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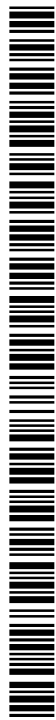


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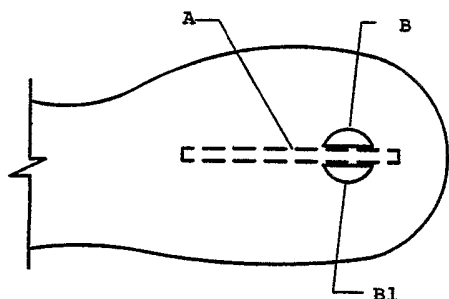
PCT

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(72) Inventor: WALKER, Lisa [US/US]; 4607 Frontier, Houston, TX 77041 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AU, CA, CN.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): European (AT, BE,
- Declarations under Rule 4.17:**
- as to the identity of the inventor (Rule 4.17(i)) for all designations
 - as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations
 - as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations
 - of inventorship (Rule 4.17(iv)) for US only
 - as to non-prejudicial disclosures or exceptions to lack of novelty (Rule 4.17(v)) for all designations
- Published:**
- with international search report
 - with a declaration as to non-prejudicial disclosures or exceptions to lack of novelty
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



(54) Title: ROTATIONALLY DETACHABLE LOW TO HIGH HEEL SHOES



(57) Abstract: A structure of a low to high heel shoe wherein a sole (figure 1) having two demicircular "D" shaped punched holes on either side of the shank it formed in the rear of the shoe area, to receive a bolt fitting (figure 2) having a bight slot (A) and two opposing distal members, fitting through the punched holes and over the shoe shank thereby adjoining to the heel.

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TITLE OF INVENTION

Rotationally Detachable low to high heel shoes

Inventor: Lisa Walker

FIELD OF INVENTION

The Rotationally Detachable low to high heel shoe facilitates a means to create individual style, regarding footwear, using a mode that is interchangeable and detachable. Providing a necessary means for change by the consumer in its unyielding desire to create individual style of shoes or boots in relation to clothing.

BACKGROUND OR RELATED ART

The following listed prior art has come to the attention of applicant. The prior art is believed relevant to, but patentably distinguishable from, the present invention and is being cited pursuant to Rule 91. A copy of each prior art publication is enclosed and its relevance is discussed below.

4,219,946 Shoe w/ an interchangeable heel, Uwe Baum, Sept. 2, 1980

4,363,177 Style convertible footwear, Leslie Boros, Dec. 14, 1982

4,400,893 Shoe w/ removably mounted heel, Nicola Musei, Aug. 30, 1983

5,477,625 Interchangeable shoe, Michael Goldsmith, Dec. 26, 1995

Baum creates his design with a rigid plate in the sole of the heel. This could potentially come away from the shoe because of the dissimilar materials, one of rigidity and one of flexibility. Also, much work and excess manufacture would constitute this design, leaving the cost of the product exorbitant. My invention solves this problem due to the use of conventional materials in making the shoe, there are no pieces, which could come away

from the shoe, and the easy motion of rotating the heel on and off serves the consumer with a very low change-over time.

Boros creates a similar design to that of Baum having the added cutout and insertion of a square like notch and indentation mounted to the heel and shoe respectively. There is a notch like protrusion, which could break off during normal wear. This leaves the design unfavorable. The addition of an extra pin like feature leaves the design unsightly with multiple parts to keep inventory of. And also creates a time consuming style changeover. My invention uses no protrusions, which could break off during normal wear and have no extra pieces which could become lost, and the easy motion of rotating the heel on and off serves the consumer with a very low change-over time.

Musei uses a small, slim screw that one must insert down through the sole and into the heel with an additional tool. This design is also flawed due to the small screw, which will split from the heel because of direct pressure by wearer, during normal wear. The design is mostly time consuming for consumer. In addition, he uses a semi-rigid plastic sole that is unmanageable for lowering the heel. My invention uses a very thick bolt-fitting that could not potentially break, there are no tools needed to change heels, and the easy motion of rotating the heel on and off serves the consumer with a very low change-over time.

Goldsmith created a design totally unstable and unsightly. This design uses rubber which is extremely flexible lending no support to the wearer. An added inconvenience is the nuisance of a strap that purportedly secures the heel. This strap is objectionable due to the apparent volatility of movement from normal wear. The strap provides easy disengagement of the wearer from the shoe during normal wear. My invention solves these problems by creating a conventional looking shoe using the conventional shoemaking materials, already in use and the easy motion of rotating the heel on and off serves the consumer with a very low changeover time.

Rotationally Detachable Low to High Heel ShoeDETAILED DESCRIPTION OF THE INVENTION

1 Referring to the drawings for a skilled artisan to manufacture and give
2 a layperson a definitive narrative, **FIG 1** shows a view of the shoe sole area
3 and punched "D" shaped holes **B** and **B1** near the back of the shoe where the
4 heel of the wearer will rest. **FIG 3** and **FIG 4** shows a view of the back of a
5 completely constructed rotationally detachable low to high heel show with the
6 bolt fitting **2** bonded to the shoe sole **FIG 1**, and a view of the injection
7 molded shoe heel which will adjoin with the bolt fitting **2** by a simple
8 rotation, connection the two.
9

11 The shoe sole **FIG 1** is made of conventional materials; preferably
12 leather. By reference, the shoe sole comprises two "D" shaped punched **B**
13 and **B1** in juxtaposition forming a backward "D" shape and a forward "D"
14 shaped at either side of the shoe's shank **A**, nearing the back of the sole area.
15 It is possible for the punched holes to be rounded or squared, however for the
16 aesthetic appeal of a finished product the "D" shape is preferred due to its
17 corresponding shape to the bolt fitting's opposing distal ends **C** and **C1**.
18
19

20 To form a complete shoe sole **FIG 3** a male threaded bolt-fitting **FIG**
21 **2** must pass through the two "D" shaped punched holes **B** and **B1**. A bolt
22 fitting in **FIG 2** shows a bight slot **D** and two opposing distal ends **C** and **C1**.
23 Bolt fitting **FIG 2** is straddled over the shank **A** and through the two "D"
24 shaped punched holes **B** and **B1** which is permanently bonded using glue or
25 other fastening options. It is preferable for the bolt-fitting **FIG 2** to be
26 manufactured of rigid plastic or polymer.
27
28

29 The embodiment of a complete shoe sole **FIG 3** with the shoe heel
30 **FIG 4**, includes an injection molded shoe heel having female threads to
31 accept the bolt-fitting **FIG 2** and its two opposing distal ends **C** and **C1**. The
32 shoe heel **FIG 4** will be tapped having female threading with a downward
33 circular fashion or countersunk depression so that the bolt fitting **FIG 2** and
34
35
36
37

38 its opposing distal ends C and C1 are oriented inside the shoe heel joining
39 thereto. Preferably, this threading will remain at a static measurement after
40 the injection mold has been obtained. Finding the longitudinal axis extending
41 through the sole where the "D" shaped holes B and B1 will remain static
42 allowing the connection of a bolt fitting FIG 2 and shoe heel FIG 5. One
43 skilled in mathematics or engineering will be able to obtain such
44 measurement without difficulty.

45 FIG 6 shows a top sand side view of the thin flat horizontally rounded
46 head of the bolt-fitting FIG 2, which will cover a generous area of the shoe
47 sole FIG 1, after the bolt fitting FIG 2 is permanently affixed to shoe sole
48 FIG 1. The rounded head FIG 6 is preferred as opposed to squared or other
49 geometric shape. By rotating the shoe heel FIG 6 clockwise onto the bolt
50 fitting FIG 2 until rotation is stopped, a complete shoe is read for wear.
51 Conversely, by rotating the shoe heel FIG 4 counter clockwise until the shoe
52 heel is disjoined from the shoe sole FIG 3 and exposing the bolt fitting FIG 2
53 will provide the wearer with a new option for joining a second differently
54 styled shoe heel FIG 4.

55 Figures 2- bolt fitting and 4- heel, may be formed of a rigid plastic or
56 similar material.

57 It is understood that for adjoining and disjoining, only the heel
needs rotation.

CLAIMS**I Claim:**

1. A low to high heel shoe or boot with a composition of:
 - a shoe sole having in a heel portion a backward "D" shape and forward "D" shape punched hole, said punched holes having juxtaposition on either side of shank near a heel portion of said shoe sole,
 - a bolt fitting permanently bonded to said shoe sole, said bolt fitting having a bight and two threaded opposing distal ends, said opposing distal ends passing through and straddling said "D" shaped punched holes of said shoe sole,
 - a rotationally-detachable shoe heel, said shoe heel having downwardly driven threads
2. A shoe or boot of composition in claim 1, wherein said bolt fitting has a generally flat horizontally rounded head covering a generous portion of said shoe sole.
3. A shoe or boot of composition in claim 1, in which said "D" shaped punched holes corresponds to the periphery measurement of said opposing distal ends of said bolt fitting so as to allow passage of said opposing distal ends.
4. A shoe or boot of composition in claim 1, wherein said threads are generally atop said shoe heel, extending in a downward circular fashion making a cavity such that receives said opposing distal ends of said bolt fitting.
5. A shoe or boot of composition in claim 1, in which the circumference of said bolt fitting distal ends measure smaller to said threads of said shoe heel.
6. A shoe or boot of composition in claim 1, in which said shoe heel is injection molded.

FIG. 1

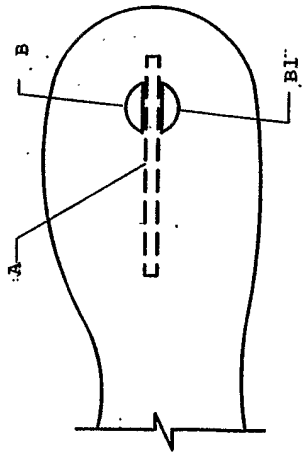


FIG. 2



FIG. 3

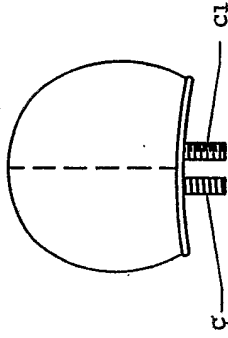


FIG. 4

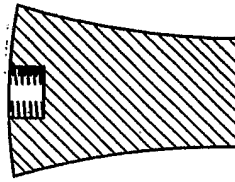


FIG. 5

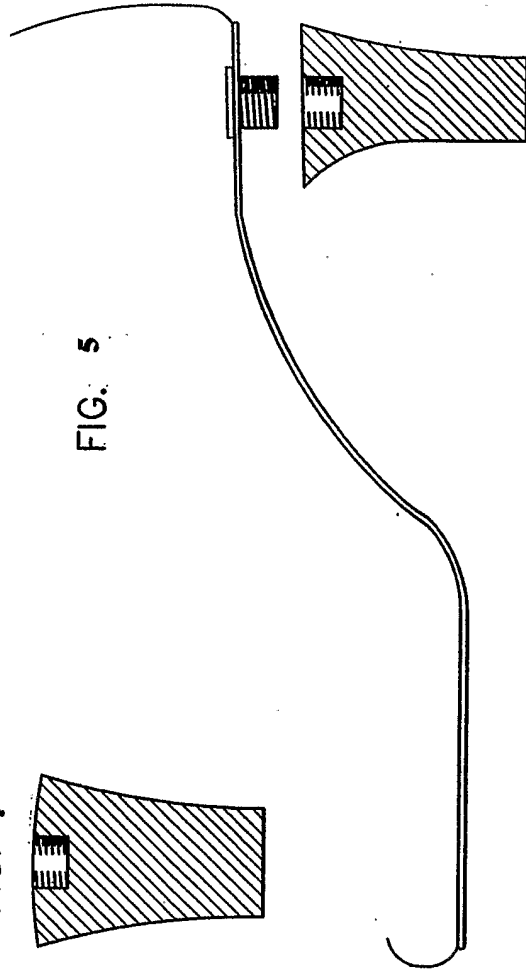


FIG. 6



Box No. VIII (v) DECLARATION: NON-PREJUDICIAL DISCLOSURES OR EXCEPTIONS TO LACK OF NOVELTY
The declaration must conform to the standardized wording provided for in Section 215; see Notes to Boxes Nos. VIII, VIII (i) to (v) (in general) and the specific Notes to Box No. VIII (v). If this Box is not used, this sheet should not be included in the request.

Declaration as to non-prejudicial disclosures or exceptions to lack of novelty (Rules 4.17(v) and 51bis.1(a)(v)):

Declaration as to non-prejudicial disclosures or exceptions to lack of novelty

in relation to this international application was disclosed as follows:

Kind of disclosure: Publication, Patent
date of disclosure: 10-14-2003
title : Rotationally Detachable low to high heel shoes
place of disclosure: U.S.P.T.O

this declaration is made for the purposes of all designations indicated.

This declaration is continued on the following sheet, "Continuation of Box No. VIII (v)".

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/02496

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A43B 21/36
 US CL : 36/100, 42

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 36/100, 42, 36R, 41, 15, 76R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 NONE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,631,570 B1 (WALKER) 14 October 2003 (14.10.2003), See whole reference.	1-6
A	US 6,442,871 B2 (DOERER et al) 03 September 2002 (03.09.2002), See whole reference.	1-6
A	US 5,581,910 A (LEWIS) 10 December 1996 (10.12.1996), See whole reference.	1-6
A	US 5,477,625 A (GOLDSMITH et al) 26 December 1995 (26.12.1995), See whole reference.	1-6
A	US 4,400,893 A (MUSCI) 30 August 1983 (30.08.1983), See whole reference.	1-6
A	US 4,363,177 A (BOROS) 14 December 1982(14.12.1982), See whole reference.	1-6
A	US 4,272,897 A (PONCE) 16 June 1981 (16.06.1981), See whole reference.	1-6
A	US 4,219,946 A (BAUM) 02 September 1980 (02.09.1980), See whole reference.	1-6
A	US 2,937,461 A (TRELA) 24 May 1960(24.05.1960), See whole reference.	1-6



Further documents are listed in the continuation of Box C.



See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer <i>Sharon H. Greene for</i> Marie Patterson Telephone No. 703-308-1148

INTERNATIONAL SEARCH REPORT

PCT/US04/02496

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2,656,621 A (HOFFMANN) 27 October 1953 (27.10.1953), See whole reference.	1-6