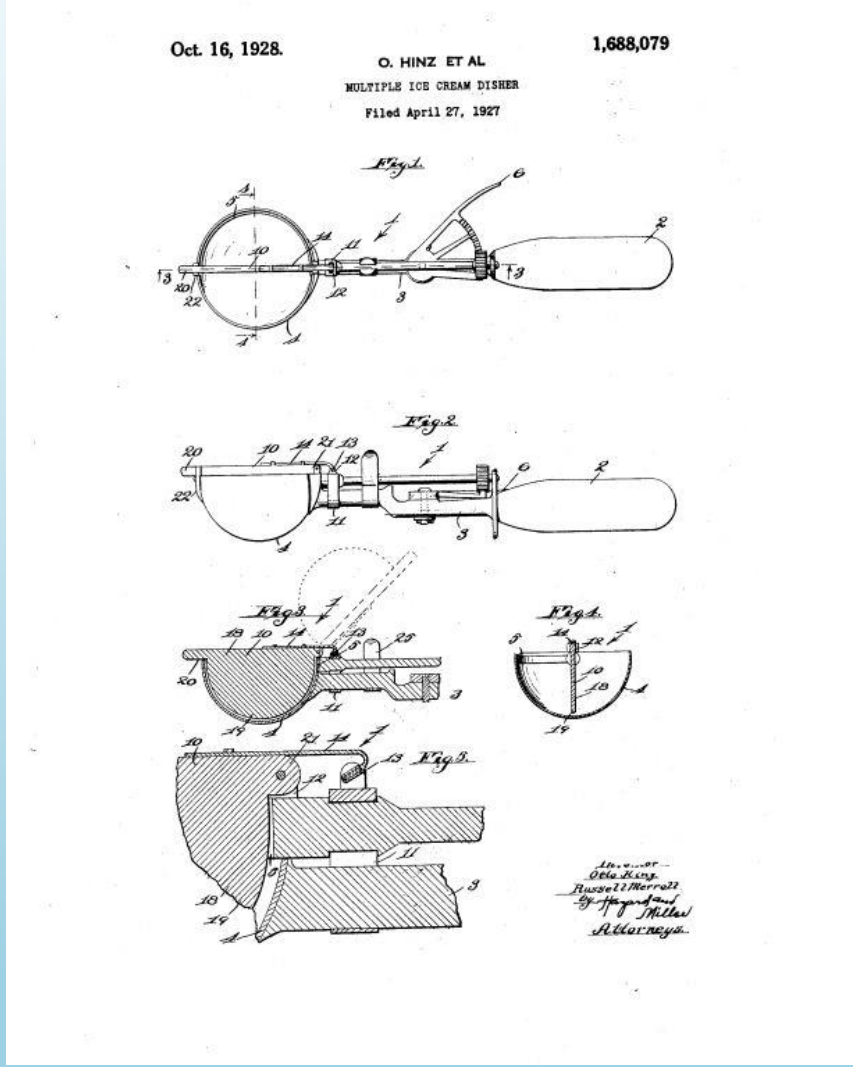
Patentes de plantas

Patentes de Utilidad (“Utility Patents”)

- Se caracterizan por ser invenciones de máquinas, aparatos, artefactos, instrumentos, herramientas, enseres, productos, artículos de manufactura, métodos, procesos internos, programados de computadoras, composición de materia, formulaciones químicas o farmacólogas (medicinas) y otros.
- Lo importante es qué hace el invento y cómo lo hace.
- La protección es válida por un periodo de 20 años y no se puede renovar o extender.

Ejemplos de patentes de **utilidad:**

- Silla de ruedas, motor que funcione con energía solar, un dispensador de jabones

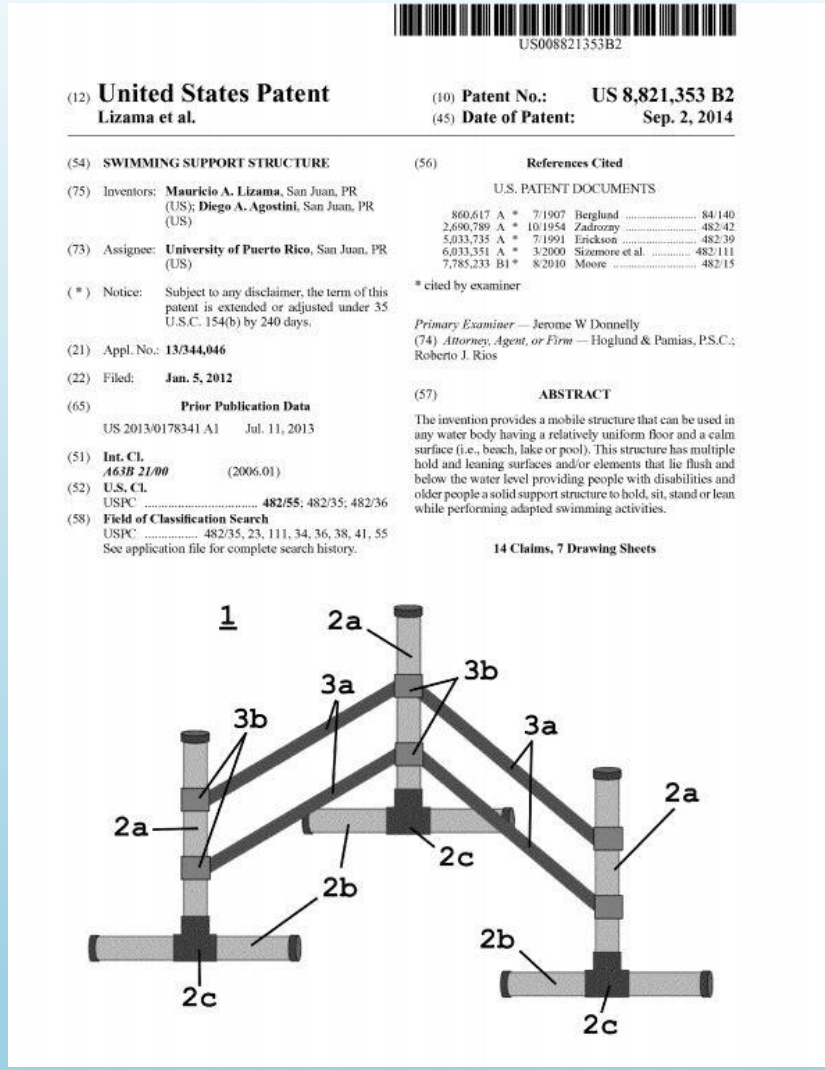


Oct. 16, 1928. 1,688,079

O. HINZ ET AL.

MULTIPLE ICE CREAM DISHER

Filed April 27, 1927



US008821353B2

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

(10) **Patent No.: US 8,821,353 B2**
(45) **Date of Patent: Sep. 2, 2014**

(54) **SWIMMING SUPPORT STRUCTURE**

(75) Inventors: **Mauricio A. Lizama**, San Juan, PR (US); **Diego A. Agostini**, San Juan, PR (US)

(73) Assignee: **University of Puerto Rico**, San Juan, PR (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 240 days.

(21) Appl. No.: **13/344,046**

(22) Filed: **Jan. 5, 2012**

(65) **Prior Publication Data**
US 2013/0178341 A1 Jul. 11, 2013

(51) **Int. Cl.**
A63B 21/00 (2006.01)

(52) **U.S. Cl.**
USPC **482/55**; 482/35; 482/36

(58) **Field of Classification Search**
USPC 482/35, 23, 111, 34, 36, 38, 41, 55
See application file for complete search history.

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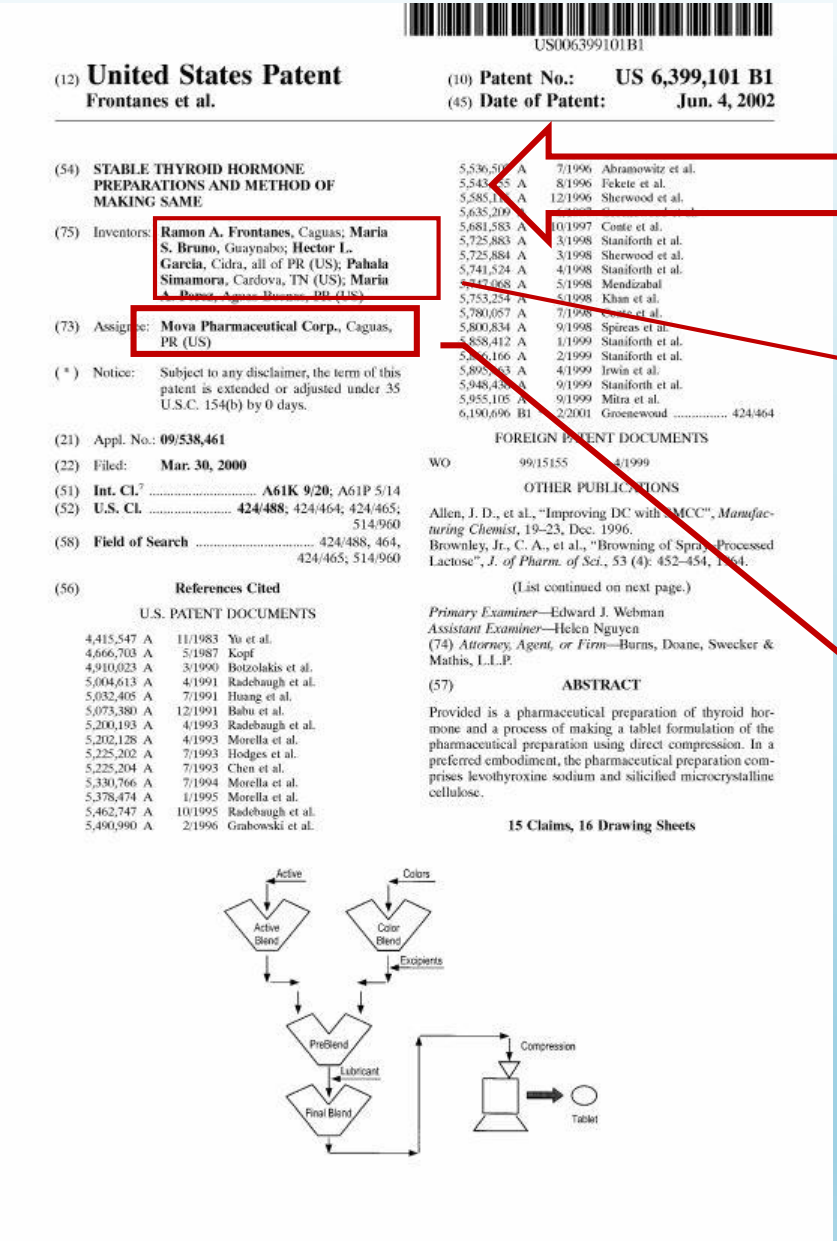
Primary Examiner — Jerome W Donnelly
(74) *Attorney, Agent, or Firm* — Hoglund & Pamias, P.S.C.; Roberto J. Rios

(57) **ABSTRACT**

The invention provides a mobile structure that can be used in any water body having a relatively uniform floor and a calm surface (i.e., beach, lake or pool). This structure has multiple hold and leaning surfaces and/or elements that lie flush and below the water level providing people with disabilities and older people a solid support structure to hold, sit, stand or lean while performing adapted swimming activities.

14 Claims, 7 Drawing Sheets

Ejemplos de Patentes de Utilidad



US006399101B1

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

(10) **Patent No.: US 6,399,101 B1**
(45) **Date of Patent: Jun. 4, 2002**

(54) **STABLE THYROID HORMONE PREPARATIONS AND METHOD OF MAKING SAME**

(75) Inventors: **Ramon A. Frontanes**, Caguas; **Maria S. Bruno**, Guaynabo; **Hector L. Garcia**, Cidra, all of PR (US); **Pahala Simamora**, Cardova, TN (US); **Maria A. Perez**, Aguas Buenas, PR (US)

(73) Assignee: **Mova Pharmaceutical Corp.**, Caguas, PR (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.: **09/538,461**

(22) Filed: **Mar. 30, 2000**

(51) **Int. Cl.**[7] **A61K 9/20**; A61P 5/14

(52) **U.S. Cl.** **424/488**; 424/464; 424/465; 514/960

(58) **Field of Search** 424/488, 464, 424/465; 514/960

(56) **References Cited**

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Brownley, Jr., C. A., et al., "Browning of Spray Processed Lactose", *J. of Pharm. of Sci.*, 53 (4): 452–454, 1964.

(List continued on next page.)

Primary Examiner—Edward J. Webman
Assistant Examiner—Helen Nguyen
(74) *Attorney, Agent, or Firm*—Burns, Doane, Swecker & Mathis, L.L.P.

(57) **ABSTRACT**

Provided is a pharmaceutical preparation of thyroid hormone and a process of making a tablet formulation of the pharmaceutical preparation using direct compression. In a preferred embodiment, the pharmaceutical preparation comprises levothyroxine sodium and silicified microcrystalline cellulose.

15 Claims, 16 Drawing Sheets

Título: Stable thyroid hormone preparations and method of making same

Inventores: Ramon A. Frontanes, Caguas; Maria S. Bruno, Guaynabo, Hector L. Garcia, Cidra, all of PR (US); Pahala Simamora, Cardova, TN (US); Maria A. Perez, Aguas Buenas, PR (US)

Assignee: Mova Pharmaceutical Corp., Caguas, PR (US)

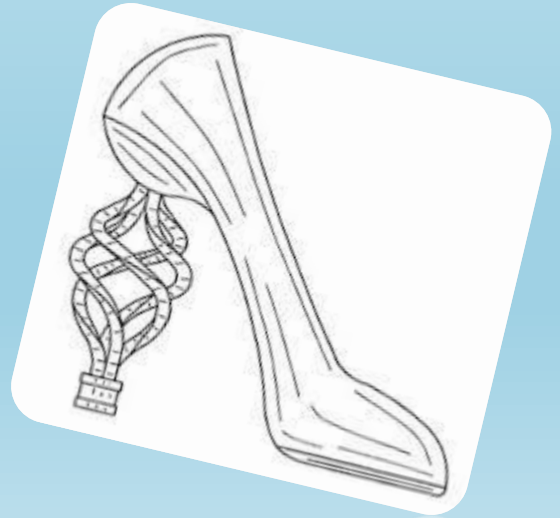
Pharmaceutical Patents

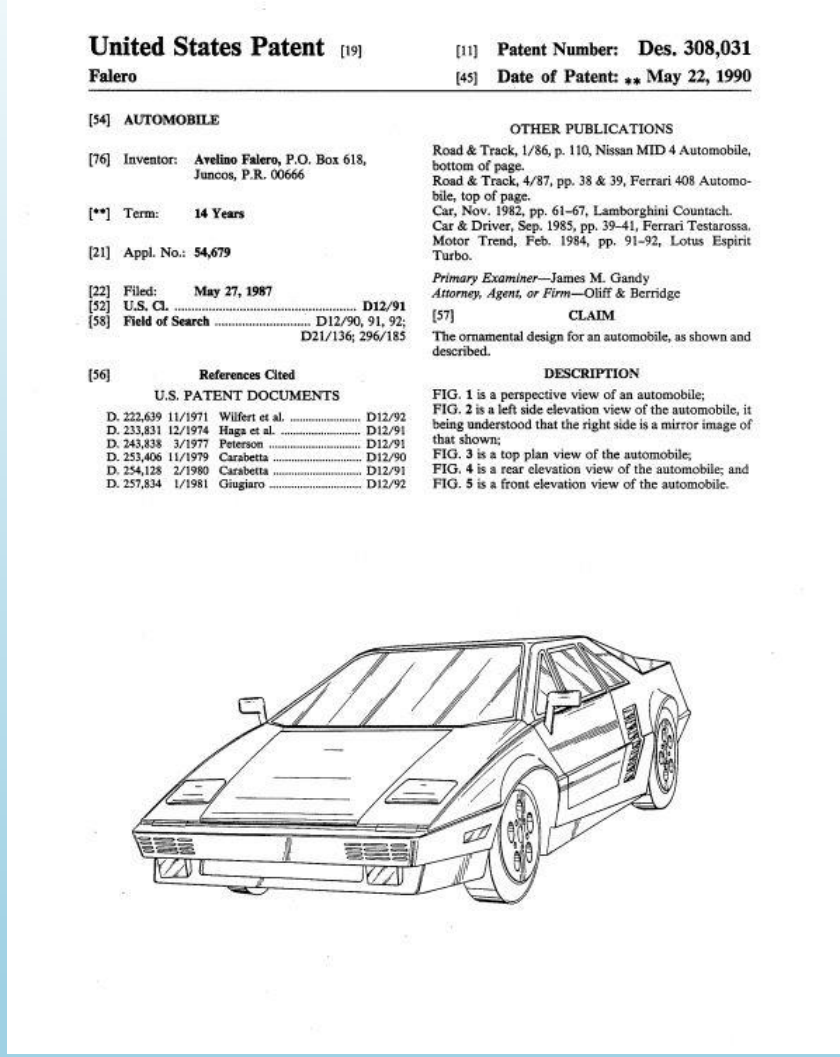
Patentes de Diseño (“Design Patents”)

- En este tipo de patentes las consideraciones importantes son su estética y no su funcionamiento.
- El diseño es el aspecto físico o la apariencia externa u ornamental, las líneas del diseño, sus contornos, su forma, sus colores, su textura y los materiales que se usaron para su confección.
- La protección es válida por un periodo de 14 años y no se puede renovar o extender.

Ejemplos de patentes de **diseño:**

Zapatos con tacones en espiral, abrigo adaptable a dispositivos móviles, una lámpara de corazones





United States Patent [19]
Falero

[11] **Patent Number: Des. 308,031**
[45] **Date of Patent: ** May 22, 1990**

[54] **AUTOMOBILE**

[76] Inventor: **Avelino Falero**, P.O. Box 618, Juncos, P.R. 00666

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

[21] Appl. No.: **54,679**

[22] Filed: **May 27, 1987**
[52] **U.S. Cl.** **D12/91**
[58] **Field of Search** D12/90, 91, 92; D21/136; 296/185

[56] **References Cited**

U.S. PATENT DOCUMENTS

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D. 233,831	12/1974	Haga et al.	D12/91
D. 243,838	3/1977	Peterson	D12/91
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D. 257,834	1/1981	Giugiaro	D12/92

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Car & Driver, Sep. 1985, pp. 39–41, Ferrari Testarossa.
Motor Trend, Feb. 1984, pp. 91–92, Lotus Espirit Turbo.

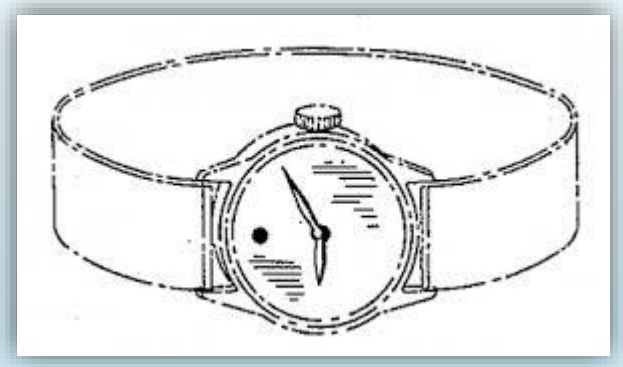
Primary Examiner—James M. Gandy
Attorney, Agent, or Firm—Oliff & Berridge

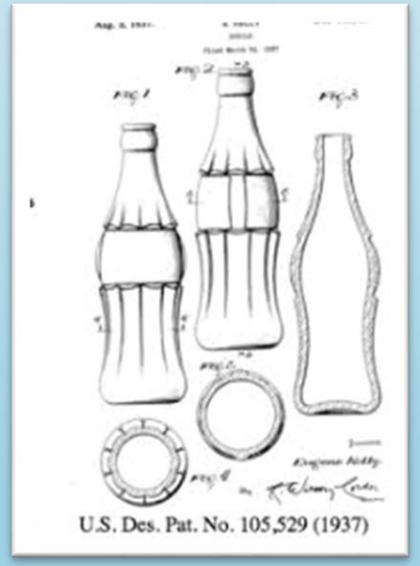
[57] **CLAIM**

The ornamental design for an automobile, as shown and described.

DESCRIPTION

FIG. **1** is a perspective view of an automobile;
FIG. **2** is a left side elevation view of the automobile, it being understood that the right side is a mirror image of that shown;
FIG. **3** is a top plan view of the automobile;
FIG. **4** is a rear elevation view of the automobile; and
FIG. **5** is a front elevation view of the automobile.





U.S. Des. Pat. No. 105,529 (1937)

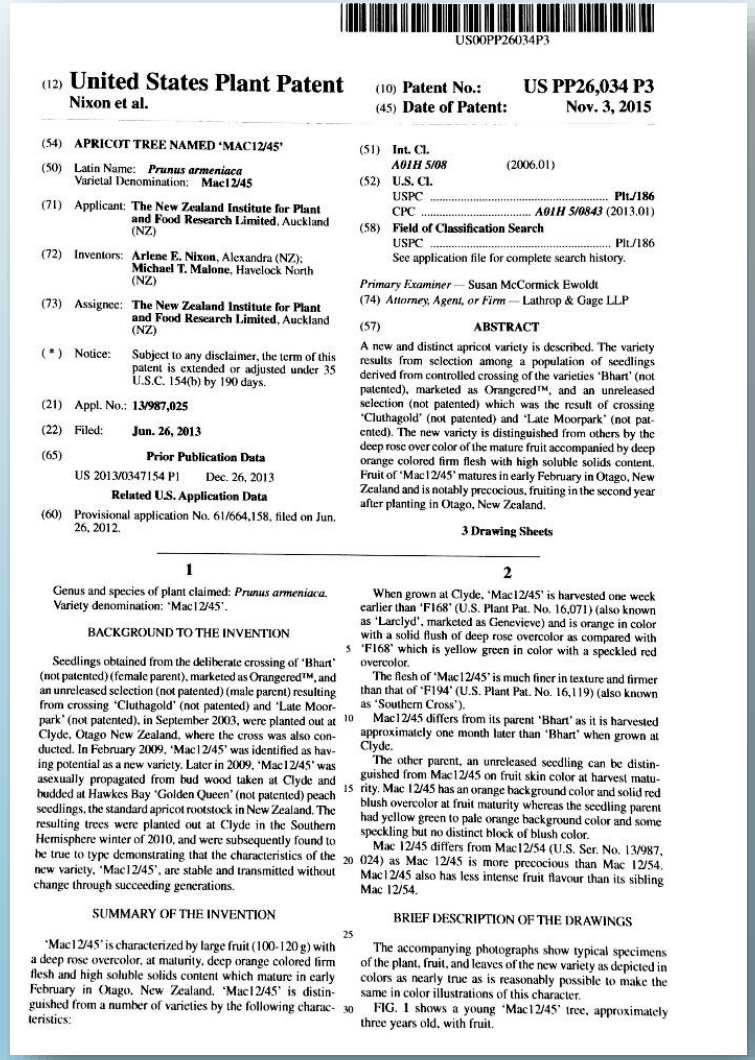
Ejemplos de Patentes de diseño

Patentes de Plantas (“Plants Patents”)

- Se conceden para invenciones o descubrimientos donde se reproduce asexualmente nuevas y distintas variedades de plantas y árboles.
- La reproducción asexual implica que de una planta se puedan reproducir copias genéticamente idénticas indefinidamente, ya sea por la manipulación o ingeniería genética (clonación) o por medio de injertos u otras tecnologías aplicadas mecánica o manualmente.
- La reproducción no puede ser por medios naturales como la polinización o la germinación de semillas.
- La protección es válida por un periodo de 20 años y no se puede renovar o extender.

Ejemplos de patentes **plantas:**

Pascua de color violeta, chironja, rosa color negro



US00PP26034P3

(12) **United States Plant Patent**
Nixon et al.

(10) **Patent No.: US PP26,034 P3**
(45) **Date of Patent: Nov. 3, 2015**

(54) **APRICOT TREE NAMED 'MAC12/45'**

(50) Latin Name: ***Prunus armeniaca***
Varietal Denomination: **Mac12/45**

(71) Applicant: **The New Zealand Institute for Plant and Food Research Limited**, Auckland (NZ)

(72) Inventors: **Arlene E. Nixon**, Alexandra (NZ); **Michael T. Malone**, Havelock North (NZ)

(73) Assignee: **The New Zealand Institute for Plant and Food Research Limited**, Auckland (NZ)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 190 days.

(21) Appl. No.: **13/987,025**

(22) Filed: **Jun. 26, 2013**

(65) **Prior Publication Data**

US 2013/0347154 P1 Dec. 26, 2013

Related U.S. Application Data

(60) Provisional application No. 61/664,158, filed on Jun. 26, 2012.

(51) **Int. Cl.**
A01H 5/08 (2006.01)

(52) **U.S. Cl.**
USPC **Plt./186**
CPC ***A01H 5/0843*** (2013.01)

(58) **Field of Classification Search**
USPC Plt./186
See application file for complete search history.

Primary Examiner — Susan McCormick Ewoldt
(74) *Attorney, Agent, or Firm* — Lathrop & Gage LLP

(57) **ABSTRACT**

A new and distinct apricot variety is described. The variety results from selection among a population of seedlings derived from controlled crossing of the varieties 'Bhart' (not patented), marketed as Orangered™, and an unreleased selection (not patented) which was the result of crossing 'Cluthagold' (not patented) and 'Late Moorpark' (not patented). The new variety is distinguished from others by the deep rose over color of the mature fruit accompanied by deep orange colored firm flesh with high soluble solids content. Fruit of 'Mac12/45' matures in early February in Otago, New Zealand and is notably precocious, fruiting in the second year after planting in Otago, New Zealand.

3 Drawing Sheets

1

Genus and species of plant claimed: *Prunus armeniaca*.
Variety denomination: 'Mac12/45'.

BACKGROUND TO THE INVENTION

Seedlings obtained from the deliberate crossing of 'Bhart' (not patented) (female parent), marketed as Orangered™, and an unreleased selection (not patented) (male parent) resulting from crossing 'Cluthagold' (not patented) and 'Late Moorpark' (not patented), in September 2003, were planted out at Clyde, Otago New Zealand, where the cross was also conducted. In February 2009, 'Mac12/45' was identified as having potential as a new variety. Later in 2009, 'Mac12/45' was asexually propagated from bud wood taken at Clyde and budded at Hawkes Bay 'Golden Queen' (not patented) peach seedlings, the standard apricot rootstock in New Zealand. The resulting trees were planted out at Clyde in the Southern Hemisphere winter of 2010, and were subsequently found to be true to type demonstrating that the characteristics of the new variety, 'Mac12/45', are stable and transmitted without change through succeeding generations.

SUMMARY OF THE INVENTION

'Mac12/45' is characterized by large fruit (100-120 g) with a deep rose overcolor, at maturity, deep orange colored firm flesh and high soluble solids content which mature in early February in Otago, New Zealand. 'Mac12/45' is distinguished from a number of varieties by the following characteristics:

2

When grown at Clyde, 'Mac12/45' is harvested one week earlier than 'F168' (U.S. Plant Pat. No. 16,071) (also known as 'Larclyd', marketed as Genevieve) and is orange in color with a solid flush of deep rose overcolor as compared with 'F168' which is yellow green in color with a speckled red overcolor.

The flesh of 'Mac12/45' is much finer in texture and firmer than that of 'F194' (U.S. Plant Pat. No. 16,119) (also known as 'Southern Cross').

Mac12/45 differs from its parent 'Bhart' as it is harvested approximately one month later than 'Bhart' when grown at Clyde.

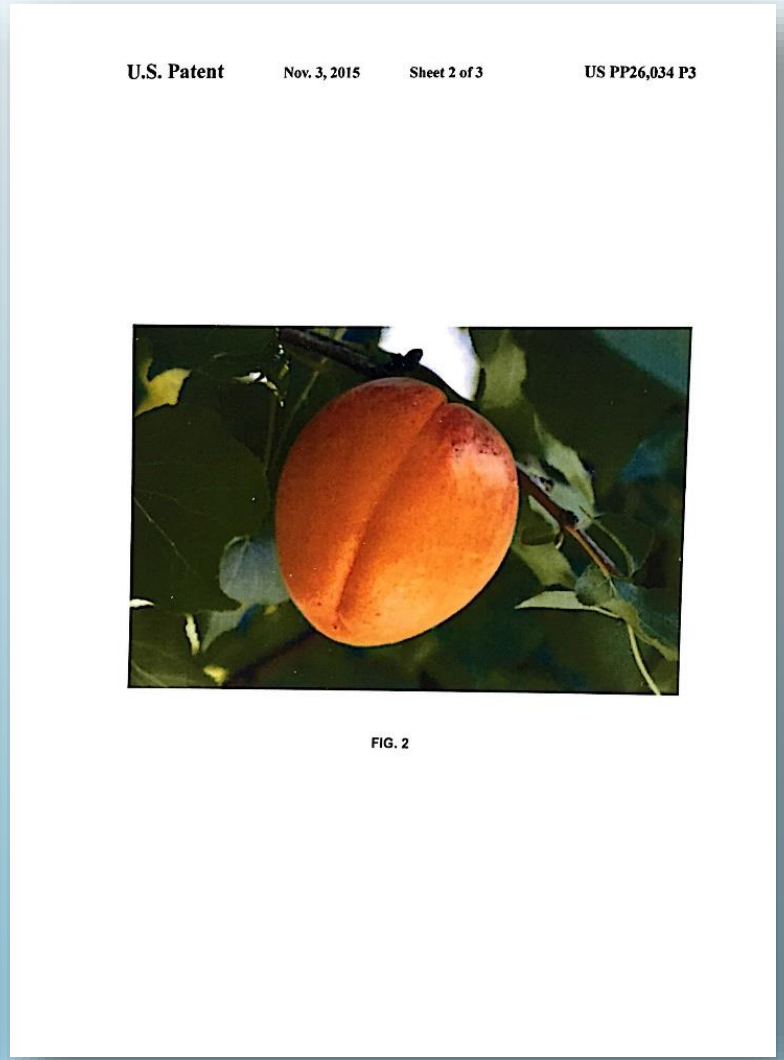
The other parent, an unreleased seedling can be distinguished from Mac12/45 on fruit skin color at harvest maturity. Mac 12/45 has an orange background color and solid red blush overcolor at fruit maturity whereas the seedling parent had yellow green to pale orange background color and some speckling but no distinct block of blush color.

Mac 12/45 differs from Mac12/54 (U.S. Ser. No. 13/987,024) as Mac 12/45 is more precocious than Mac 12/54. Mac12/45 also has less intense fruit flavour than its sibling Mac 12/54.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying photographs show typical specimens of the plant, fruit, and leaves of the new variety as depicted in colors as nearly true as is reasonably possible to make the same in color illustrations of this character.

FIG. 1 shows a young 'Mac12/45' tree, approximately three years old, with fruit.



U.S. Patent Nov. 3, 2015 Sheet 2 of 3 US PP26,034 P3

FIG. 2

U.S. Patent Nov. 3, 2015 Sheet 3 of 3 US PP26,034 P3

FIG. 3

Ejemplos de Patentes de Plantas

Requisitos

Innovador, nuevo, único, novedoso

nunca antes visto

funcional, útil

llene una necesidad

solucione un problema

No exista naturalmente en el ambiente

Solicitud Patente Provisional

- No son vistas por un examinador
- No se examinan en su fondo
- Permite al empresario o inventor utilizar el termino “ patent pending”
- El inventor tiene 12 meses para solicitar la patente permanente

Solucitud Patente permanente (non-provisional)

- Debeb incluir las especificaciones de la invención
- Descripción del invento
- Los reclamos
- Dibujo si es necesario
- Juramento (oath or declaration)
- Y demás especificaciones de la solicitud

Las patentes se solicitan en el USPTO.gov

Anatomía de una Patente

Apellido del primer inventor

Título del invento

Nombre y apellidos de cada inventor y ciudad de procedencia

Dueño de la patente

fecha de la solicitud

Datos de la patente original si se había patentizado en otro pais

Clasificación International de Patent

Clasificación de los Estados Unidos

Clases y subclases que utilizo el examinador durante el proceso de otorgación de la patente

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

(10) **Patent No.: US 7,107,678 B2**
(45) **Date of Patent: *Sep. 19, 2006**

(54) **FORMING METHOD OF THROTTLE APPARATUS FOR INTERNAL COMBUSTION ENGINE**

(75) Inventors: **Tsuyoshi Arai**, Kariya (JP); **Naoki Hiraiwa**, Toyokawa (JP); **Masami Goto**, Kasugai (JP); **Katsuya Torii**, Anjo (JP)

(73) Assignee: **Denso Corporation**, (JP)

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

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **10/983,260**

(22) Filed: **Nov. 8, 2004**

(65) **Prior Publication Data**

US 2005/0120556 A1 Jun. 9, 2005

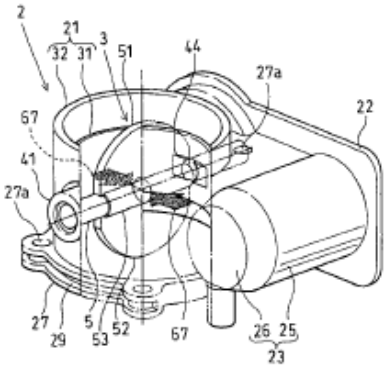
(30) **Foreign Application Priority Data**

Nov. 7, 2003 (JP) 2003-379089

(51) **Int. Cl.**
B21K 1/22 (2006.01)
B21K 1/20 (2006.01)
B29C 45/00 (2006.01)

(52) **U.S. Cl.** **29/888.4**; 29/888.45; 29/888.46; 29/527.1; 264/242; 264/328.8; 264/334; 425/573

(58) **Field of Classification Search** 29/888.4, 29/888.45, 888.46, 527.1; 264/242, 328.8, 264/328.18, 334, 275; 425/812, 573
See application file for complete search history.



Número de la patente

Fecha en que se otorga la patente

Lista de las patentes y otra literatura citada por el inventor y por el examinador durante el proceso de otorgación

Examinador o examinadores

Abogado o agente de patente que interviene en la solicitud (Practitioner(s)

Resumen

Dibujos (Drawings)

(56) **References Cited**

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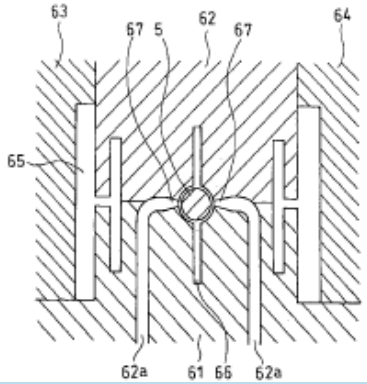
Primary Examiner—David P. Bryant
Assistant Examiner—Sarang Afzali
(74) *Attorney, Agent, or Firm*—Nixon & Vanderhye PC

(57) **ABSTRACT**

A throttle valve and the throttle body are formed substantially simultaneously in the same dies. The melted resin is injected in to a cavity through a pair of valve gates. The valve gates are symmetrically located with respect to the throttle valve shaft. A deformation of the throttle valve can be avoided because a stress concentration on the metal shaft of the throttle valve is reduced in opening the dies.

7 Claims, 10 Drawing Sheets



Adaptado de Josiah Hernández
https://engineering.uprm.edu/opitt/wp-content/uploads/2014/02/Anatomy-of-the-Patent.pptx

Basic components of a Patent – Specification

Lista de solicitudes relacionadas

Trasfondo de la invención

Resumen de la invención y descripción

Summary of the Invention

A brief summary of the invention indicating its nature and substance, which may include a statement of the object of the invention, should precede the detailed description. Such summary should, when set forth, be commensurate with the invention as claimed and any object recited should be that of the invention as claimed.

POLYSACCHARIDE FIBERS

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a U.S.C. 371 national phase entry of PCT International Application No. PCT/US00/01160, filed 19 Jan. 2000 which claims priority benefit from U.S. Provisional Application No. 60/117,209, filed 25 Jan. 1999.

BACKGROUND OF THE INVENTION

This invention pertains to novel fibers made of α(1→3) polysaccharides, and a process for their production. The fibers of the invention have "cotton-like" properties but can be produced as continuous filaments on a year-round basis. The fibers are useful in textile applications.

Polysaccharides have been known since the dawn of civilization, primarily in the form of cellulose, a polymer formed from glucose by natural processes via β(1→4) glucoside linkages; see, for example, *Applied Fibre Science*, F. Happey, Ed., Chapter 8, E. Atkins, Academic Press, New York, 1979. Numerous other polysaccharide polymers are also disclosed therein.

Only cellulose among the many known polysaccharides has achieved commercial prominence as a fiber as a consequence of the many useful products derived therefrom. In particular, cotton, a highly pure form of naturally occurring cellulose, is well-known for its beneficial attributes in textile applications.

It is further known that cellulose exhibits sufficient chain extension and backbone rigidity in solution to form liquid crystalline solutions; see, for example O'Brien, U.S. Pat. No. 4,501,886. The teachings of the art suggest that sufficient polysaccharide chain extension could be achieved only in β(1→4) linked polysaccharides and that any significant deviation from that backbone geometry would lower the molecular aspect ratio below that required for the formation of an ordered phase.

More recently, glucan polymer characterized by α(1→3) glucoside linkages has been isolated by contacting an aqueous solution of sucrose with GtfI glucosyltransferase isolated from *Streptococcus salivarius*, Simpson et al., Microbiology, vol 141, pp. 1451–1460 (1995). Highly crystalline, highly oriented, low molecular weight films of α(1→3)-D-glucan have been fabricated for the purposes of x ray diffraction analysis, Ogawa et al., Fiber Diffraction Methods, 47, pp. 353–362 (1980). In Ogawa, the insoluble glucan polymer is acetylated, the acetylated glucan dissolved to form a 5% solution in chloroform and the solution cast into a film. The film is then subjected to stretching in glycerine at 150° C. which orients the film and stretches it to a length 6.5 times the original length of the solution cast film. After stretching, the film is deacetylated and crystallized by annealing in superheated water at 140° C. in a pressure vessel. It is well-known in the art that exposure of polysaccharides to such a hot aqueous environment results in chain cleavage and loss of molecular weight, with concomitant degradation of mechanical properties. Thus, considerable benefit would accrue to a process which would provide the high orientation and crystallinity desired for fibers without a reduction in molecular weight.

It is highly desirable to discover other polysaccharides having utility as films, fibers or resins because of their widespread importance in the global ecosystem. Polysaccharides based on glucose and glucose itself are particularly important because of their prominent role in photosynthesis

and metabolic processes. Cellulose and starch, both based on molecular chains of polyanhydroglucose are the most abundant polymers on earth and are of great commercial importance. Such polymers offer materials that are environmentally benign throughout their entire life cycle and are constructed from renewable energy and raw materials sources.

The properties exhibited by cellulose and starch are determined by the nature of their enchainment pattern. Hence, starch or amylose consisting of α(1→4) linked glucose is not useful for fiber applications because it is swollen or dissolved by water. Alternatively, cellulose, having β(1→4) enchainment, is a good structural material being both crystalline and hydrophobic, and is commonly used for textile applications as cotton fiber. Like other natural fibers, cotton has evolved under constraints, wherein the polysaccharide structure and physical properties have not been optimized for textile uses. In particular, cotton fiber offers short fiber length, limited variation in cross section and fiber fineness and is produced in a highly labor and land intensive process.

Thus, it is desirable to form new structural polysaccharides through processes such as enzymatic synthesis or through genetic modification of microorganisms or plant hosts and fibers made from such new polysaccharides that retain the desirable features of biodegradability, renewable resource-based feedstocks and low cost.

SUMMARY OF THE INVENTION

The present invention concerns a polysaccharide fiber, comprising: a polymer comprising hexose units wherein at least 50% of the hexose units are linked via an α(1→3) glycoside linkage, said polymer having a number average degree of polymerization of at least 100.

The present invention also concerns a process for producing a polysaccharide fiber, comprising the steps of: dissolving a sufficient amount of a polymer comprising hexose units, wherein at least 50% of the hexose units are linked via an α(1→3) glycoside linkage, in a solvent or in a mixture comprising a solvent to form a liquid crystalline solution, and spinning a polysaccharide fiber from said liquid crystalline solution.

The present invention further concerns a liquid crystalline solution, comprising: a solvent and an amount sufficient to form liquid crystals of a polymer comprising hexose units wherein within the polymer at least 50% of the hexose units are linked via an α(1→3) glycoside linkage.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic diagram of an apparatus for air gap or wet spinning of liquid crystalline solutions of hexose polymer to form polysaccharide fibers.

DETAILED DESCRIPTION

In one of the surprising aspects of the present invention, it has now been found that a polymer comprising hexose units, wherein at least 50% of the hexose units within the polymer are linked via an α(1→3) glycoside linkage, can form a liquid crystalline solution when a sufficient amount of the polymer is dissolved in a solvent or in a mixture comprising a solvent, and that from this solution can be spun a continuous, high strength, cotton-like fiber highly suitable for use in textiles either in a derivatized form, a non-derivatized form or a regenerated form. By "regenerated" is

Descripción resumida de los dibujos

Importante hacer referencia a las diferentes partes y ángulos del invento

Descripción detallada

Descripción que la permita a cualquier persona versada en el tema de la invención hacer uso de ella.

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Basic components of a Patent – Claims

structured porous packing trays were installed, and the rectification and stripping sections were 5 meters high which were filled with dumped packings of ϕ6×6 mm cannon stainless steel rings with openings. Raw materials were fed from the lower part of the reaction section and products came out from the top. The results of test are shown in Table 1 below.

TABLE 1

Location		feed	Tops	botoms
Composition mol %	C_2°	0.02	0.02	
	C_3°	2.50	4.11	1.46
	C_3^{-}	72.14	95.87	11.29
	C_3^{--}	1.08	4 ppm	2.47
	$C_3^{=}$	2.09	3 ppm	4.72
	C_4°	19.43		74.05
	C_5°	2.72		6.02
flow (l/h)		10	7.4	2.6
temperature (° C.)		25	42	98
pressure (MPa)		2.3	1.75	1.78
H/alkyne			0.9	
Propylene yield (%)			101.9	

It can be seen from the results of the test that the structured member for catalytic distillation of the present invention has a good performances in both reaction and separation as evidenced by the fact that contents in both methylacetylene and propadiene in the overhead products have been lowered to below 3 ppm after catalytic distillation.

EXAMPLE 10

The performances of the structured members for catalytic distillation that had been surface-modified with different types of Al_2O_3 were compared. Multiple ϕ100×1.00 mm structured porous packings fabricated in Example 6 were immersed in a suspension containing aluminum hydroxide for 20 hours, taken out, and divided into two groups and baked for 12 hours at 500° C. and 1100° C. respectively, which result in that packings were surface modified with γ-Al_2O_3 or α-Al_2O_3 accordingly. After modification, the modified structured porous ceramic packings were coated with metal Pd in the same manner as indicated in Example 3. The two groups of structured catalytic distillation members were placed in a reaction section of catalytic distillation column separately in the similar manner as mdicated in Example 4 and tested in separate runs of catalytic distillation for hydrogenation of C_3 fraction under conditions given in Example 4. The results are shown in table 2.

TABLE 2

structured member for catalytic distillation	γ-Al_2O_3 modified	α-Al_2O_3 modified
specific area (M^2/g)	50	10
convesion (%)	99.98	99.96
selectivity (%)	46.38	82.44

It can be seen from the results that the structured members used in a catalytic distillation column modified with α-Al_2O_3 have both higher conversion and better selectivity while those structured members used in a catalytic distillation column modified with γ-Al_2O_3 have a high conversion but a poorer selectivity. Thus, according to the present invention, using α-Al_2O_3 to modify the surface of structured porous ceramic packing for a catalytic distillation column shows better result.

The invention claimed is:

1. A method for preparing a composite for catalytic distillation comprising a substrate material, a modifying material and an active material, said substrate material comprising structured packing made up of porous metals or porous ceramic materials, said modifying material comprises at least one metal oxide, and said active material comprises an active component for a catalytic reaction, the method comprising the steps of:

(1) coating a surface of the substrate material with the modifying material by using a thermo-chemical reaction process, which comprises the steps of:

a) preparing a water-based coating material in which superfine particles with particle size below 10 μm of the modifying material are dispersed in a solution, wherein a ratio of modifying material to water is in a range between 1:2 and 1:5, and a pH of the solution is adjusted to a range between 2 and 4, and

b) coating the substrate material with the water-based coating material obtained from step a), and the obtained substrate material is subjected to drying and curing treatment to form a modified coat on the surfaces of the substrate material; and

(2) loading the active material containing active components onto the modifying material by using a dip-or spray-coating process.

2. The method according to claim **1**, wherein said substrate has a specific area greater than 400 m^2/m^3 and a voidage of 70–95%.

* * * * *

Reclamos

Independent claim

The first claim in a patent application is almost always an independent claim, but other claims may be independent as well. These types of claims stand on their own and are independent of the patentability of the other independent claims (see MPEP 1824).

Dependent claim (“according to claim 1”)

One or more claims may be presented in dependent form, referring back to and further limiting another claim or claims in the same application.

Adaptado de Josiah Hernández
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We claim:

1. A swimming support structure for people with disabilities comprising:

a plurality of support bases, each support base comprising a horizontal element configured to contact a floor of a body of water; a verical element attached to said horizontal element extending upwardly from said horizontal element and a union element configured to removably receive said horizontal element and said verical element to form a T-shaped support base;

one pair of transversal elements extending between two support bases of said plurality of support bases and configured to be removably attached from the vertical elements of said two support bases, respectively, each of said transversal elements being configured to selectively adjust its height with respect to the water level of said body of water independent from the other.

2. The swimming support structure of claim **1** further comprising:

a clamping element having an attaching portion configured to be removably attached to said vertical element and at least one receiving portion configured to receive one end of a transversal element.

3. The swimming support structure of claim **2**, wherein said clamping element is configured to longitudinally slide on said vertical element so that said transversal element adjust its height with respect to the water level of said body of water.

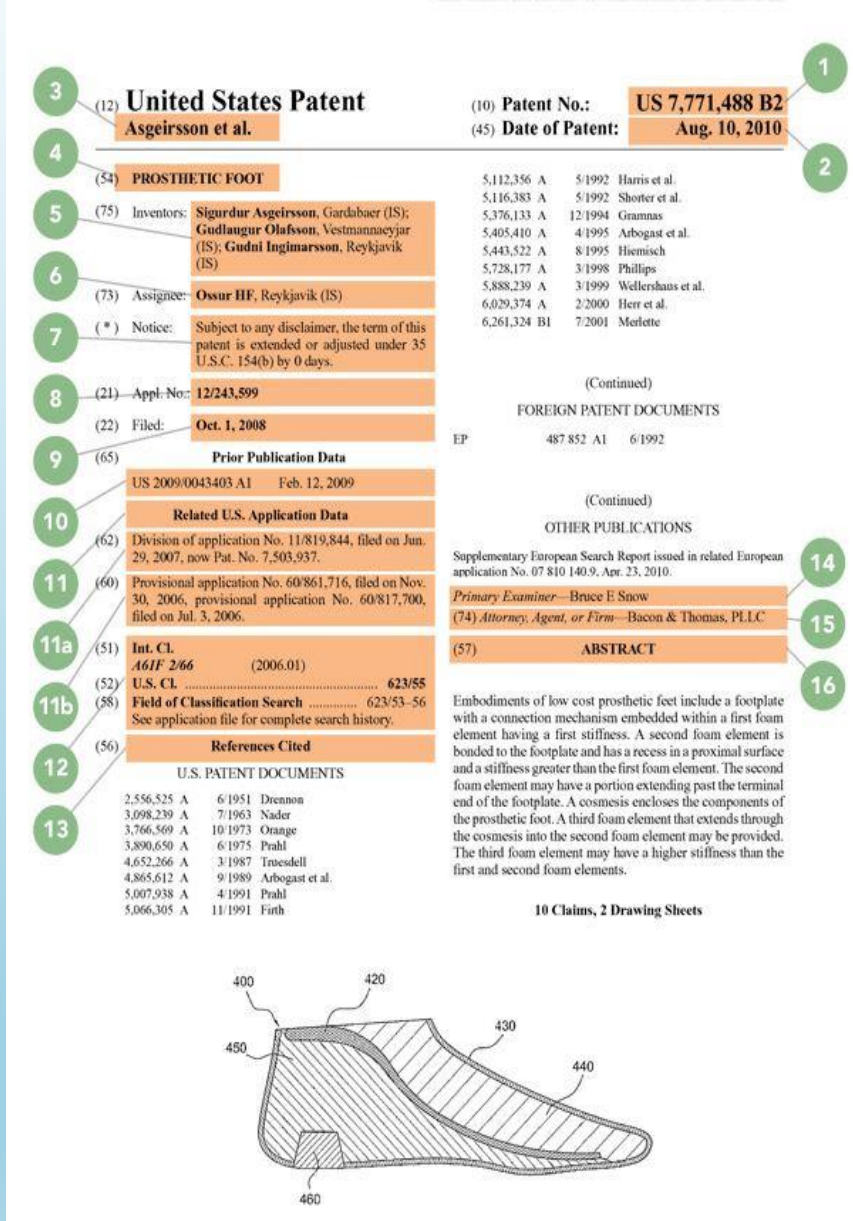
4. The swimming support structure of claim **1**, wherein said pair of transversal elements comprises an upper transversal element and a lower transversal element, said upper transversal element being configured to be positioned at a distance closer to the water level of said body of water than the distance of said lower transversal element.

5. The swimming support structure of claim **1**, wherein said pair of transversal elements comprises at least one opening that allows the free flow of water when attached to said vertical elements.

6. The swimming support structure of claim **1**, wherein at least one of said horizontal element and said vertical element comprises a hollow interior portion selectively sealed by a removable lid.

- Definen las fronteras de la patente
- Define los límites de lo que es y lo que no es
- Definen el ámbito de la protección legal de la patente
- Reclama lo distintivo y único del invento
- Debe presentar lo que está protegido del invento y lo que no está protegido

Reclamos o reinvindicaciones (Claims)



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

(10) **Patent No.: US 7,771,488 B2**
(45) **Date of Patent: Aug. 10, 2010**

(54) **PROSTHETIC FOOT**

(75) Inventors: **Sigurdur Asgeirsson**, Gardabaer (IS); **Gudlaugur Olafsson**, Vestmannaeyjar (IS); **Gudni Ingimarsson**, Reykjavik (IS)

(73) Assignee: **Ossur HF**, Reykjavik (IS)

(*) 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.: **12/243,599**

(22) Filed: **Oct. 1, 2008**

(65) **Prior Publication Data**

US 2009/0043403 A1 Feb. 12, 2009

Related U.S. Application Data

(62) Division of application No. 11/819,844, filed on Jun. 29, 2007, now Pat. No. 7,503,937.

(60) Provisional application No. 60/861,716, filed on Nov. 30, 2006, provisional application No. 60/817,700, filed on Jul. 3, 2006.

(51) **Int. Cl.**
A61F 2/66 (2006.01)

(52) **U.S. Cl.** **623/55**

(58) **Field of Classification Search** 623/53–56
See application file for complete search history.

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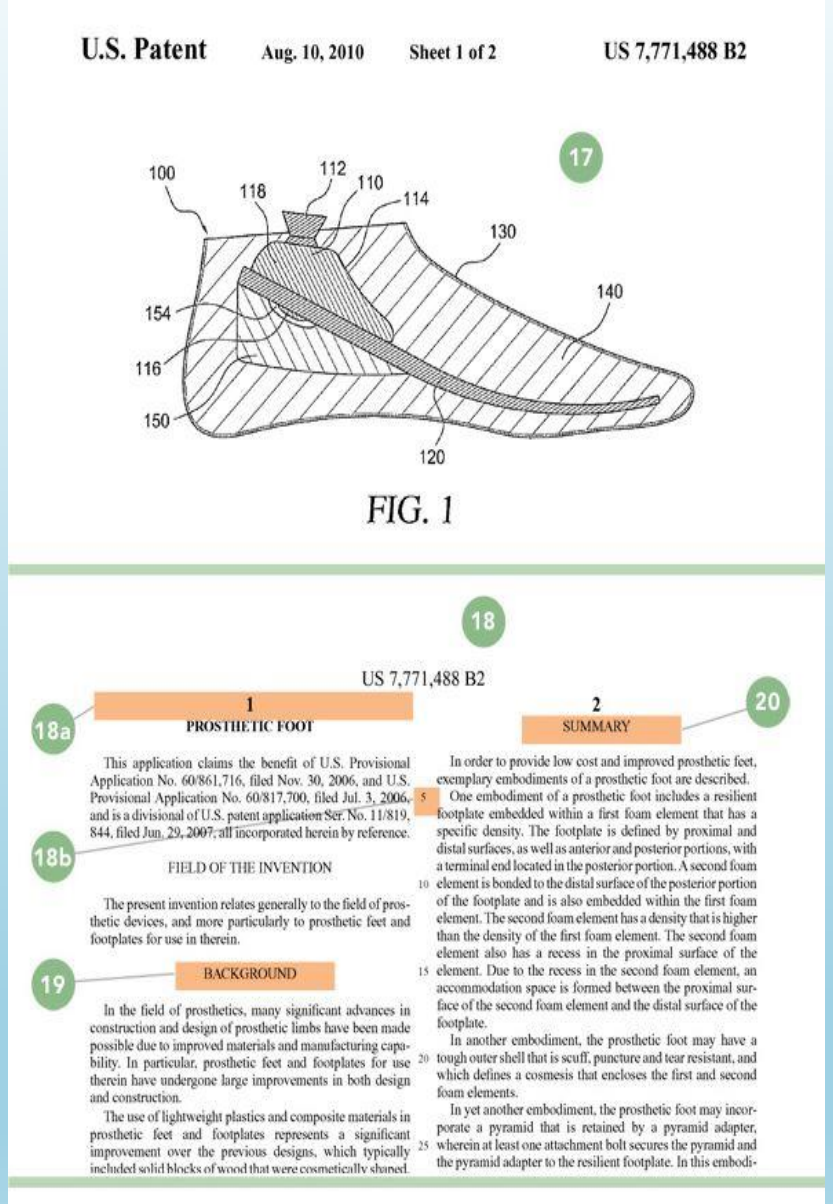
Primary Examiner—Bruce E Snow
(74) *Attorney, Agent, or Firm*—Bacon & Thomas, PLLC

(57) **ABSTRACT**

Embodiments of low cost prosthetic feet include a footplate with a connection mechanism embedded within a first foam element having a first stiffness. A second foam element is bonded to the footplate and has a recess in a proximal surface and a stiffness greater than the first foam element. The second foam element may have a portion extending past the terminal end of the footplate. A cosmesis encloses the components of the prosthetic foot. A third foam element that extends through the cosmesis into the second foam element may be provided. The third foam element may have a higher stiffness than the first and second foam elements.

10 Claims, 2 Drawing Sheets



U.S. Patent Aug. 10, 2010 Sheet 1 of 2 US 7,771,488 B2

FIG. 1

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PROSTHETIC FOOT

This application claims the benefit of U.S. Provisional Application No. 60/861,716, filed Nov. 30, 2006, and U.S. Provisional Application No. 60/817,700, filed Jul. 3, 2006, and is a divisional of U.S. patent application Ser. No. 11/819,844, filed Jun. 29, 2007, all incorporated herein by reference.

FIELD OF THE INVENTION

The present invention relates generally to the field of prosthetic devices, and more particularly to prosthetic feet and footplates for use in therein.

BACKGROUND

In the field of prosthetics, many significant advances in construction and design of prosthetic limbs have been made possible due to improved materials and manufacturing capability. In particular, prosthetic feet and footplates for use therein have undergone large improvements in both design and construction.

The use of lightweight plastics and composite materials in prosthetic feet and footplates represents a significant improvement over the previous designs, which typically included solid blocks of wood that were cosmetically shaped.

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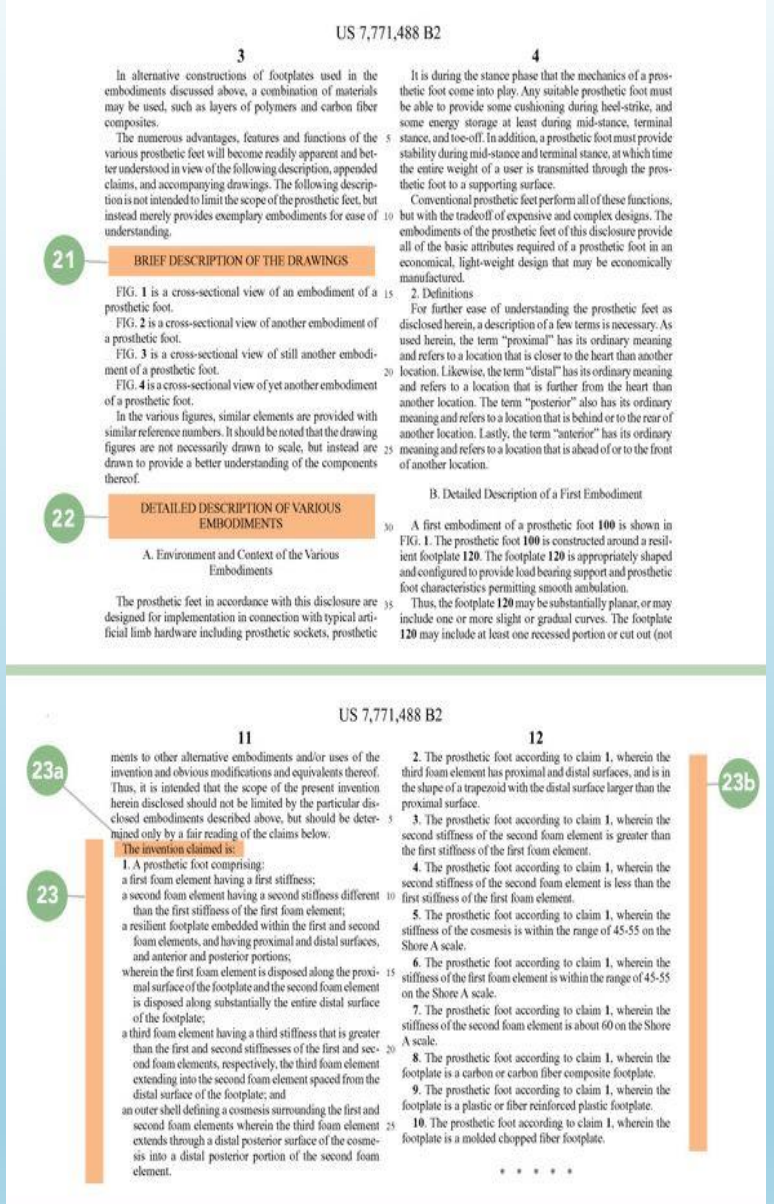
SUMMARY

In order to provide low cost and improved prosthetic feet, exemplary embodiments of a prosthetic foot are described.

One embodiment of a prosthetic foot includes a resilient footplate embedded within a first foam element that has a specific density. The footplate is defined by proximal and distal surfaces, as well as anterior and posterior portions, with a terminal end located in the posterior portion. A second foam element is bonded to the distal surface of the posterior portion of the footplate and is also embedded within the first foam element. The second foam element has a density that is higher than the density of the first foam element. The second foam element also has a recess in the proximal surface of the element. Due to the recess in the second foam element, an accommodation space is formed between the proximal surface of the second foam element and the distal surface of the footplate.

In another embodiment, the prosthetic foot may have a tough outer shell that is scuff, puncture and tear resistant, and which defines a cosmesis that encloses the first and second foam elements.

In yet another embodiment, the prosthetic foot may incorporate a pyramid that is retained by a pyramid adapter, wherein at least one attachment bolt secures the pyramid and the pyramid adapter to the resilient footplate. In this embodi-



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In alternative constructions of footplates used in the embodiments discussed above, a combination of materials may be used, such as layers of polymers and carbon fiber composites.

The numerous advantages, features and functions of the various prosthetic feet will become readily apparent and better understood in view of the following description, appended claims, and accompanying drawings. The following description is not intended to limit the scope of the prosthetic feet, but instead merely provides exemplary embodiments for ease of understanding.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a cross-sectional view of an embodiment of a prosthetic foot.

FIG. **2** is a cross-sectional view of another embodiment of a prosthetic foot.

FIG. **3** is a cross-sectional view of still another embodiment of a prosthetic foot.

FIG. **4** is a cross-sectional view of yet another embodiment of a prosthetic foot.

In the various figures, similar elements are provided with similar reference numbers. It should be noted that the drawing figures are not necessarily drawn to scale, but instead are drawn to provide a better understanding of the components thereof.

DETAILED DESCRIPTION OF VARIOUS EMBODIMENTS

A. Environment and Context of the Various Embodiments

The prosthetic feet in accordance with this disclosure are designed for implementation in connection with typical artificial limb hardware including prosthetic sockets, prosthetic

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It is during the stance phase that the mechanics of a prosthetic foot come into play. Any suitable prosthetic foot must be able to provide some cushioning during heel-strike, and some energy storage at least during mid-stance, terminal stance, and toe-off. In addition, a prosthetic foot must provide stability during mid-stance and terminal stance, at which time the entire weight of a user is transmitted through the prosthetic foot to a supporting surface.

Conventional prosthetic feet perform all of these functions, but with the tradeoff of expensive and complex designs. The embodiments of the prosthetic feet of this disclosure provide all of the basic attributes required of a prosthetic foot in an economical, light-weight design that may be economically manufactured.

2. Definitions

For further ease of understanding the prosthetic feet as disclosed herein, a description of a few terms is necessary. As used herein, the term "proximal" has its ordinary meaning and refers to a location that is closer to the heart than another location. Likewise, the term "distal" has its ordinary meaning and refers to a location that is further from the heart than another location. The term "posterior" also has its ordinary meaning and refers to a location that is behind or to the rear of another location. Lastly, the term "anterior" has its ordinary meaning and refers to a location that is ahead of or to the front of another location.

B. Detailed Description of a First Embodiment

A first embodiment of a prosthetic foot **100** is shown in FIG. **1**. The prosthetic foot **100** is constructed around a resilient footplate **120**. The footplate **120** is appropriately shaped and configured to provide load bearing support and prosthetic foot characteristics permitting smooth ambulation.

Thus, the footplate **120** may be substantially planar, or may include one or more slight or gradual curves. The footplate **120** may include at least one recessed portion or cut out (not

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ments to other alternative embodiments and/or uses of the invention and obvious modifications and equivalents thereof. Thus, it is intended that the scope of the present invention herein disclosed should not be limited by the particular disclosed embodiments described above, but should be determined only by a fair reading of the claims below.

The invention claimed is:

1. A prosthetic foot comprising:

a first foam element having a first stiffness;

a second foam element having a second stiffness different than the first stiffness of the first foam element;

a resilient footplate embedded within the first and second foam elements, and having proximal and distal surfaces, and anterior and posterior portions;

wherein the first foam element is disposed along the proximal surface of the footplate and the second foam element is disposed along substantially the entire distal surface of the footplate;

a third foam element having a third stiffness that is greater than the first and second stiffnesses of the first and second foam elements, respectively, the third foam element extending into the second foam element spaced from the distal surface of the footplate; and

an outer shell defining a cosmesis surrounding the first and second foam elements wherein the third foam element extends through a distal posterior surface of the cosmesis into a distal posterior portion of the second foam element.

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2. The prosthetic foot according to claim **1**, wherein the third foam element has proximal and distal surfaces, and is in the shape of a trapezoid with the distal surface larger than the proximal surface.

3. The prosthetic foot according to claim **1**, wherein the second stiffness of the second foam element is greater than the first stiffness of the first foam element.

4. The prosthetic foot according to claim **1**, wherein the second stiffness of the second foam element is less than the first stiffness of the first foam element.

5. The prosthetic foot according to claim **1**, wherein the stiffness of the cosmesis is within the range of 45-55 on the Shore A scale.

6. The prosthetic foot according to claim **1**, wherein the stiffness of the first foam element is within the range of 45-55 on the Shore A scale.

7. The prosthetic foot according to claim **1**, wherein the stiffness of the second foam element is about 60 on the Shore A scale.

8. The prosthetic foot according to claim **1**, wherein the footplate is a carbon or carbon fiber composite footplate.

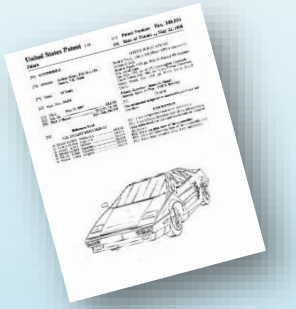
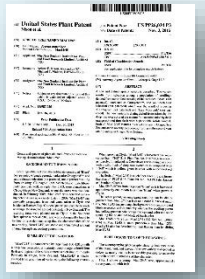
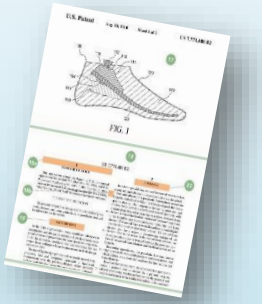
9. The prosthetic foot according to claim **1**, wherein the footplate is a plastic or fiber reinforced plastic footplate.

10. The prosthetic foot according to claim **1**, wherein the footplate is a molded chopped fiber footplate.

* * * * *

Tomado de Bacon and Thomas PLLC
http://www.baconthomas.com/p_anatomy.html

Arte previo

- Necesitas justificarle al USPTO que tu invento es nuevo, innovador, nunca antes visto
- Patentes similares a la tuya
- Sirve para comparar el por qué tu invento es diferente a los demás
- Debes hacer una búsqueda en USPTO para identificarlas
- De una vez descubrirás que tu invento no está patentado

Non patent literature

http://libguides.library.cpp.edu/vote/scholarly

- Apoya el uso y las necesidades del invento para la sociedad o la ciencia
- Justifica la creación del mismo
- Apoya con literatura científica las bondades o beneficios de la invención
- Esta literatura se busca en las bases de datos con artículos de revistas académicas (peer review journals, scholarly journals)
- Estas bases de datos comunmente las proveen las Bibliotecas académicas (http://libguides.uprm.edu/az.php)
- Consulta con un bibliotecario si tienes dudas.

Aspectos a considerar antes de buscar

Siete Pasos y Estrategias para una Investigación Preliminar de Patentes

Preparaciones Antes de Iniciar su Investigación de Patentes

1. Planifique dedicarle algunas horas aprendiendo el proceso de búsqueda e investigación de patentes.
2. Luego, deberá dedicar muchas horas adicionales buscando patentes, así como estudiando y evaluando los documentos obtenidos.
3. El tiempo que necesitará su investigación dependerá de la complejidad de su invento.
4. Tenga a mano bolígrafo y hojas de papel en blanco para sus anotaciones.
5. Deberá tener acceso a una computadora con servicios de Internet.
6. La computadora deberá tener instalado el lector PDF. De no tenerlo, puede descargarlo gratuitamente del portal **http://get.adobe.com/reader**.

Clasificando su Invento

Paso 1: Haga Lista de Términos Claves que Mejor Describen su Invento

Comience escribiendo en una hoja de papel una descripción breve y concisa de su invento. Evite descripciones amplias y términos generales como "aparato," "procesos" o "sistema." Anote términos técnicos, incluyendo sinónimos y términos asociados. Las siguientes preguntas le ayudarán a identificar términos relevantes. Pregúntese:

- ¿Cuál es el propósito del invento? ¿Qué es lo que hace? ¿Es una cosa útil o más bien un diseño ornamental?
- ¿Es el invento un proceso, esto es, que hace algo o lleva a cabo alguna función, o se trata de un producto? ¿Cómo funciona?
- ¿De qué está hecho? ¿Cuál es su composición física?
- ¿Cómo se usa? ¿Para qué es utilizado? ¿Qué problema(s) resuelve?
- ¿Cuáles son las palabras claves o términos que mejor describe la naturaleza de la invención? Consulte un diccionario que le ayude a encontrar términos apropiados.

Debe ordenar los términos en forma descendente—de mayor a menor. Por ejemplo:

Vehicle ➔ Land Vehicle ➔ Wheels and Axles ➔ Wheel

Búsqueda de Patentes

Patentes
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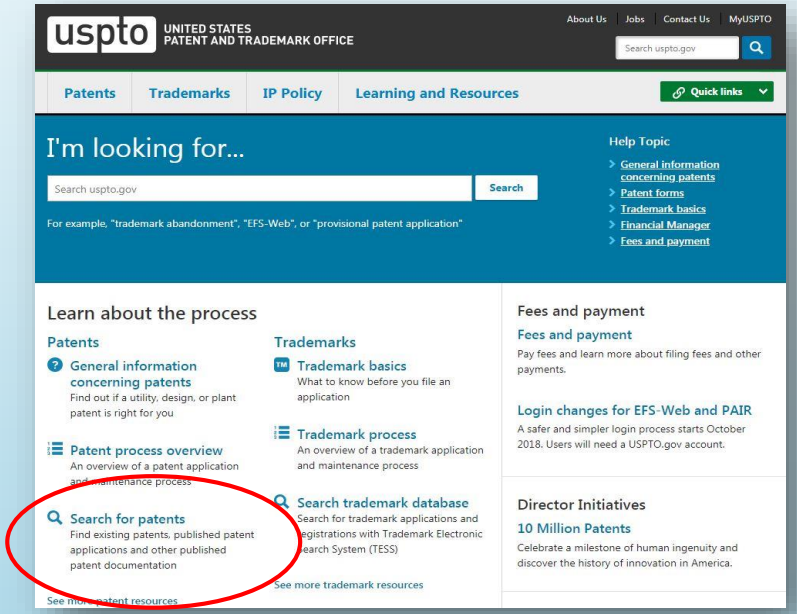
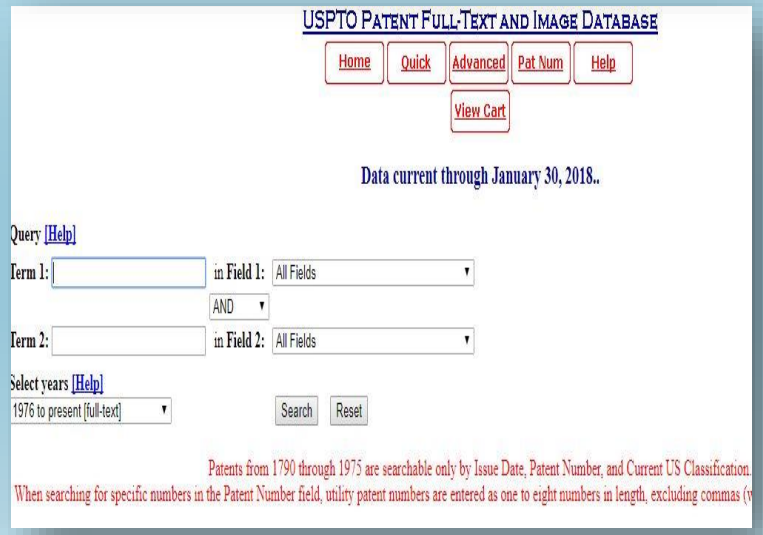
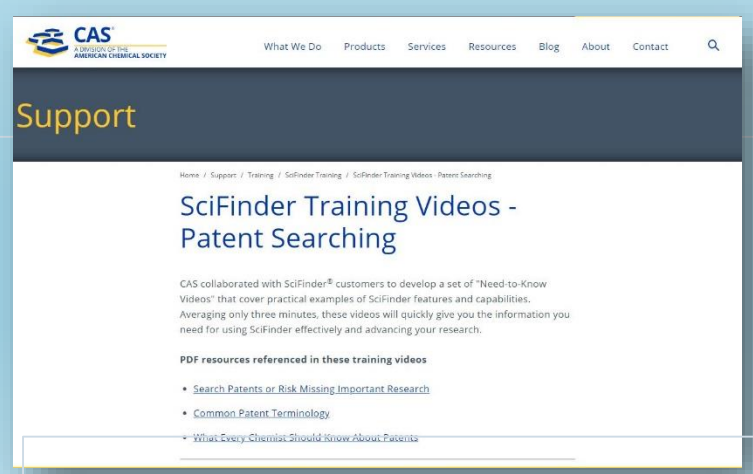




Google Patents

- En google patents vas a encontrar patentes de diferentes países
- La manera en que se ven son diferentes al USPTO
- Si la búsqueda es para descartar que el invento existe en USPTO, no es recommendable usar google patents, ni Scifinder



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Para acceder el documento completo de la patente deseada, deberá pulsar el icono de la patente o en el título de la misma.

Búsqueda por año:

Seleccione

2021

1,5-Disubstituted 1,2,3-triazoles are inhibitors of Rac/Cdc42 GTPases

Patent No.: US 10,947,247
Issue Date: March 16, 2021
Inventors: Vlaar; Cornelis P. (San Juan, PR), Dharmawardhane Flanagan; Suranganie (San Juan, PR), Hernández-O'Farrill; Eliud (San Juan, PR), Castillo-Pichardo; Linette (San Juan, PR)

https://www.upr.edu/biblioteca-rum/patenteupr/

Tutorial

BÚSQUEDA DE PATENTES OTORGADAS A PUERTORRIQUEÑOS O RESIDENTES EN PUERTO RICO

POR PROF. GLADYS E. LÓPEZ – CENTRO DE RECURSOS DE PATENTES Y MARCAS – UNIVERSIDAD DE PUERTO RICO – MAYAGUEZ , 2019

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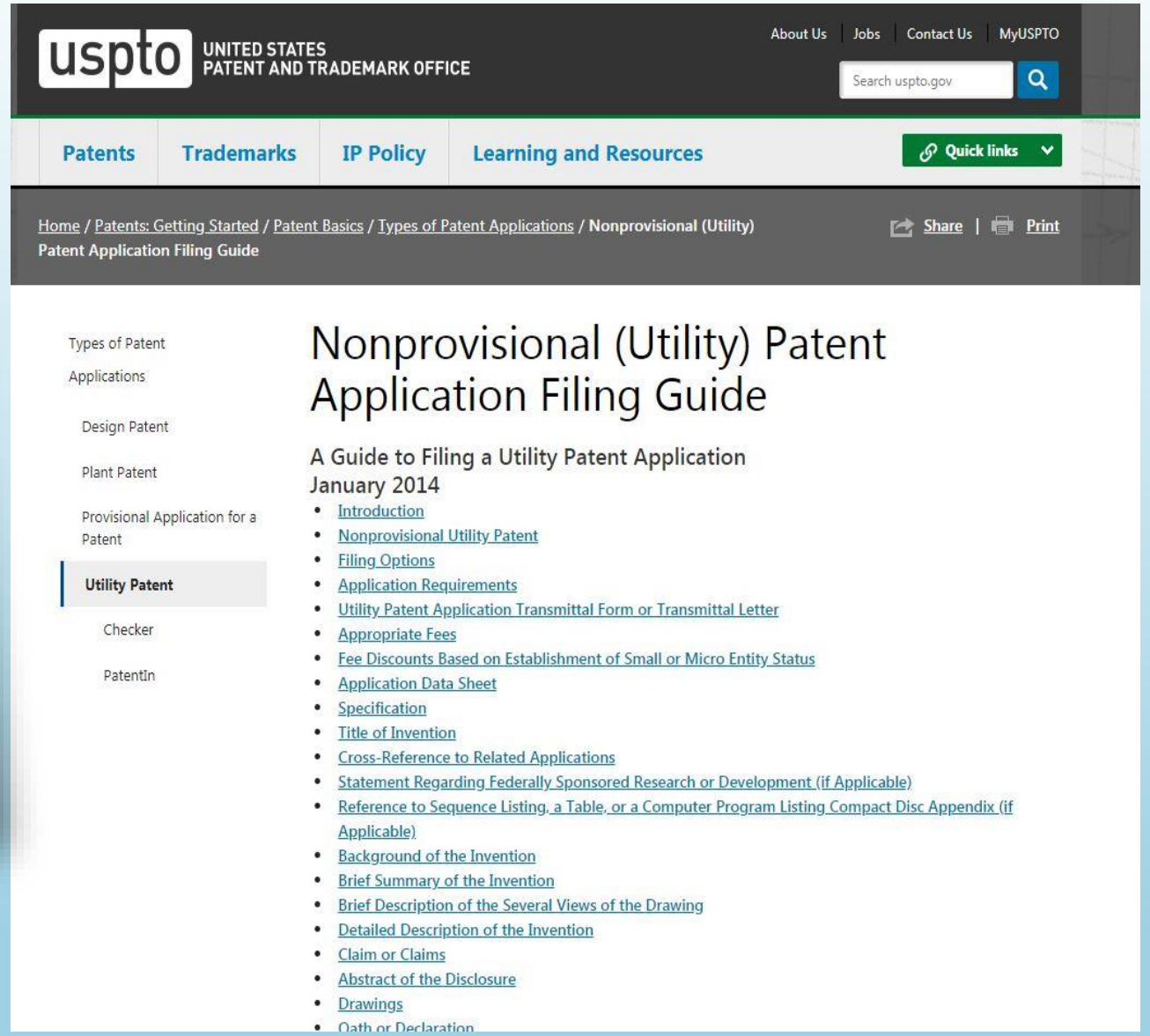

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Types of Patent Applications

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Plant Patent

Provisional Application for a Patent

Utility Patent

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Nonprovisional (Utility) Patent Application Filing Guide

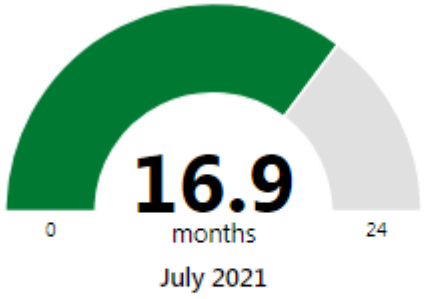
A Guide to Filing a Utility Patent Application
January 2014

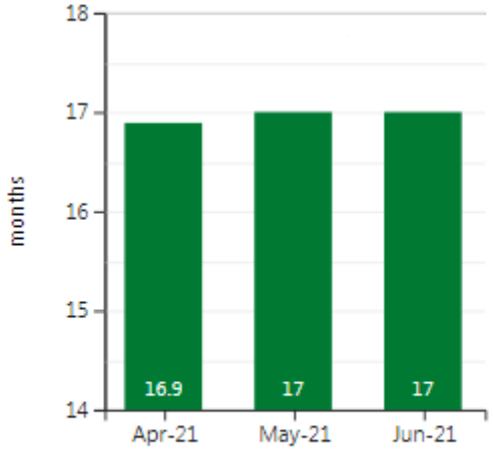
- Introduction
- Nonprovisional Utility Patent
- Filing Options
- Application Requirements
- Utility Patent Application Transmittal Form or Transmittal Letter
- Appropriate Fees
- Fee Discounts Based on Establishment of Small or Micro Entity Status
- Application Data Sheet
- Specification
- Title of Invention
- Cross-Reference to Related Applications
- Statement Regarding Federally Sponsored Research or Development (if Applicable)
- Reference to Sequence Listing, a Table, or a Computer Program Listing Compact Disc Appendix (if Applicable)
- Background of the Invention
- Brief Summary of the Invention
- Brief Description of the Several Views of the Drawing
- Detailed Description of the Invention
- Claim or Claims
- Abstract of the Disclosure
- Drawings
- Oath or Declaration

Solicitud de Patente

Patents Pendency Data July 2021

First Office Action Pendency





First Office Action pendency is the average number of months from the patent application filing date to the date a First Office Action is mailed by the USPTO. The term "pendency" refers to the fact that the application is pending or awaiting a decision. This measure of First Office Action Pendency includes the time until a first action by the USPTO, as well as any time awaiting a reply from an applicant to submit all parts of their application. The first action pendency number displayed, measured in months, is the average for all applications that have a First Office Action mailed over a three-month (one quarter) period.

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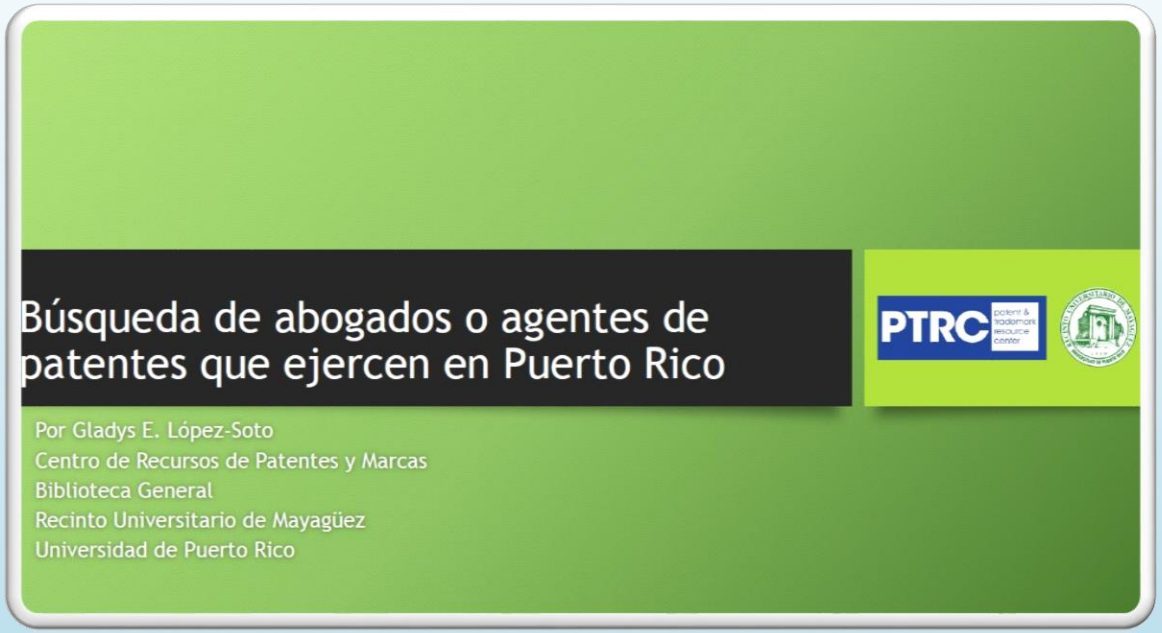
Patents Pendency



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Clinica de Asistencia Legal UPRRP

Oficina de Propiedad Intelectual y Transferencia de Tecnología , UPRM

Asistencia y ayuda

Patentes

- Requiere registro o solicitud de Patente
- Protección 20 años para utilidad y plantas, 14 años para diseño
- Si tiene el registro tiene más posibilidades de prevalecer en los tribunales

TM ®
© SM

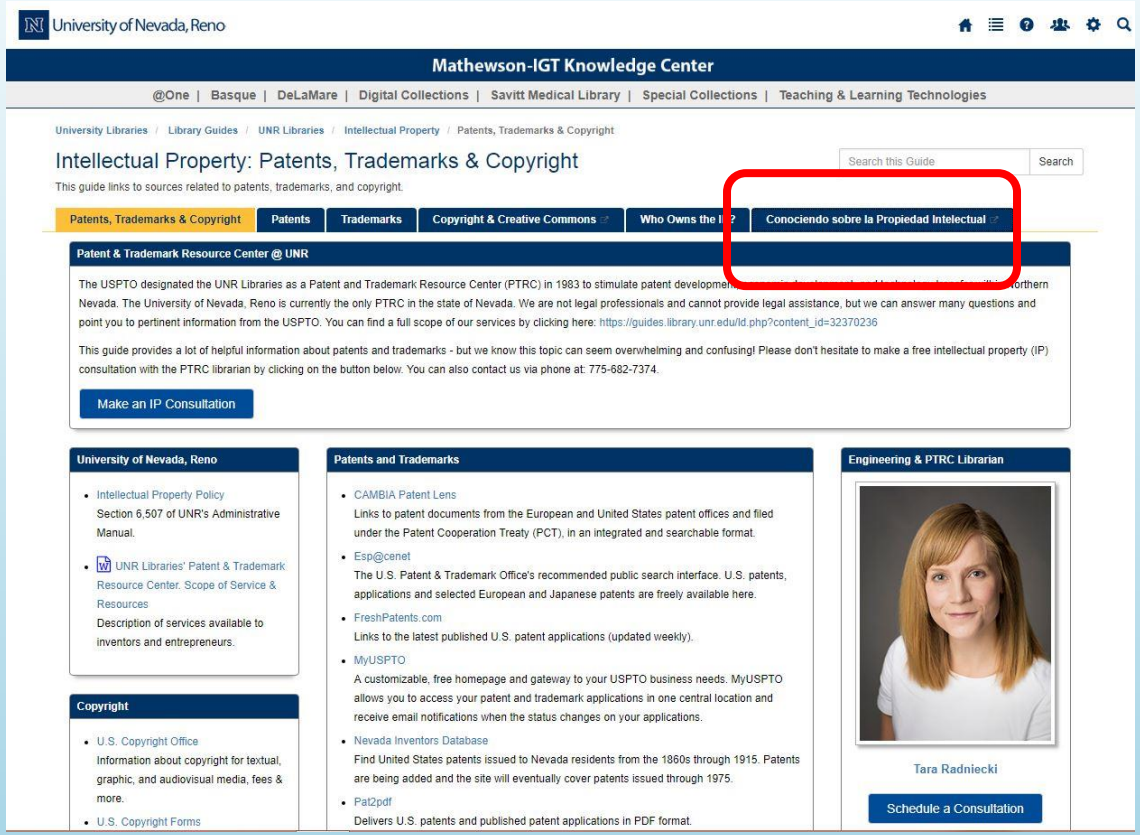
Marcas

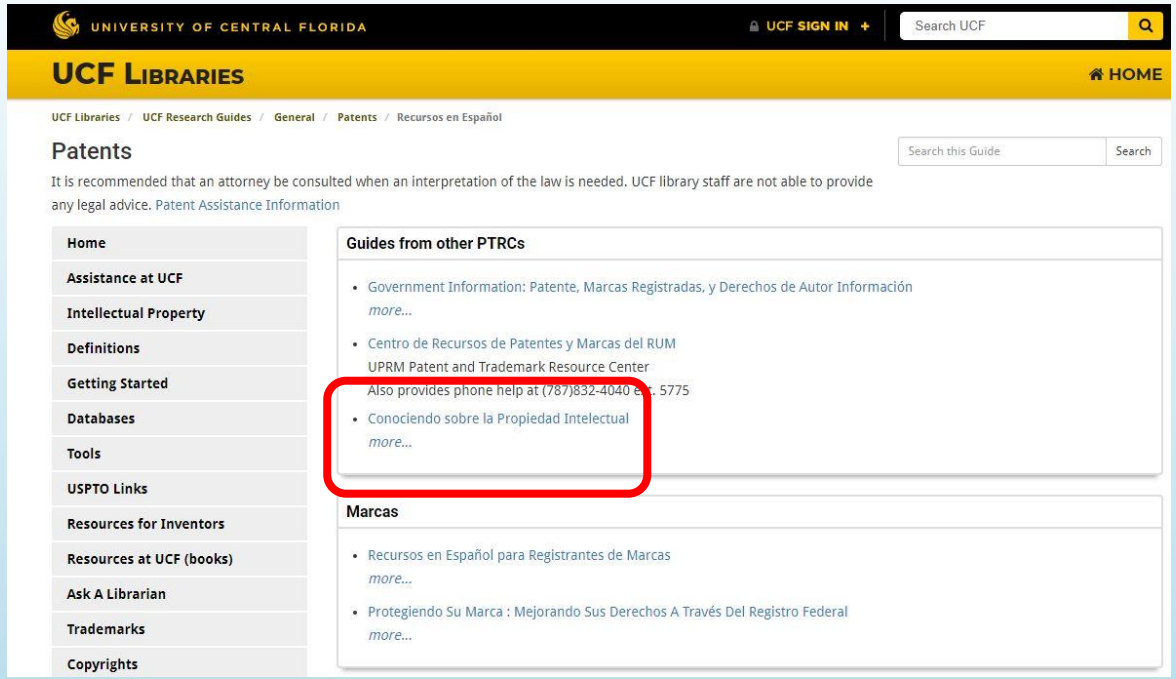
- Para poder utilizar la ® require registro
- Protección de 10 años renovable
- SM y TM no requiere registro
- Si tiene el registro tiene más posibilidades de prevalecer en los tribunales

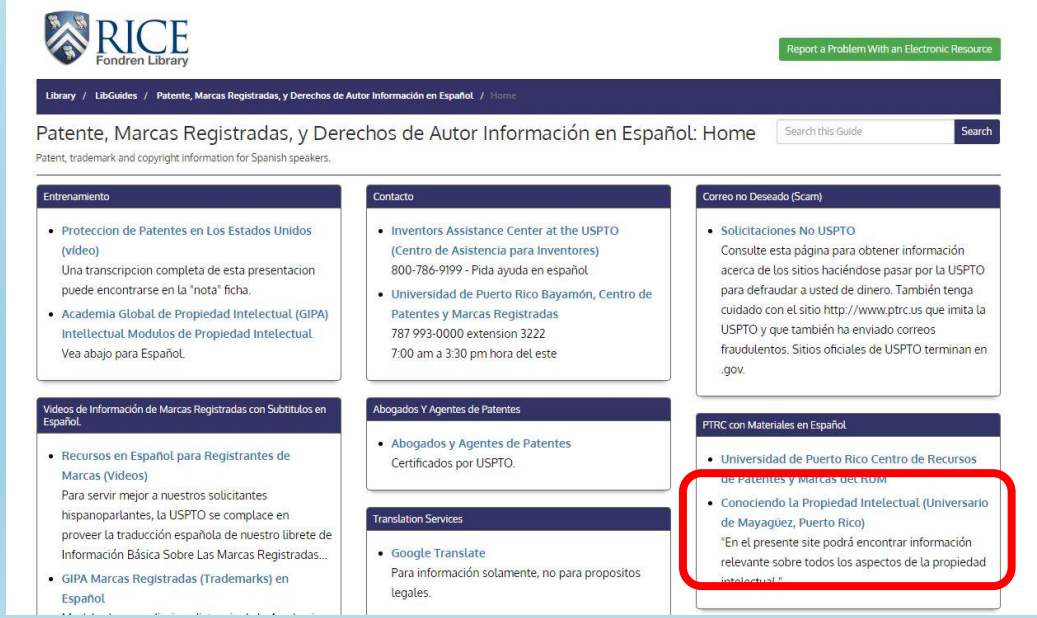
Derechos de autor

- Protección automática
- Protección por la la vida del autor más 70 años luego de su muerte
- Si tiene el registro tiene más posibilidades de prevalecer en los tribunales

Podrá encontrar más información en español en la página [Conociendo sobre la Propiedad Intelectual]

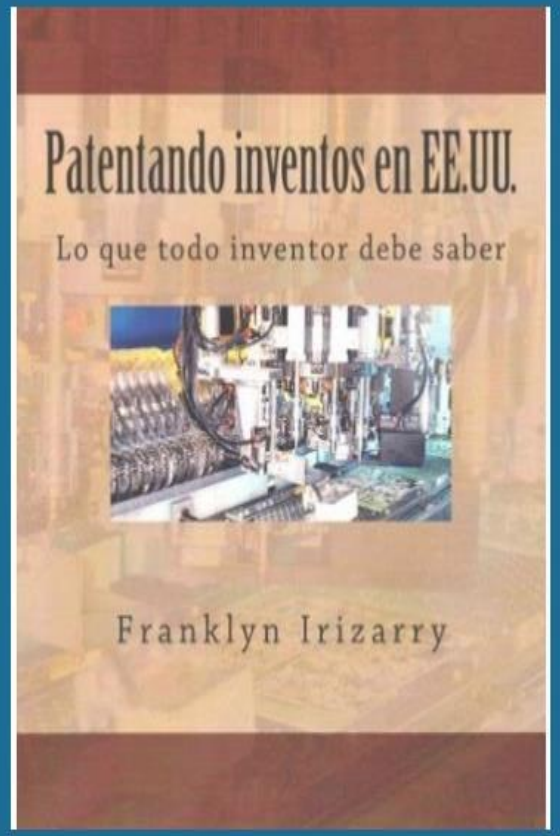




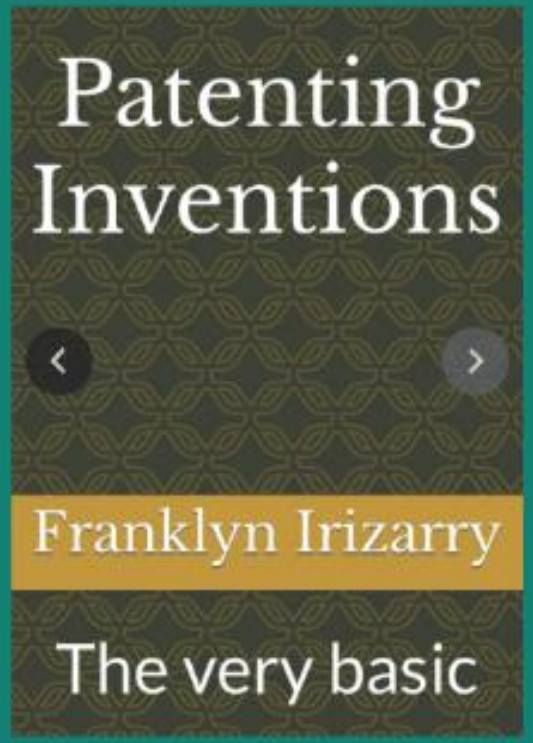


Universidades que comparten

Libro: Patentando inventos en Estados Unidos: Lo que todo inventor debe saber



Patenting Inventions: The very basic



Propiedad intelectual 101

6 de octubre de 2021 ▪ 1–2:00 p.m. ET

¿Desea familiarizarse con las patentes, las marcas registradas, los derechos de autor, y los secretos comerciales? De ser así, le invitamos para que aprenda acerca de los fundamentos básicos de la propiedad intelectual (PI) y las formas potenciales de proteger sus innovaciones durante su transición de una idea al producto.

October			2021
5	Trademark Basics Boot Camp, Module 1: Fundamentals	Virtual	2:00 PM ET
★6	Propiedad intelectual 101	Virtual	1:00 PM ET
7	Innovators and entrepreneurs: Learn about IP basics and helpful resources	Virtual	12:00 PM ET
12	Trademark Basics Boot Camp, Module 2: Registration process overview	Virtual	2:00 PM ET
13	2021 Hispanic Innovation and Entrepreneurship Program	Virtual	1:00 PM ET
★13	Recursos útiles para inventores y emprendedores	Virtual	1:00 PM ET
19	Trademark Basics Boot Camp, Module 3: Searching	Virtual	2:00 PM ET
★20	Fundamentos básicos de las patentes	Virtual	11:00 AM ET
20	Meet the Patent Experts: Class Four	Virtual	12:30 PM CT
26	Trademark Basics Boot Camp, Module 4: Application requirements	Virtual	2:00 PM ET
★27	Fundamentos básicos de las marcas registradas	Virtual	12:00 PM ET

https://www.uspto.gov/about-us/events

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OMPI (s.f.). Que es la Propiedad Intelectual. Recuperado de http://www.wipo.int/about-ip/es/

USPTO (2017). Getting started with patents. Recuperado de https://www.uspto.gov/patent

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