(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 365 494 A2**

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **89830452.2**

(51) Int. Cl.5: **A43B 3/10**

(22) Date of filing: **18.10.89**

(30) Priority: **21.10.88 IT 63888**

(43) Date of publication of application:
25.04.90 Bulletin 90/17

(84) Designated Contracting States:
ES GR

(71) Applicant: **MENGHI SHOES di Menghi Emanuela**
Via Barca, 50 Zona Industriale
I-60025 Loreto (AN)(IT)

(72) Inventor: **Menghi, Emanuela**
Via Orti, 3
I-62100 Macerata(IT)

(74) Representative: **Baldi, Claudio**
Piazza Ghislieri, 3
I-60035 Jesi (Ancona)(IT)

(54) Slipper with upper bearing stirrups for attachment to the sole by means of a holding pin.

(57) This patent application for an industrial invention concerns a slipper composed of a sole molded in polyurethene or other similar material,upon which the upper is fixed by means of simple attachments in the form of pins threaded through stirrups created for this purpose on both longitudinal sides of the upper,said pins being pushed into and held within suitably shaped recesses situated on the sides of the sole.

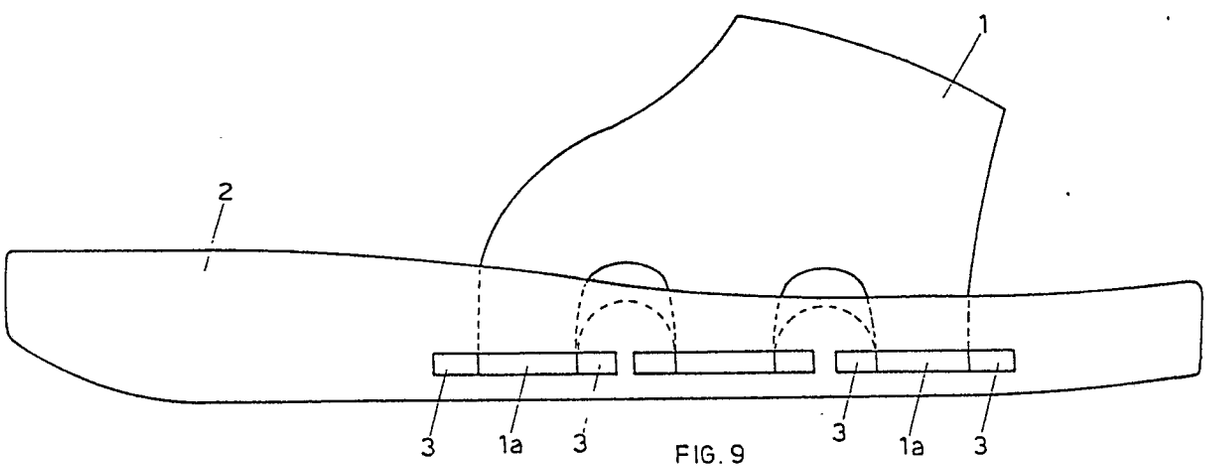


FIG. 9

EP 0 365 494 A2

DISCLOSURE

This patent application for an industrial invention concerns a slipper composed of a sole molded in polyurethane or other similar suitable material,upon which the upper is fixed by means of simple attachments in the form of pins threaded through stirrups created for this purpose on both longitudinal sides of the upper, said pins being pushed into and held within suitably shaped recesses situated on the sides of the sole.

The idea according to the invention has arisen from yet another attemptto reduce production costs for cheap slippers,usually made up of a molded base to which an upper is attached.The latter is often of the same material,having been produced by means of the same molding process and is composed of a cross-strip which fits across the front of the foot somewhere between the toes and the neck of the foot.

Considering the fact that the sole and upper of slippers made in this fashion are both produced by molding,with low industrial costs,the factor that has the greatest influence over the overall cost of the product is without doubt the assembly stage which often involves considerable use of time and labour,sometimes requiring specialised personnel.

In this regard,operators in the sector have put forward and are still proposing new technical solutions aimed at reducing manufacturing costs by continually simplifying the process of attachment of the upper to the sole.

In an attempt to obtain such a result, conventional means of attachment such as glueing,nailing and sewing were rejected immediately as these processes are characterised by their laboriousness,andat the same time,consideration was given to means of attachment that would allow the coupling of the parts by means of simple hooking procedure that could be effected rapidly and without specialised personnel.

The slipper according to the invention is made up of a molded polyurethane sole,close to the sides of which along the section to which the upper will be attached, two series of symmetrical opposing longitudinal slots are made,each of which open out lower down into cylindrical recesses which are also on a longitudinal axis and are hollowed out on the sides of the sole during molding.

In other words,during the molding process two series of symmetrical opposing longitudinal recesses are created on the two sides of the sole;said recesses lead up to the upper surface of the sole to longitudinal slots which are shorter than the underlying recesses, while a brief tract of the circular section of the latter is open to the outside,said tract being less than an arc of a half circmuference.

The upper used by the slipper according to the invention is characterised by the fact that on its longitudinal edges it possesses two series of longitudinal opposing stirrups made by doubling over and pinning a series of transversal tongues provided for this purpose as part of the shape of the upper.

The latter,therefore,has two longitudinal edges from each of which,at set intervals,the stirrups protrude and each stirrup is of such dimensions that it can easily fit into the abovementioned longitudinal slots made in the upper surface of the sole,and emerge from the longitudinal recesses below,situated on the sides of the sole.

The idea according to the invention provides for the attachment of the upper to the sole by means of suitable cylindrical pins of such dimensions that they fit exactly inside the aforesaid longitudinal recesses into which they are inserted after having been threaded through each stirrup and then pulled back into position from the upper in such a way that the stirrups after having been pushed out of the longitudinal recesses, are now pulled back inside them.

Bearing in mind that the width of each stirrup is less than the length of its respective recess,while the length of each pin is the same as that of its respective recess,it therefore becomes clear how,after having pulled the upper,it is possible to easily and rapidly attach the upper to the sole by means of the abovementioned pins which remain blocked within the series of recesses and prevent the stirrups from becoming unthreaded when they are pulled upwards.

For greater clarity of explanation,the description of the invention continues with the enclosed drawings included for illustrative and not limitative purposes,wherein:

-fig.1 is an axonometric projection of the upper used in the slipper according to the invention.

fig.2 shows one of the pins used in the attachment of the sole to the upper.

-fig.3 shows a side view of the molded sole used in the slipper according to the invention.

-fig.4 shows the molded sole used in the slipper according to the invention,seen from above.

fig.5 and 6 are sections of fig.4 along the planes V-V and VI-VI respectively.

-fig.7 is a section of the soe along a transversal plane, illustrating the position assumed by the upper in relation to the sole when the pins are threaded through each stirrup.

-fig.8 is a section of the sole along a trans-

versal plane illustrating the position assumed by the upper in relation to the sole once attachment has taken place.

-fig.9 shows a side view of the slipper according to the invention.

-fig.10 is the same view as figure 5 and shows the recesses that could be used in a different embodiment of the invention,underneath the sole rather than on the sides.

-figs.11,12,and 13 show other ways of hooking the pins to the shaped edges of the upper.

With reference to fig.1 the upper (1) is characterised by the fact that it bears,on both longitudinal sides,two series of opposing longitudinal stirrups (1a) created by doubling over a series of tongues (1b) which are then held in place by suitable means such as rivets,stitching or glueing and create a loop (1c) for each stirrup '1a).

With reference to figs.2,3,4,5,and 6,the sole molded in polyurethane or other similar material used for molding,possesses along its sides,for the tract along which the longotudinal edges of the upper (1) will fit,two symmetrical opposing series of cylindrical recesses (2a) the circular transversal section of which briefly opens to the outside for a tract that is less than an arc of a half circumference,as can be seen in fig.5.

On the upper surface of the sole (2) two opposing symmetrical series of slots (2b) are created during molding,positioned close to the sides,each of which opens out lower down into a corresponding recess (2a).

The length of each slot _2b) is slightly greater than the width of each stirrup (1a),but decidely less than the length of each recess (2a).

As shown in figs.3 and 4,each slot (2b) is separated from the adjacent slot by a division (2c), which,in its preferred embodiment,may be shaped as a half circumference arc and be lower than the slots (2a) so that the sole (2),when seen from above (see fig.4) appears to have been incised along its sides not by a series of separate longitudinal slots but by a long, continuous opening.

With reference to fig.2,the holding pins (3) are composed of cylindrical pivots of the same length and diameter as the recesses (2a),and are characterised by a central body (3a) of smaller diameter,the same length as the width of a stirrup (1a),in such a way that the thickness of each tongue (1a) is such that when added to the raduis of the central body (3a),the total of the two values is equalto the radius of the pin (3).

These dimensions were chosen with the precise aim of obtaining,once the pins (3) have been threaded through the loops (1c) of each stirrup (1a) (see fig.8) in such a way that the central body (3a) is centred in relation to said stirrup,a circular section of uniform diameter for the whole length of the pin and equal to the diameter of the recesses (2a) where the pins (3),inside their respective stirrups,can nest,as shown in fig.8.

It should be understood that still with reference to the same inventive concept,the recesses that hold the pin could be positioned on the undersurface of the sole,as shown in fig.10 which illustrates a recess (2a) created during the molding of the sole (2) on the undersurface of the latter.

It is equally evident that the transverse section of the recesses (2a) does not have to be circular,but could also be of another shape provided that it is suitable to contain and hold in place the accordingly shaped holding pins.

Still remaining within the same inventive concept, it would be possible to use a different system for attaching the pins (3) to the upper (1) without having to use stirrups (1a) made by doubling over and fixing in place the tongues (1b).

In fig.11 for example,it was imagined that the pins (3) were equipped with a longitudinal wing (30) attached to the shaped edges of the upper (1) by means of rivets (40).

In fig.12,on the other hand, it was imagined that the pins (3) were equipped with hooks (30a) to hook into corresponding loops (31a) provided for thi purpose along the shaped edges of the upper (1).

Finally,in fig.13,it was imagined that the pins (3) and the upper (1) were part of a single piece,in which case both pins and upper would be molded in plastic.

These and other possible variants of the various structural elements do not certainly deviate from the inventive concept in question not are they outside the patent's sphere of protection.

Claims

1) Slipper with upper bearing stirrups for attachment to the sole by means of holding pins,characterised by the fact that it is composed of:

- an upper '1) bearing on both longitudinal edges two series of opposing symmetrical stirrups (1a);
- a sole (2),molded in polyurethane or other similar material suitable for molding,which,along its sides, possesses two series of opposing symmetrical cylindrical recesses with a circular cross-section open to the outside for a brief tract of less than an arc of half-circumference,while on the upper surface of the sole (2),close to the sides,there are two series of opposing symmetrical longitudinal slots (2b) made during molding, each of which opens out lower down into a corresponding recess (2a);
- a series of attaching pins (3) made up of cylindrical pivots of the same length and diameter as

the recesses (2a),with central body (3a) of lesser diameter and equal in length to the width of each stirrup (1a) which,in turn, has a width slightly smaller than the length of the insertion slots (2b)

2) Slipper with upper bearing stirrups for attachment to the sole by means of holding pins,according to the previous claim,characterised by the fact that the stirrups (1a) are created by doubling over and fixing in place a series of tongues (1b),thus forming a loop (1c) through which the holding pin (3) is to be threaded, it having also been provided that the thickness of each tongue (1b) is such that added to the radius of the central body '3a) of the pin (3),the total of the two values is equal to the radius of the pin (3).

3) Slipper with upper bearing stirrups for attachment to the sole by means of holding pins,according to the previous claims,characterised by the fact that,in a further preferred of the invention,the recesses which house and hold firm the holding pins (3) are situated not on the sides of the sole (2) but on the undersurface of the sole in a position exactly below the longitudinal slots (2a).

4) Siipper with upper bearing stirrups for attachment to the sole by means of holding pins,according to claim 1),characterised by the fact that,in a different version of the invention,the pins (3) bear a longitudinal wing (30) intended to be fixed using rivets (40) to the shaped edges of the upper (1).

5) Slipper with upper bearing stirrups for attachment to the soe by means of holding pins,according to claim 1),characterised by the fact that the pins (3), in a further embodiment of the invention,are equipped with hooks (30a) to hook into corresponding loops (31a) provided for the purpose on the shaped edges of the upper (1).

6) Slipper with upper bearing stirrups for attachment to the sole by means of holding pins,characterised by the fact that the pins '3) are molded in plastic together with the upper (1) to form a single piece.

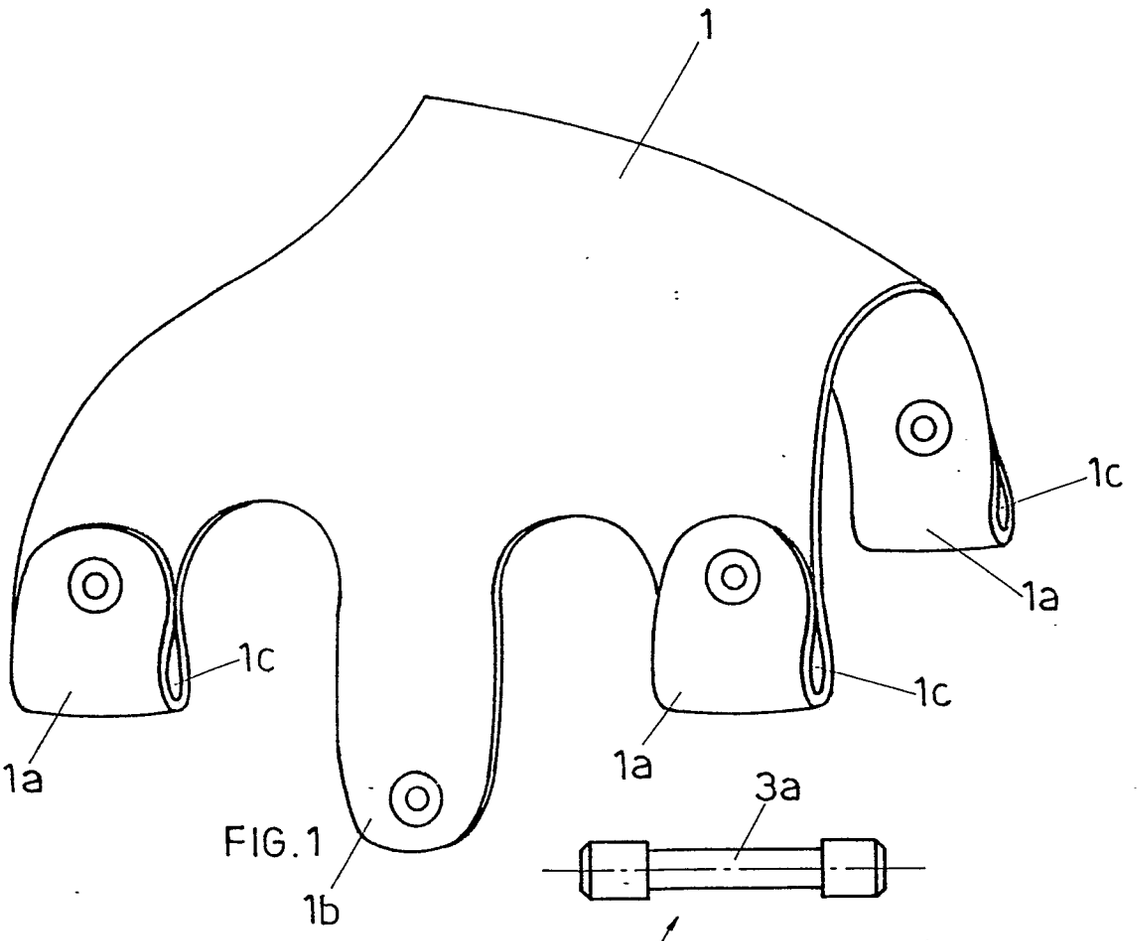


FIG. 1

FIG. 2

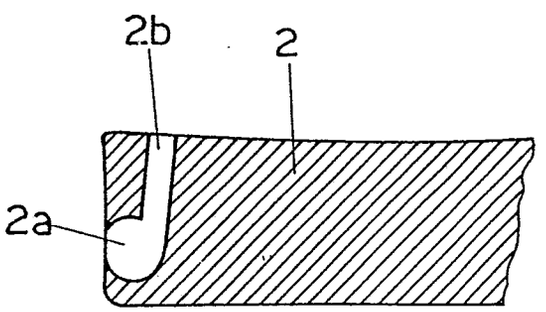


FIG. 5

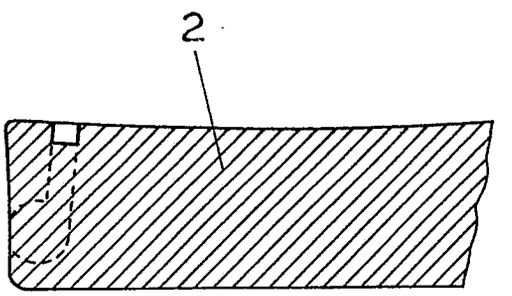


FIG. 6

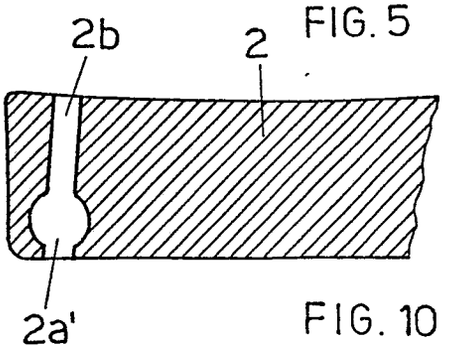


FIG. 10

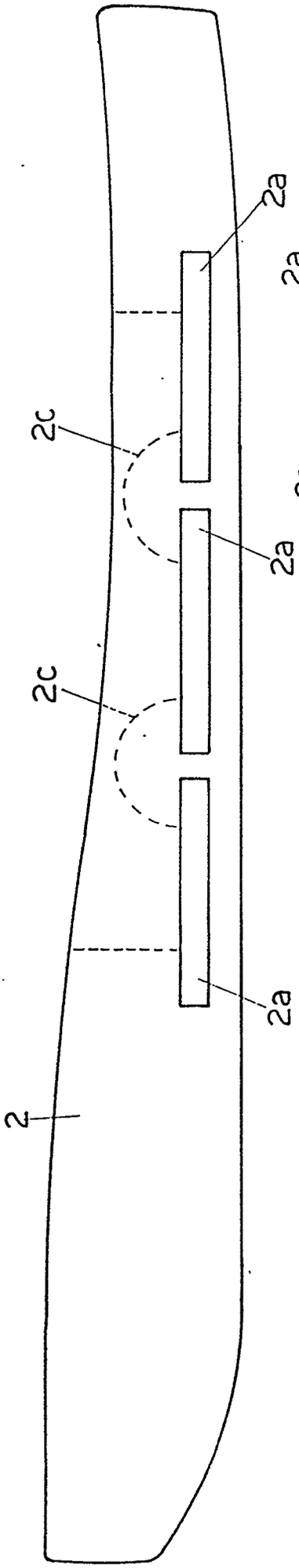
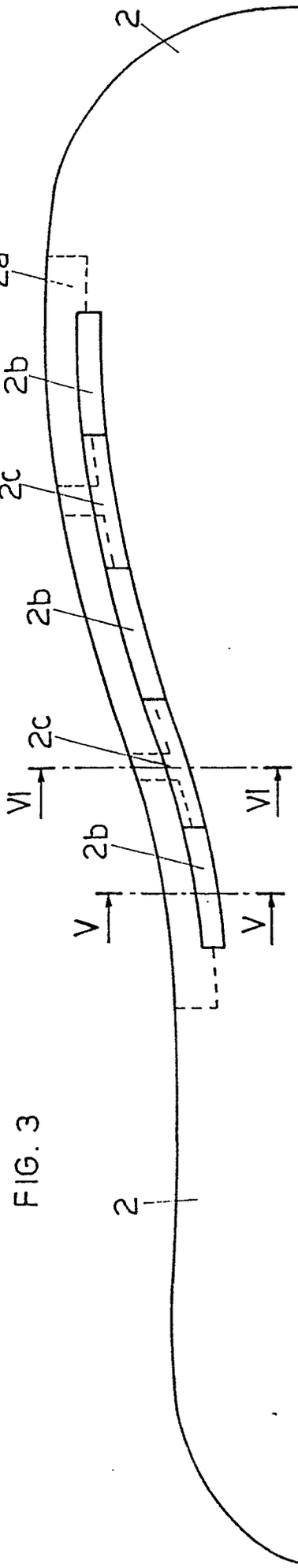


FIG. 3



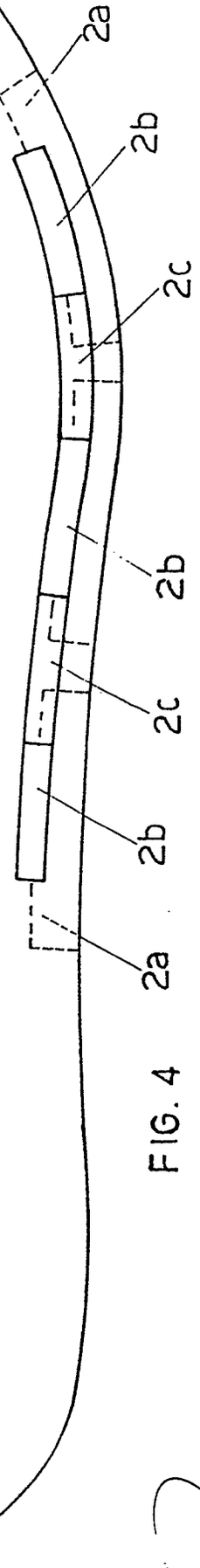


FIG. 4

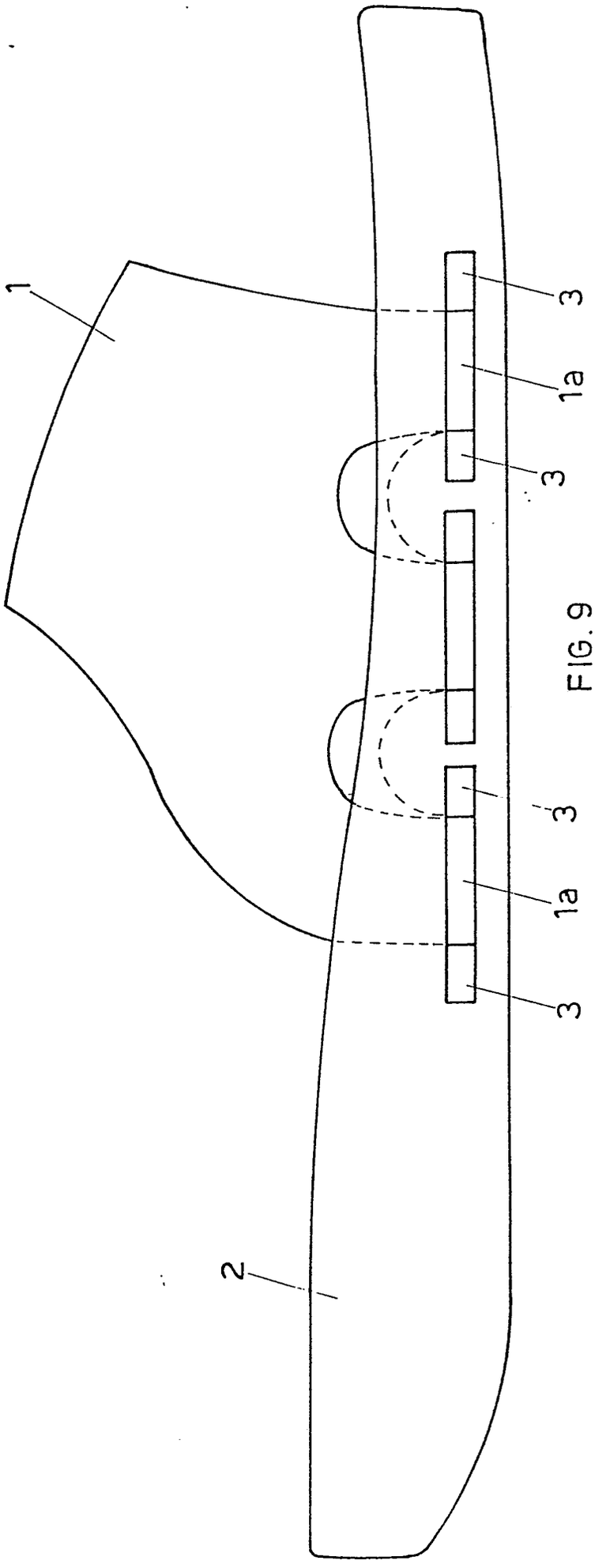


FIG. 9

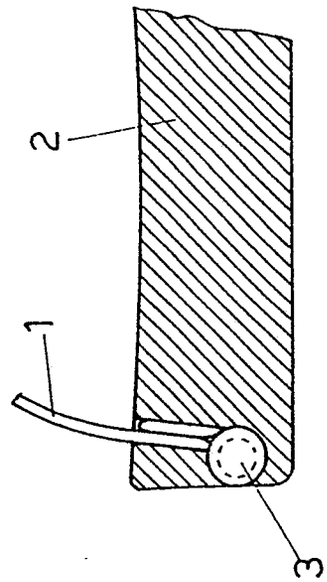


FIG. 8

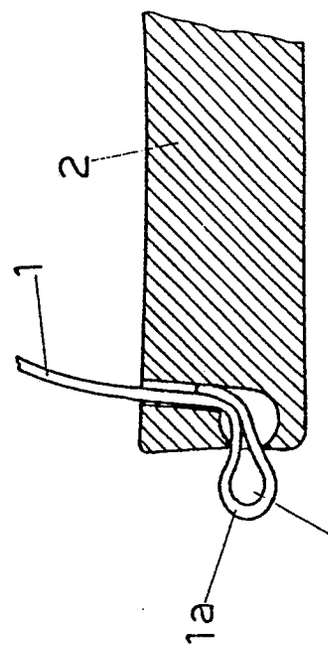


FIG. 7

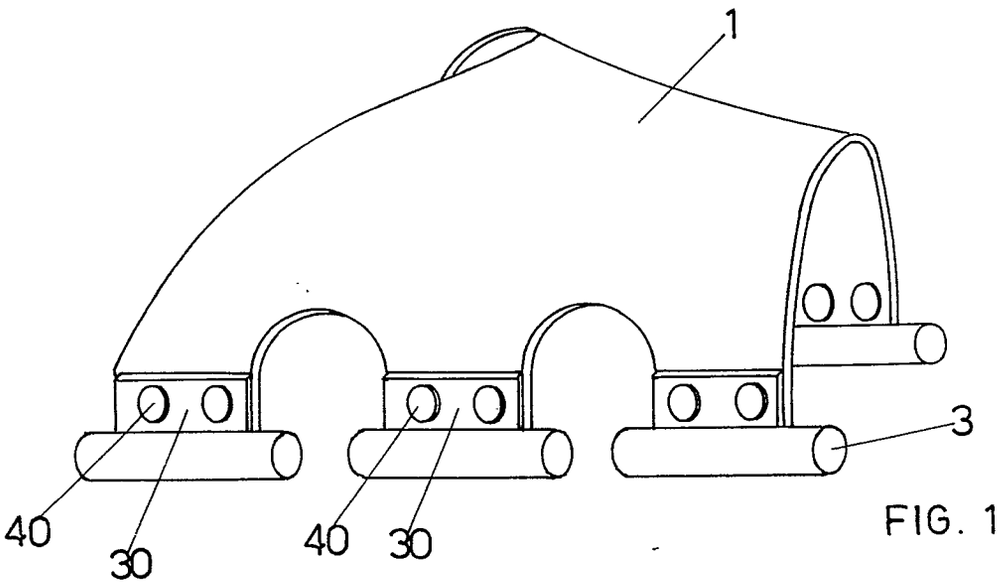


FIG. 11

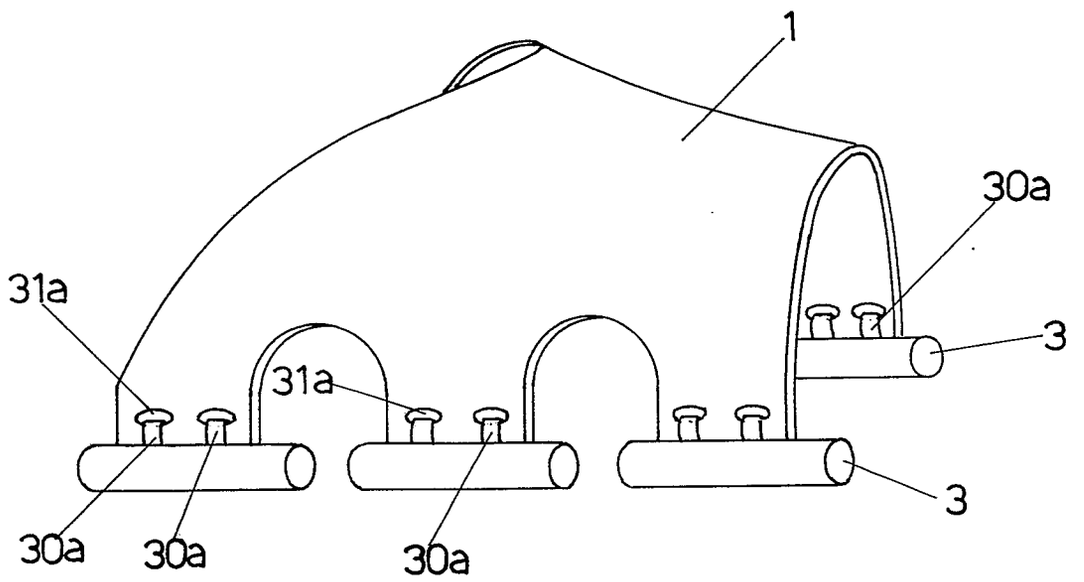


FIG. 12

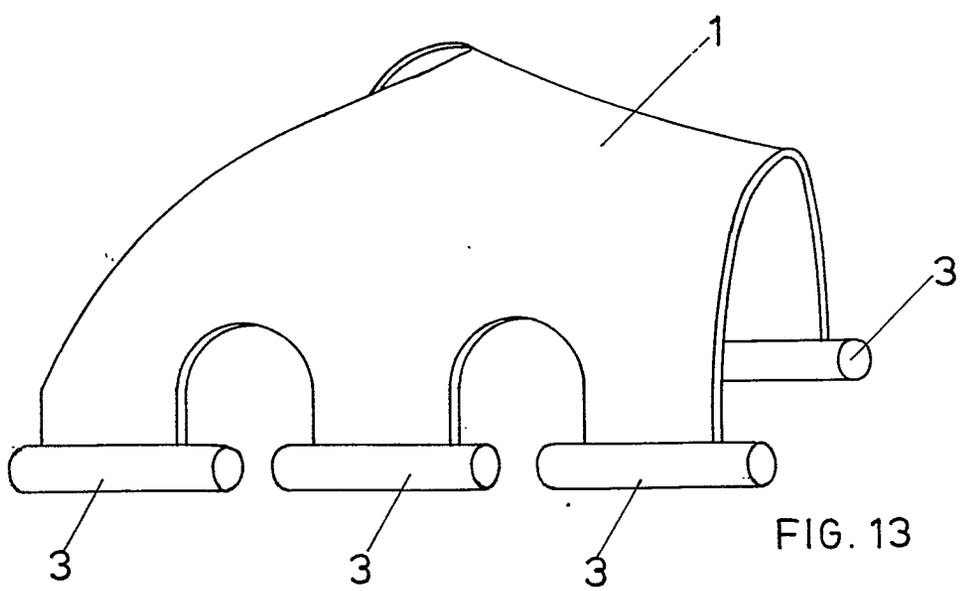


FIG. 13