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(54) **ROD-LIKE SHOETREE**

(57) Comprising a hollow rod (1) fitting loosely inside a tube (2) which has a blind end in which is provided a housing (3) of diameter similar to the inner diameter of the hollow rod (1), there being housed inside the tube (2) an elastic element (4) provided with conical ends (5); in

such a way that these latter are partially introduced into the inside of the hollow rod (1) and of the housing (3), where they become stuck. In addition, the accessible ends of the hollow rod (1) and of the tube (2) can be fitted with stops. Figs. 1 and 2.

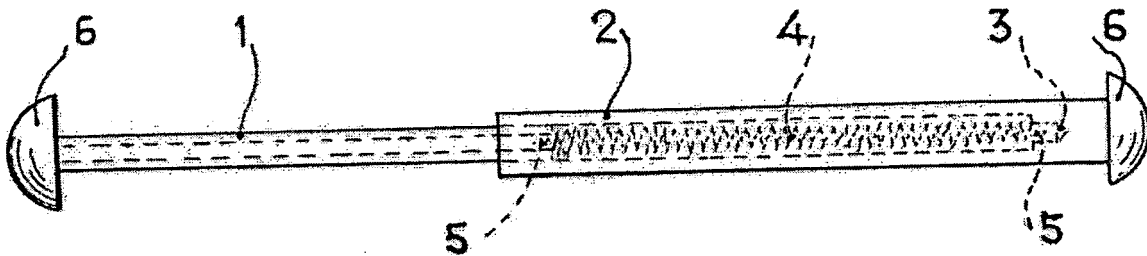


FIG. 1

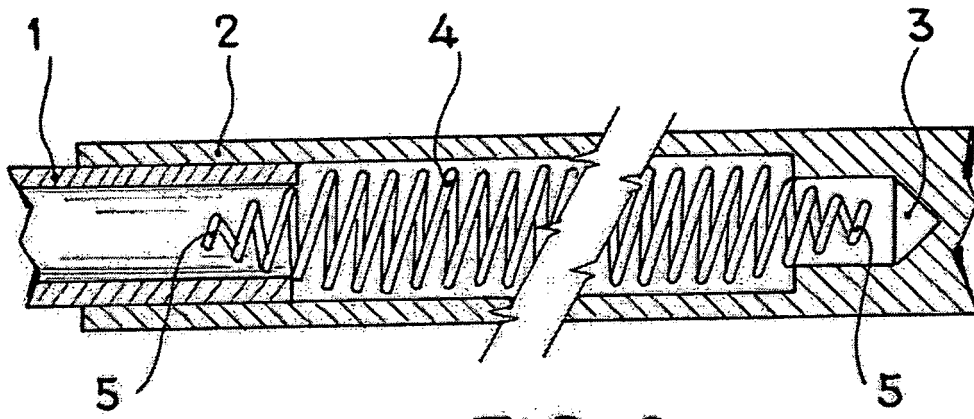


FIG. 2

Description

[0001] The present invention relates to a very simplified and low-cost shoe-tree, permitting it to be supplied free with the new shoe.

Background of the invention

[0002] Shoe-trees are known comprising a toecap and a heel of large volume, joined by a spring housed in a telescopic mechanism. In this way, the shoe keeps its shape, especially in its front part, preventing its deformation when not in use. This type of device is sold independently from the shoe since it is relatively expensive.

[0003] In new shoes, this same phenomenon of deformation occurs prior to their being sold. In order to prevent this, shoes are often fitted with a device that is nothing more than a simplified shoe-tree and which is known in the sector as "sticks". This name from the fact that they actually comprise a wooden or plastic rod which is manually bent in order to adapt it to the different sizes of footwear. This operation presents a risk for the worker and is in fact the cause of numerous minor accidents. Moreover, the process of manually bending the rod does not allow any precise adjustment of its length which, together with the fact that the ends of the rod are splintered and could damage the shoe, means that a plastic tip has to be used, padded with cotton, foam rubber or similar material in order to adjust the length and protect the shoe from the deteriorated ends of the rod. The applicant has found that, even though the material cost of the "stick" prepared like this is low, the handling time by the worker is not, and the device can end up having a total cost that is far from negligible.

[0004] With the aim of solving the above problem, telescopic "sticks" have been conceived, comprising a rod and a tube, with a small spring inside. This design avoids having to adjust the length of the rod by bending it, and the cost is reduced. Unfortunately, the absence of any element that would hold the different parts of the unit together means that, although this device is adequate when fitted by an expert operator, this is not the case when the end user tries to use it as a specific shoe-tree during the entire life of the shoe, since the small spring is extremely easy to lose.

[0005] Consequently, an aim of the present invention is to provide a simplified shoe-tree which can be automatically adapted to various measures.

[0006] Another aim of the present invention is to provide a simplified shoe-tree which does not need to be complemented with protection elements for the ends, which would have to be adjusted for each case.

[0007] A further aim of the present invention is to provide a simplified shoe-tree which can be reused over and over again without any risk of mislaying any of its parts.

[0008] And finally, another aim of the present invention is to provide a simplified shoe-tree which complies with the above conditions and also has a low cost so that it

can be offered free with the new shoe.

Description of the invention

5 **[0009]** In order to achieve the proposed aims, a stick type shoe-tree has been conceived comprising a hollow rod fitting loosely inside a tube, with one end blind and containing a housing of smaller diameter than the inside of the tube. An elastic element with conical ends is provided inside the tube, between the housing contained in 10 the blind end thereof and the hollow rod; in such a way that the conical ends of the elastic element are introduced and become stuck both inside the interior diameter of the hollow rod and in the housing in the blind end of the tube. 15 In this way the three elements, hollow rod, tube and elastic element, become integral with each other, preventing any one of them from becoming lost.

[0010] The elastic element will advantageously be a steel spring, though a solid piece can equally be used 20 made of a sufficiently flexible plastic or cellular rubber.

[0011] The accessible ends of the hollow rod and of the tube can be provided with thickenings to protect the shoe, though such pieces will preferably be solid in revolution, of small section, and able to receive separate 25 simple stops of a certain volume by being inserted under pressure into their ends.

Brief description of the drawings

30 **[0012]** In order to complement the foregoing description, and with the aim of aiding a better understanding of the characteristics of the invention, a detailed description is going to be made of a preferred embodiment, on the basis of a set of plans accompanying this specification and in which, in an orientative and nonlimiting way, the 35 following have been represented.

Figure 1 shows an elevation view of the inventive device.

40 Figure 2 shows a partial cross-section, in elevation, of the inventive device.

[0013] In the above figures, the numerical references refer to the following parts and elements:

- 45
1. Hollow rod
 2. Tube
 3. Housing
 4. Elastic element
 - 50 5. Conical ends of the elastic element (4)
 6. Stops

Detailed description of a preferred embodiment

55 **[0014]** As can be seen in figures 1 and 2, the inventive device comprises a hollow rod (1) fitting loosely inside a tube (2) which has a blind end in which is provided a housing (3) of a diameter similar to the inner diameter of

the hollow rod (1).

[0015] An elastic element (4) with conical ends (5) is provided inside the tube (2), between the hollow rod and the blind end; in such a way that the conical ends (5) are partially introduced into the inside of the hollow rod (1) and of the housing (3) present in the tube (2), where they become stuck. As of that moment, the three elements remain integral with each other.

[0016] The elastic element (4) will advantageously be a spring, though a solid piece made of a plastic material of adequate elasticity can equally be used, for example cellular rubber.

[0017] Separate stops (6) are inserted into the accessible ends of the device to protect the shoe.

[0018] With regard to its industrial embodiment, there are certain considerations that are worth while making.

[0019] The length of the elastic element (4) can be considerable with respect to the tube (2) since, although it is deformed transversally during its compression, it will always remain contained inside the tube (2). In this way, a great variability of measures can be ensured with a single set of pieces.

[0020] It will be economically advantageous to produce the hollow rod (1) and the tube (2) by means of plastic injection. But they could equally well be made of wood with a small cost increase and a considerably more attractive appearance.

[0021] Obviously, the position of the elastic element (4) inside the tube (2) is not critical to the essence of the invention, though if it is wished to cover the largest possible range of measures and for the hollow rod (1) to be sufficiently guided, then it would be advantageous if the elastic element (4) could reach as far as the blind end of the tube (2).

Claims

1. Stick type shoe-tree, **characterised by** comprising a hollow rod (1) fitting loosely inside a tube (2) which has a blind end in which is provided a housing (3) of diameter similar to the inner diameter of the hollow rod (1), there being housed inside the tube (2) an elastic element (4) provided with conical ends (5); in such a way that these latter are partially introduced into the inside of the hollow rod (1) and of the housing (3), where they become stuck.
2. Stick type shoe-tree, according to claim 1, **characterised in that** the elastic element (4) is a spring.
3. Stick type shoe-tree, according to claim 1, **characterised in that** separate stops (6) are inserted under pressure inside the accessible ends of the hollow rod (1) and of the tube (2).

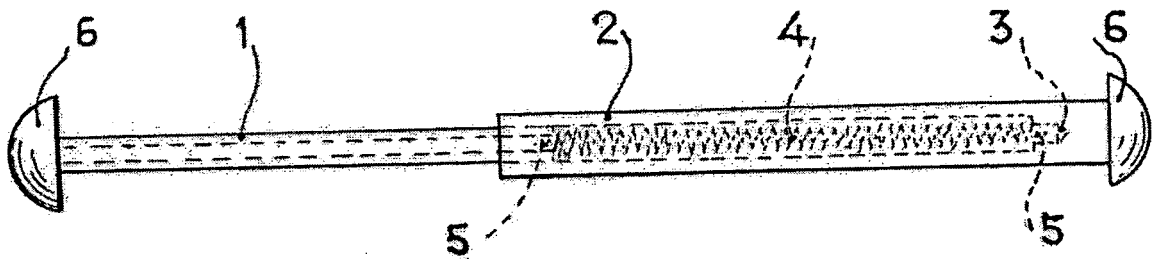


FIG. 1

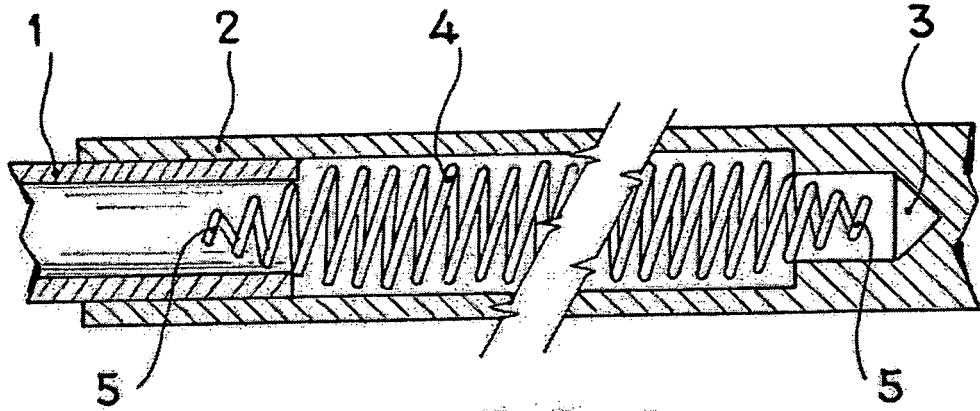


FIG. 2

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES 2008/000457

A. CLASSIFICATION OF SUBJECT MATTER		
A43D 3/14 (2006.01)		
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)		
a43d		
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)		
CIBEPAT,EPODOC,WPI,PAJ		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 597888 A (WORTHINGTON) 11.12.1945, the whole document.	1-3
A	US 1746610 A (SCHOSHUSEN) 11.02.1930, the whole document.	1-3
A	US 2275072 A (BRADSHAW) 16.04.1940, the whole document.	1-3
A	GB 399131 A (GÜNTHER) 28.09.1933, column 2, lines 54-63; figures.	1-3
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> 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.		
"E" earlier document but published on or after the international filing date		
"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)	"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
"O" document referring to an oral disclosure use, exhibition, or other means	"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 documents, such combination being obvious to a person skilled in the art
"P" document published prior to the international filing date but later than the priority date claimed	"&"	document member of the same patent family
Date of the actual completion of the international search	Date of mailing of the international search report	
29 October 2008 (29.10.2008)	(17/11/2008)	
Name and mailing address of the ISA/ O.E.P.M.	Authorized officer	
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Form PCT/ISA/210 (second sheet) (April 2007)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/ ES 2008/000457

Patent document cited in the search report	Publication date	Patent family member(s)	Publication date
GB 597888 A	05.02.1948	NONE	-----
US 1746610 A	11.02.1930	NONE	-----
US 2275072 A	03.03.1942	NONE	-----
GB 399131 A	28.09.1933	NONE	-----