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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: SOLE UNIT FOR FOOTWEAR AND FOOTWEAR INCORPORATING SAME

(57) Abstract: The present invention discloses a sole unit for shoes, sandals, boots, and other articles of footwear. The sole unit comprises at least one spring unit having at least a top wall and a bottom wall that define an opening to allow the top and bottom walls to converge under force, absorbing energy on impact and releasing energy on rebound. Variations in the longitudinal profile, transverse profile, spring-wall thickness, and spring-wall shape permit control over spring force in response to compression. A spring unit may further comprise one or more dampeners to modify the energy-storing properties of the spring unit. A spring unit may further comprise one or more bumpers that come into contact at predetermined distances when compressing the spring unit, to further modify the dynamic response of the spring under a load.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/33102

A. CLASSIFICATION OF SUBJECT MATTER

IPC (8): **A43B 13/28** (2006.01)

USPC: 36/27,28

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. : 36/27,28,7.8,29

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,628,128 A (MILLER et al) 13 May 1997 (13.05.1997), see the entire document.	1,2,4,5,10,11,13,14,16
X	US 5,822,886 A (LUTHI et al) 20 October 1998 (20.10.1998), see the entire document	1,2,10,11,13,14,16
X	US 6,311,414 B1 (KITA) 06 November 2001 (06.11.2001), see the entire document.	1,2,4,5,10,13,14

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:		
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"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
"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	"&"	document member of the same patent family

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/33102

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of any additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1,2,4,5,10,11,13,14 and 16

- Remark on Protest**
- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
 - The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
 - No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/33102

BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In order for more than one species to be examined, the appropriate additional examination fees must be paid. The species are as follows:

Species I: figures 1A-1D
Species II: figures 3A-3C
Species III: figure 2B
Species IV: figures 4-6,12
Species V: figure 18
Species VI: figures 14A-14E.

The claims are deemed to correspond to the species listed above in the following manner:

Species I: claim 3
Species II: claims 2,4,5
Species III: claims 6,18,21
Species IV: claim 7
Species V: Claims 12,17,19,20
Species VI: claim 15

The following claim(s) are generic: 1,10,11,13,14,16.

The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons: There is no special technical feature in as much as the generic claim is anticipated by prior art: Luthi '886,Kita '414 and Miller '128.