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(54) **ROD-LIKE SHOE TREE**

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## 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.

**[0004]** 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.

**[0005]** 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.

**[0006]** FR 837 502 A shows a stick type shoe-tree comprising a rod fitting loosely inside a tube which has a blind end (due to a lid), there being housed inside the tube an elastic element.

**[0007]** Consequently, an aim of the present invention is to provide a simplified shoe-tree which can be automatically adapted to various measures.

**[0008]** 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.

**[0009]** 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.

**[0010]** 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

**[0011]** 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 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. 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.

**[0012]** The elastic element will advantageously be a steel spring, though a solid piece can equally be used made of a sufficiently flexible plastic or cellular rubber.

**[0013]** 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 simple stops of a certain volume by being inserted under pressure into their ends.

### Brief description of the drawings

**[0014]** 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 following have been represented.

Figure 1 shows an elevation view of the inventive device.

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

**[0015]** In the above figures, the numerical references refer to the following parts and elements:

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

### Detailed description of a preferred embodiment

[0016] 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).

[0017] 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.

[0018] 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.

[0019] Separate stops (6) are inserted into the accessible ends of the device to protect the shoe.

[0020] With regard to its industrial embodiment, there are certain considerations that are worth while making.

[0021] 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.

[0022] 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.

[0023] 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, **charac-**

**terised in that** separate stops (6) are inserted under pressure inside the accessible ends of the hollow rod (1) and of the tube (2).

### Patentansprüche

1. Einsteckbarer Schuhspanner, der einen hohlen Stab (1) umfasst, welcher lose in ein Rohr (2) gesteckt ist, an dessen geschlossenem Ende ein Gehäuse (3) angebracht ist, dessen Durchmesser etwa dem Innendurchmesser des Hohlstabs (1) entspricht, wobei im Inneren des Rohres (2) ein elastisches Element (4) untergebracht ist, das konische Enden (5) besitzt, die sich teilweise ins Innere des Hohlstabs (1) und des Gehäuses (3) einfügen und sich dort festsetzen.
2. Einsteckbarer Schuhspanner nach Anspruch 1, **dadurch gekennzeichnet, dass** das elastische Element (4) eine Spiralfeder ist.
3. Einsteckbarer Schuhspanner nach Anspruch 1, **dadurch gekennzeichnet, dass** voneinander getrennte Anschläge (6) unter Druck ausgehend von den zugänglichen Enden ins Innere des Hohlstabs (1) und des Rohrs (2) eingefügt werden.

### Revendications

1. Embauchoir de type bâtonnet, **caractérisé en ce qu'il** comprend une tige creuse (1) se logeant de manière lâche à l'intérieur d'un tube (2) qui a une extrémité aveugle dans laquelle est présent un logement (3) d'un diamètre similaire au diamètre interne de la tige creuse (1), et logé à l'intérieur du tube (2), il y a un élément élastique (4) doté d'extrémités coniques (5) ; de telle manière que ces dernières sont partiellement introduites à l'intérieur de la tige creuse (1) et du logement (3) où elles se retrouvent coincées.
2. Embauchoir de type bâtonnet selon la revendication 1, **caractérisé en ce que** l'élément élastique (4) est un ressort.
3. Embauchoir de type bâtonnet selon la revendication 1, **caractérisé en ce que** des arrêts séparés (6) sont insérés sous pression à l'intérieur des extrémités accessibles de la tige creuse (1) et du tube (2).

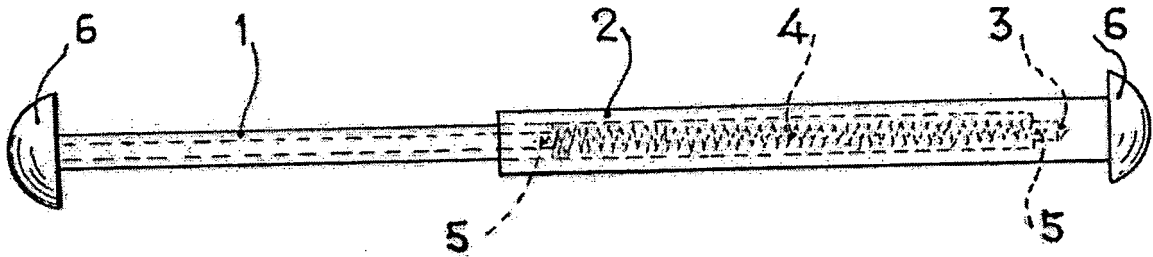


FIG. 1

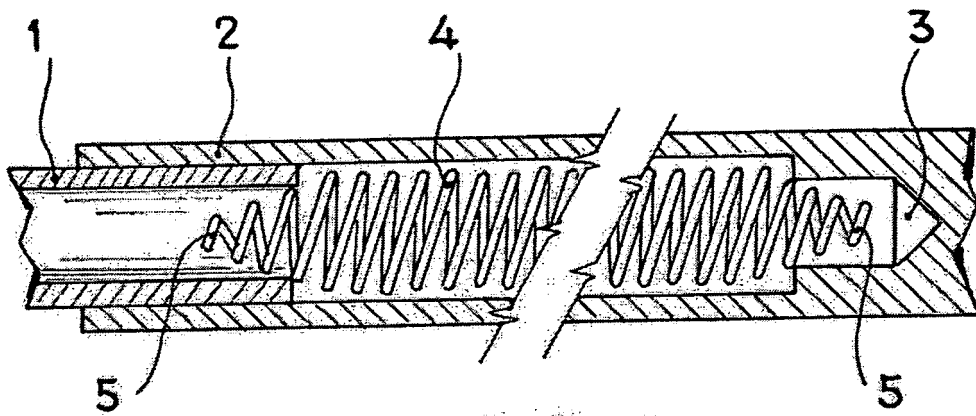


FIG. 2

**REFERENCES CITED IN THE DESCRIPTION**

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**Patent documents cited in the description**

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