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(54) **Glue dispensing device.**

(57) The device as disclosed comprises a shaped element (7) exhibiting a contour defining a glue delivery line substantially corresponding to the outline of the insole edges (5) at the toe, sole, and sole-hollow-junction lengths, a support unit (13) for the shaped element (7), adapted to position and adapt said shaped element (7) close to and under said insole (5), at least a pair of glue spreaders (36) provided with glue delivery tips (37), and a movement unit (39) for said spreaders (36), designed to move the delivery tips (37) along said lengths of the insole edges while keeping said tips (37) elastically in contact with the shaped element contour.

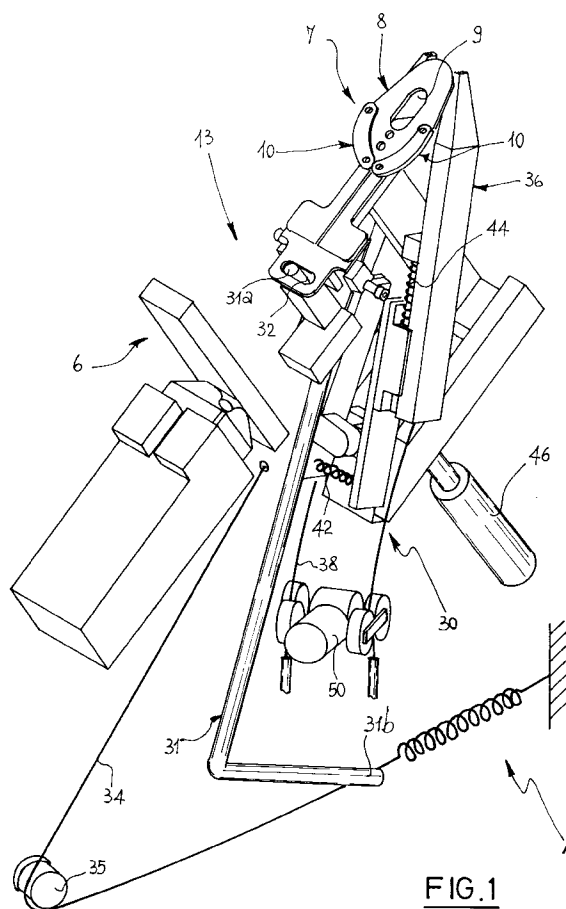


FIG.1

The present invention relates to a glue-dispensing device acting close to the edges of an insole at the toe, sole, and sole-hollow junction lengths of a shoe being worked in a machine of the preassembling-assembling type.

It is known that fastening of the lower edges or end flaps of a vamp to the lower edges of an insole at the toe, sole and sole-hollow junction lengths of a shoe is presently carried out by use of machines technically known as preassembling-assembling machines.

In these machines an appropriate glue-dispensing device is provided which enables an adhesive or thermoplastic cement to be spread along said insole lengths before folding the vamp edges onto the lower part of said insole.

In some dispensing devices of known type dispensing sectors are used that are supplied with glue issuing from a dispensing chamber. These dispensing sectors on each of which a plurality of delivery valves is located which are susceptible of activation upon contact with the shoe insole, generally comprise a front sector substantially having a bow-shaped configuration, designed to act at the toe region of a shoe, and a pair of rear sectors engaged to the front sector and provided with delivery valves too, which are adapted to act along the insole edges close to the sole-hollow junction portion of the shoe.

Since the dispensing sectors need to be adapted to the different shoe sizes and shapes, at least within a given variability range, the configuration of said dispensing sectors does not enable glue to be applied in a conveniently precise manner. A particularly critical area is that corresponding to the sole-hollow junction portion on the inner shoe side where glue often is dispensed too close to the insole edges or even at the outside of said edges.

Attempts have been made to overcome this lack of precision in applying glue by carrying out frequent interventions on the preassembling-assembling machine in order to change the dispensing sectors. It is to be noted that these sectors reach high operating temperatures because they contain heating means for holding the thermoplastic adhesive to a fluid state. Consequently the worker must wait for an appropriate temperature lowering before being able to intervene on the machine without the risk of being burnt.

Subsequently it will be necessary to wait for the time necessary to bring the dispensing sectors back to the operating temperature. Therefore the replacement of said sectors always involves a slowing down in the production rates and consequently heavier costs.

Also known are other types of devices involving the use of one fixed dispensing sector provided with delivery valves, having small sizes and corresponding to the outline of the shoe toe, and two movable dispensing sectors each provided with a delivery valve,

having the task of following the insole outline starting from the fixed toe sector as far as the sole-hollow junction area. These movable dispensing sectors are set in motion by driving means such as stepping motors controlled by electronic systems in which the pattern of the shoe being worked is stored. However, although these types of devices achieve good results at the sole and the sole-hollow junction portion, they are on the other hand very expensive as they practically are small robots. At all events these devices do not completely solve the above discussed technical problem consisting in how to achieve a good precision in dispensing glue without carrying out the replacement of the dispensing sectors, since it is always necessary to change the fixed dispensing sector located at the toe region as the outline of said toe varies. Therefore the already described drawbacks relating to handling of elements reaching high operating temperatures are still in existence.

Under this situation the technical task underlying the present invention is to devise a glue-dispensing device capable of substantially eliminating the above drawbacks.

Within the scope of this technical task it is an important object of the invention to provide a precise and reliable glue-dispensing device, capable of being easily and readily adapted to all shoe sizes and shapes without any waiting time being needed.

Another important object of the invention is to provide a glue dispensing device facilitating the operator in accomplishing the foreseen work steps by avoiding complicated adjustments and manipulations of members at high temperature, which could cause even serious accidents to the operator's upper limbs.

Still another object of the invention is to provide an embodiment thereof which is advantageous in itself and at the same time represents a technical progress in the particular field.

The technical task mentioned and the objects specified are substantially achieved by a glue-dispensing device acting close to the edges of an insole at the toe, sole and sole-hollow junction lengths of a shoe being worked, in a machine of the preassembling-assembling type, said machine comprising a heel-locking element designed to hold the heel of said shoe being worked, the device being characterized in that it comprises:

- a shaped element having a contour defining a glue-dispensing line substantially corresponding to the outline of said edge lengths in said insole,
- a support unit for said shaped element designed to position and adapt the latter close to and under said insole;
- at least a pair of glue spreaders provided with delivery tips, and
- a spreader moving unit, adapted to move said delivery tips along said edge lengths of the insole while keeping said tips in contact with the contour

of said shaped element.

A preferred embodiment of a glue-dispensing device acting close to the edges of an insole, in accordance with the invention will be given hereinafter by way of non-limiting example, with reference to the accompanying drawings, in which:

- Fig. 1 is a perspective view of the device of the invention in a first operating position;
- Fig. 2 is a perspective view of the device shown in Fig. 1 in a second operating position;
- Fig. 3 is an elevational front view of the device of the invention;
- Fig. 4 is a top view of a portion of the device of the invention disposed according to a configuration adapted to a long-sized right shoe;
- Fig. 5 shows the device portion shown in Fig. 4 disposed according to a configuration adapted to a short-sized right shoe;
- Fig. 6 shows the device portion shown in Fig. 4 disposed according to a configuration adapted to a short-sized left shoe;
- Fig. 7 is a diagrammatic side elevation view of the device in the operating position corresponding to Fig. 1;
- Fig. 8 is a side elevational view of the device in the second operating position shown in Fig. 2; and
- Fig. 9 is a perspective view to an enlarged scale of some components of the device of the invention.

With reference to the drawings, the device of the invention has been generally identified by reference numeral 1.

It is used in a conventional machine of the preassembling-assembling type in which a movable support column 2 carrying a shoe last is provided, on said last being disposed the shoe vamp 4. Located between the last 3 and movable column 2 is an insole 5 to be joined to the vamp 4.

Preassembling-assembling machines further comprise several clamps not shown in the drawings, disposed according to a substantially U-shaped line around the last 3 and defining all together an assembly technically known as "clamp round". Said clamps have the function of stretching and tensioning the vamp 4 leather placed on the last 3.

The vamp 4 is firmly fixed in place on the last 3 by several tightening means of a conventional type and known per se which are not shown, and comprise a jaw-like die coated with inert plastic material, Teflon for example, adapted to wrap the vamp 4 over the whole toe and flank portion extension in order to create a perfect side contact between the leather and last 3. Disposed above the last 3 there is also a pressure pad, movable at right angles to the plane of the movable column 2 and adapted to lock both the vamp 4 and last 3 at the upper area of said last, known as "toe cap".

In addition, there is a heel-locking element 6 located close to the shoe heel, which element is movable in the longitudinal direction of the shoe so as to suit the different lengths thereof.

The glue-dispensing device 1 comprises a shaped element 7 exhibiting a contour defining a line along which glue is to be dispensed, said line substantially corresponding to the outline of the edge lengths in the insole 5. Obviously the glue-dispensing line should be slightly at the inside of the insole edges, being spaced apart as much as possible the same distance from said edges in order to ensure a correct glue spreading.

In greater detail the shaped element 7 comprises a fixed portion 8, substantially corresponding to the shoe toe and sole portions and exhibiting an opening 9 at the inside thereof which the movable column 2 can pass through, and a pair of movable sectors 10 substantially corresponding to the sole-hollow junction length.

The movable sectors are engaged, at one end 10a thereof, in a consecutive and oscillatable manner, to the fixed portion 8 in the region of elongated holes 11 formed in said fixed portion and extending in a bow-like conformation in the longitudinal direction of the shoe. More particularly, the first ends 10a of the movable sectors 10 exhibit first engagement pins 12 fitted in the elongated holes 11 and enabling both a rotation of the movable sectors 10 and a substantially longitudinal displacement of the first ends 10a along the path defined by said elongated holes 11.

The shaped element 7 is supported by a support unit 13 adapted to put the shaped element 7 in place under the insole 5 while adapting it to the different shoe lengths and shoe conformations depending on whether right or left shoes are involved.

The support unit 13 comprises a base body 14 (Fig. 7) engaged to a support bar 15 and engaging the fixed portion 8, and a first slider 16 (Figs. 4, 5, 6, and 7) slidably engaged to the base body 14 and movable at right angles to the longitudinal direction of the shoe between a right limit position and a left limit position, both adjustable by limit screws 17. Slidably engaged to the first slider 16 is a second slider 18 according to a slide direction parallel to the longitudinal direction of the shoe. The second slider 18 is therefore movable between a front limit position and a rear limit position, spaced apart a shorter and longer distance respectively from the toe of the shoe being worked.

The front and rear limit positions are defined by a longitudinal groove 19 formed in the second slider 18 and a guide pin 20, integral with the first slider 16 and fitted in the longitudinal groove 19.

Slidably engaged to the second slider 18 at first end portions 21a, is a pair of drive elements 21. The first end portions 21a each have a transverse opening 22 in which a first slide 23 is inserted which is fastened to the second slider 18 by means of a pivot pin 24. The

first slides 23 and transverse openings 22 enable the drive elements 21 to be moved in a direction away from and close to each other, perpendicularly to the slide direction of the second slider 18.

The drive elements 21 are oscillatably engaged, at the second end portions 21b thereof, to the second ends 10b of the movable sectors 10 by means of second engagement pins 25. In addition, the first end portions 21 of the drive elements 21 exhibit edge areas 26 symmetrically inclined to the longitudinal direction of the shoe and elastically kept against the guide pin 20 by a first spring member 27, engaged at the ends to the first end portions 21a and defined by a draw spring. The inclination of the edge areas 26 is adapted to cause the drive elements 21 to move apart from each other during the displacement of the second slider 18 from the front limit position to the rear limit position. It is understood that if the second sliders 18 move in the opposite direction the edge areas 26 cause the drive elements 21 to move close to each other.

The guide pin 20, first spring member 27 and edge areas 26 all together define movement means 28 acting on the drive elements 21 in order to make said elements move close to and away from each other.

Connected to the first slider 16 and acting thereon is first actuator means 29 defined for example by a fluid-operated actuator which is adapted to make the first slider 16 move between the right and left limit positions so that the movable sectors 10 may define the shaped element 7 contour for a right and a left shoe, respectively.

Provision is also made for second actuator means 30 acting on the second slider 18 and adapted to move it along the longitudinal slide direction defined by the longitudinal groove 19, so as to adapt the longitudinal and transverse extension of the shaped element 7 to the length and width of the shoe to be produced.

This second actuator means 30 is defined by members connecting it to the heel-locking element 6 and adapted to selectively cause the displacement of the second slider 18 to the front limit position, when said heel-locking element 6 moves close to the shoe toe and to the rear limit position when it moves away from the shoe toe.

The connecting members 30 comprise a drive lever 31 exhibiting a first end stretch 31a fitted in a cavity of the second slider 18 and a second end stretch 31b engaged to a second elastic member 33, a draw spring for example. The second end stretch 31b is also engaged to a cable or chain 34 passing over an idler pulley 35 and integral at the end with the heel-locking element 6.

The glue-dispensing device 1 further comprises a pair of glue spreaders 36, provided with glue dispensing or delivery tips 37, inside which delivery valves to

be activated by contact with the insole 5 are housed. Each glue spreader 36 is provided at the inside thereof with heating elements adapted to convert a thermoplastic filament 38 introduced therein at the end opposite to the tip 37, into glue in a fluid state at the tip 37.

The glue spreader 36 and the members arranged therein are known per se and already disclosed by other patents in the name of the same applicant (for example US Patent No. 4.480 584).

The glue spreaders 36 are supported and made movable by a movement unit 39 adapted to move the delivery tips 37 along said insole 5 edges while keeping said tips constantly in contact with the shaped element 7 contour.

The movement unit 39 comprises a pair of support elements 40, one for each glue spreader 36, rotatably engaged with each other according to a rotational axis 41 lying in a longitudinal plane with respect to the shoe.

A third spring member 42, a compression spring for example, engages the support elements 40 at the end portion thereof and acts on said support elements 40 so as to cause the same to rotate about the rotational axis 41 in the direction enabling the delivery tips 37 to move close to each other, while keeping them elastically against the shaped element 7 contour.

The glue spreaders 36 are slidably engaged to the support elements 40 by second slides 43, enabling the displacement of the glue spreaders 36 relative to the support elements 40 according to a translation direction following the prevailing extension of the spreaders 36.

The glue spreaders 36 are acted upon by fourth spring members 44, compression springs for example, which are adapted to make said spreaders move along the second slides 43 so as to urge the delivery tips 37 elastically against the insole 5.

Provision is also made for third actuator means 45 acting on the support elements 40 and adapted to move them so as to impart a feed motion to the delivery tips 37 in the longitudinal direction of the shoe.

The third actuator means 45 comprises a fluid-operated cylinder 46 exhibiting a rod 47 rotatably engaged to a transverse connecting element 48. The latter is in turn engaged to a pair of operating bars 49 at intermediate areas thereof.

Each operating bar 49 is set on the support bar 15 at a fulcrum 49a and is engaged to a support element 40. In this way the movement of the rod 47 of the fluid-operated cylinder 46 which is substantially at right angles to the plane defined by the insole 5, would force the delivery tips 37, should they be fixed with respect to the support elements 40, to describe an arc having its center at fulcrum 49a, which is close to the insole plane and substantially oriented in the longitudinal direction of said insole. The presence of fourth spring members 44 actually enables the delivery tips

37 to be held in contact with the insole 5 when said arc is being described.

Finally feed members 50 are provided which are designed to feed a thermoplastic filament 38 and cause the same to move backward at the end of the delivery operations by a length sufficient to prevent an amount of glue greater than the desired amount from coming out of the delivery tip, which could give rise to the formation of sticky residues therearound.

Operation of the glue-dispensing device described above mainly as regards structure is as follows.

After the operating steps producing the vamp leather tensioning on the shoe last 3 have been completed and the activation of the vamp tightening means has occurred, the next step involves dispensing glue on the insole 5. However some operations performed automatically are previously necessary in order to adapt the shaped element 7 to the sizes and conformation of the shoe being worked.

First of all the first actuator means 29 causes the first slider 16 to move to the right limit position (see Fig. 4) or left limit position (see Fig. 6) depending on whether the shoe to be worked is a right or left shoe. Thus the movable sectors 10 are rotated about the first engagement pins 12 due to the translation undergone by the drive elements 21 and in particular the second end portions 21b thereof according to the displacement direction of the first slider 16.

The positioning of the heel-locking element 6 against the shoe heel enables the conformation of the shaped element 7 to be automatically adjusted so that it may suit the length of the shoe being worked.

More particularly, by way of example, if the heel-locking element 6 is moved away from the shoe toe, the cable 34 is less tensioned, which brings about a displacement of the second end portion 31b of the drive lever 31 in the direction giving rise to the movement towards the rear limit position of the second slider 18 on which said drive lever 31 acts.

Under this situation shown in Fig. 4, the guide pin 20 acting on the inclined edge areas 26 makes the drive elements 21 move apart from each other, which results in the wide opening of the second ends 10b of the movable sectors 10. The translation of the second slider 18 simultaneously causes the drive elements 21 to slide in the longitudinal direction and, as a result, the first ends 10a slide in the elongated holes 11. In this way the contour of the shaped element 7 is conveniently changed so that it may suit the shoe conformation.

On the contrary, when the heel-locking element 6 moves close to the shoe toe, the cable 34 is submitted to a pulling action and therefore the second end portion 31b of the drive lever 31 moves in the direction giving rise to a sliding of the second slider 18 towards the front limit position. Under this situation, shown in Fig. 5, the drive elements 21 and second ends 10b of the movable sectors 10 tend to move close to the shoe

toe, simultaneously with the sliding of the first ends 10a within the elongated holes 11.

The contour of the shaped element 7 is therefore adapted to suit shoes of shorter length.

When all operations for adjusting the shaped element 7 are over, the glue dispensing step is started by either automatic or manual activation. First the movement unit 33 puts the delivery tips 37 in contact with each other at the toe (see Figs. 1 and 7). The lowering of the rod 47 of the fluid-operated cylinder 46 causes the delivery tips 37 to move towards the sole-hollow junction portion (see Figs. 2 and 7). During this displacement the third spring member 42 holds the delivery tips 37 against the shaped element 7, while the fourth elastic members 44 enable the delivery tips to be constantly in contact with the insole 5. The amount of the delivered glue at each insole length can be suitably adjusted by varying the movement speed of the rod 47. For example by making the delivery tips stop for a longer time in the region of the shoe toe, it is possible to deliver a greater amount of glue thereon.

At the end of the glue delivery step the members feeding the tips with the thermoplastic filament 38 withdraw the latter by an amount sufficient to enable the glue present at the end of the delivery tip to be sucked therein, due to the outer air pressure.

Afterwards, suitable movable plates, known per se, move close to each other, thereby folding back the end flaps of vamp 4 under the insole 5, the adhesion therebetween being completed by a further pressing action carried out by a pressure pad conveniently provided as mentioned above.

The invention attains important advantages.

In fact it is pointed out that a single pair of glue spreaders enables glue to be delivered over the whole concerned insole outline, and particularly at the toe region.

It will be recognized that, should it be necessary to replace a fixed portion 8 of the shaped element 7 with another having different sizes, the production process would not be subjected to interruptions or waiting times because the fixed portion 8, as well as the other components of said shaped element 7, does not become hot and can be readily and easily handled without any risks.

It is also important to note that the particular embodiment shown is advantageous even in its most specific aspects.

Modifications and variations may be made to the invention as described, all of them falling within the scope of the inventive idea. In addition, all of the details may be replaced by technically equivalent elements. In practicing the present invention the materials, shapes and sizes may be of any nature and magnitude in accordance with requirements.

Claims

1. A glue-dispensing device acting close to the edges of an insole at the toe, sole, and sole-hollow junction lengths of a shoe being worked in a machine of the preassembling-assembling type, said machine comprising a heel-locking (6) element designed to hold the heel of said shoe being worked, the device being characterized in that it comprises:
 - a shaped element (7) having a contour defining a glue-dispensing line substantially corresponding to the outline of said edge lengths in said insole (5),
 - a support unit (13) for said shaped element (7) designed to position and adapt the latter close to and under said insole (5),
 - at least a pair of glue spreaders (36) provided with delivery tips (37), and
 - a spreader moving unit (39), adapted to move said delivery tips (37) along said edge lengths of said insole (5) while keeping said tips (37) in contact with the contour of said shaped element (7).
2. A device according to claim 2, characterized in that said shaped element (7) comprises:
 - a fixed portion (8) substantially corresponding to said toe and sole lengths, and
 - a pair of movable sectors (10) substantially corresponding to the sole-hollow junction length, and engaged at one end (10a) thereof, in a consecutive and oscillatable manner, to said fixed portion (8),
 and in that said support unit (13) comprises:
 - a base body (14) engaged to a support bar (15) and engaging said fixed portion (8),
 - a first slider (16) slidably engaged to said base body (14) and movable at right angles to the longitudinal direction of the shoe between a right limit position and a left limit position,
 - a pair of drive elements (21) engaged to said first slider (16) at one end portion (21a) thereof and to the second ends (10b) of said movable sectors (10) at the second end portion (21b) thereof, and
 - first actuator means (29) acting on said first slider (16) and adapted to move it between said right and left limit positions in order to enable said movable sectors (10) to define said contour of the shaped element (7) for a right and a left shoe respectively.
3. A device according to claim 2, characterized in that said support unit (13) further comprises:
 - a second slider (18) disposed intermediate said pair of drive elements (21) and first slider (16) and slidably engaged to said first slider in

a slide direction parallel to the longitudinal direction of the shoe, said second slider (18) being movable between a front limit position and a rear limit position spaced apart a shorter and longer distance respectively from the shoe toe,

said drive elements (21) being slidably engaged to said second slider (18) at said first end portion (21a) by means of slides (23) oriented in a direction enabling the drive elements (21) to move away from and close to each other perpendicularly to said slide direction of the second slider (18),

- movement means (28), acting on said drive elements (21) in order to make said elements move close to and apart from each other during the motion of said second slider (18) along said slide direction, and

- second actuator means (30) acting on said second slider (18) and adapted to move it along said longitudinal slide direction, and in that said fixed portion (8) of the shaped element (7) is provided with elongated holes (11) of substantially longitudinal extension in which said first ends (10a) of the movable sectors (10) are engaged, the longitudinal displacement of said second slider (18) and drive elements (21) giving rise to the sliding of said first ends (10a) of the movable sectors (10) in said elongated holes (11) and, selectively, to the wide opening and approaching of said second ends (10b) of said same movable sectors, in order to make said shaped element (7) suit the length and width of the shoe being worked.

4. A device according to claim 3, characterized in that said second slider (18) exhibits a longitudinal groove (19) and in that the movement means (28) comprises:
 - a guide pin (20) integral with said first slider (16) and fitted in said groove (19), said guide pin (20) and groove (19) defining said front limit position and said rear limit position of the second slider (18),
 - two edge areas (26), one for each of said end portions (21a, 21b) of the drive elements (21), symmetrically inclined to said longitudinal direction, and
 - at least a first spring member (27) engaged at the ends to said first end portions (21a, 21b) and adapted to hold said edge areas (26) of the first end portions (21a, 21b) elastically against said guide pin (20), the inclination of said edge areas (26) being suitable to make said drive elements (21) move away from each other as the second slider (18) moves from said front limit position to said rear limit

position.

5. A device according to claim 3, characterized in that said second actuator means (30) is defined by members connecting said shoe to said heel-locking element (6) and adapted to selectively cause the displacement of the second slider (18) towards said front limit position and rear limit position respectively, in synchronism with the displacement of said heel-locking element (6) close to and away from the shoe toe. 5
6. A device according to claim 5, characterized in that said connecting members (30) comprise:
 - a drive lever (31) engaged, at one end stretch (31a) thereof, to said second slider (18), 15
 - a second spring member (33) engaged to the second end stretch (31b) of said drive lever (31), and 20
 - a cable (34) engaged at the ends to said heel-locking element (6) and said end stretch (31b) of said drive lever (31), respectively.
7. A device according to claim 1, characterized in that said movement unit (39) for said glue spreaders (36) comprises:
 - a pair of support elements (40), one for each glue spreader (36), rotatably engaged with each other according to a rotational axis (41) lying in a longitudinal plane with respect to the shoe, 30
 - second slides (43) slidably engaging said glue spreaders (36) to said support elements (40) according to a translation direction oriented in the prevailing extension direction of said glue spreaders (36), 35
 - third actuator means (45) acting on said support elements (40) and adapted to move said same support elements in order to impart a feed motion to said delivery tips (37) of the spreaders substantially in the longitudinal direction of said shoe, 40
 - at least a third spring member (42) engaged at the ends to said support elements (40) and acting thereon so as to rotate them about said rotational axis (41) in order to enable said delivery tips (37) to move close to each other while keeping them elastically against the shaped element (7) contour, and 45
 - at least a pair of fourth spring members (44) acting on said glue spreaders (36) and adapted to move the latter along said second sliders (18) in order to urge said delivery tips (37) elastically against said insole (5). 50 55

8. A device according to claim 7, characterized in that said third actuator means (45) comprises:

- a fluid-operated cylinder (46) exhibiting a rod (47) which is movable in a direction substantially perpendicular to said insole (5),
- a pair of operating bars (49) set at the ends on said support bar (15) and engaged each to a support element (40) of said glue spreaders (36), and
- a transverse connecting element (48) for said operating bars (49), engaged to said bars at an intermediate area thereof, said rod (47) of the fluid-operated cylinder (46) being rotatably engaged to said connecting element (48).

9. A device according to claim 1, characterized in that said glue spreaders (36) use a thermoplastic filament and in that the feed members (50) for supplying said glue spreaders (36) with said thermoplastic filament are provided, which are adapted to cause said thermoplastic filament to move backward at the end of the glue delivery operations.

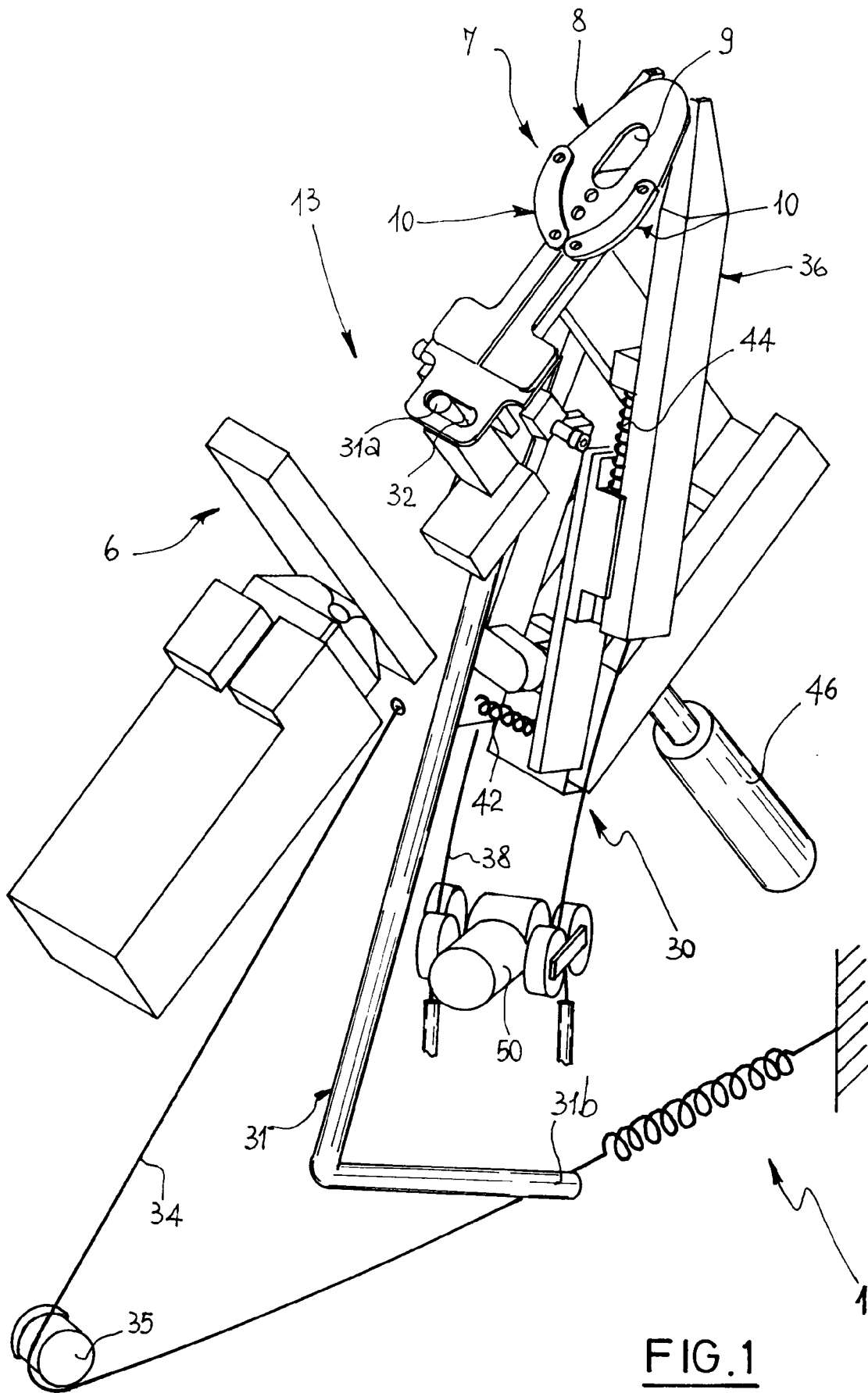
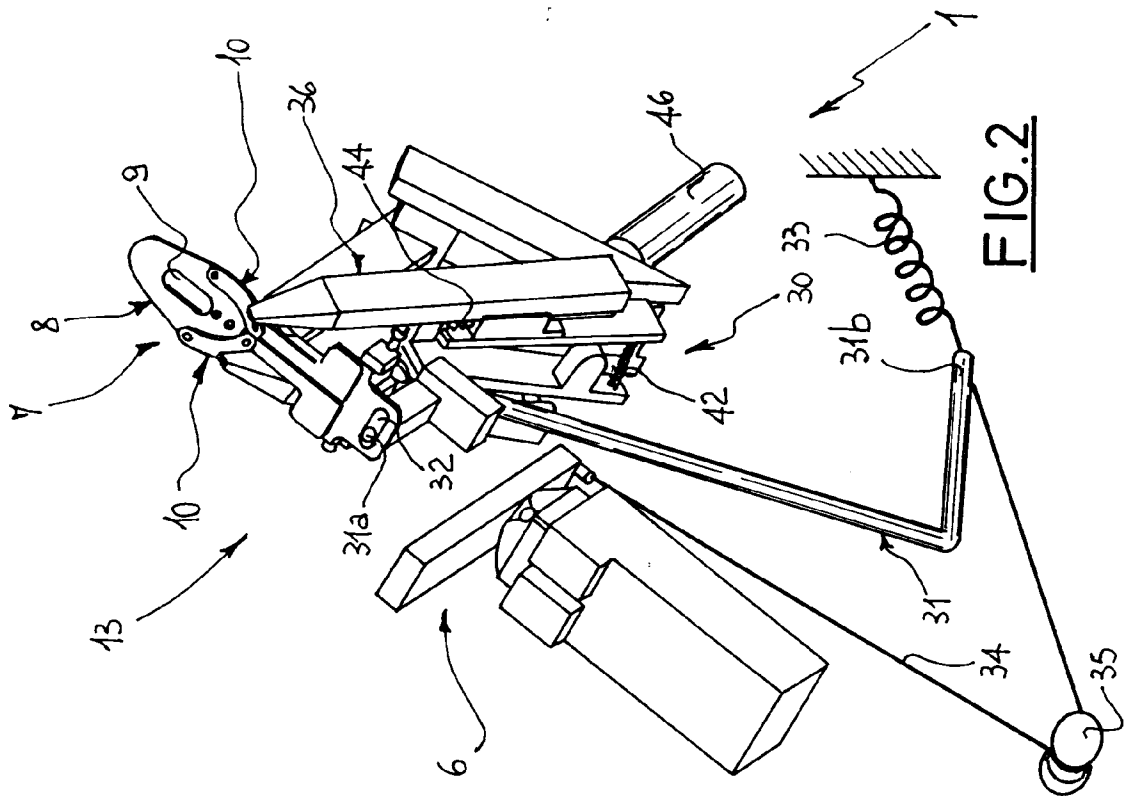
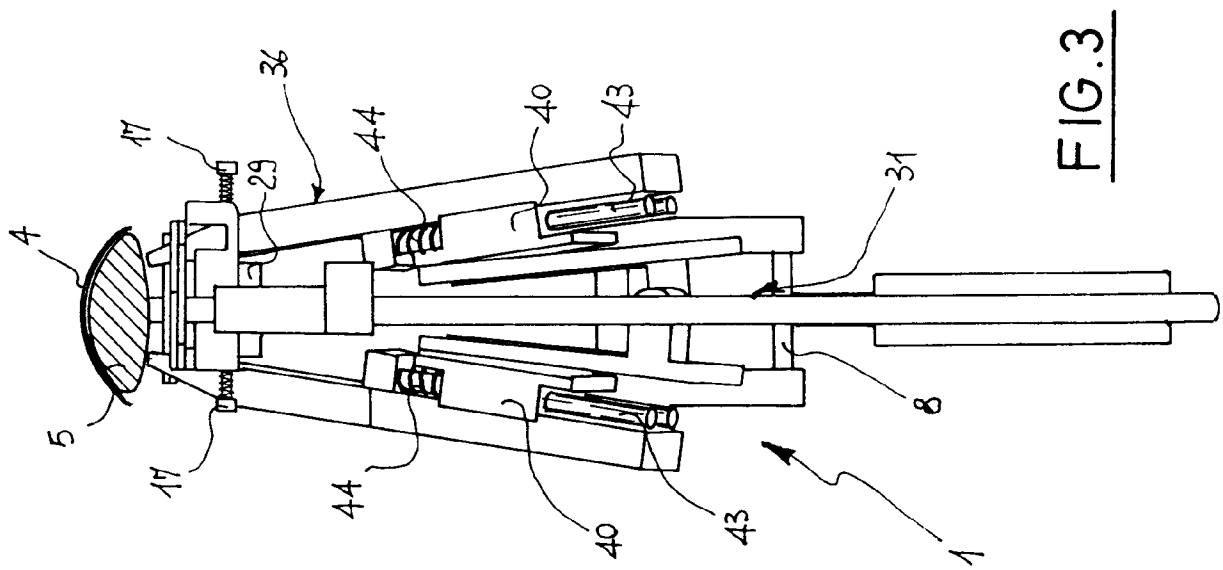
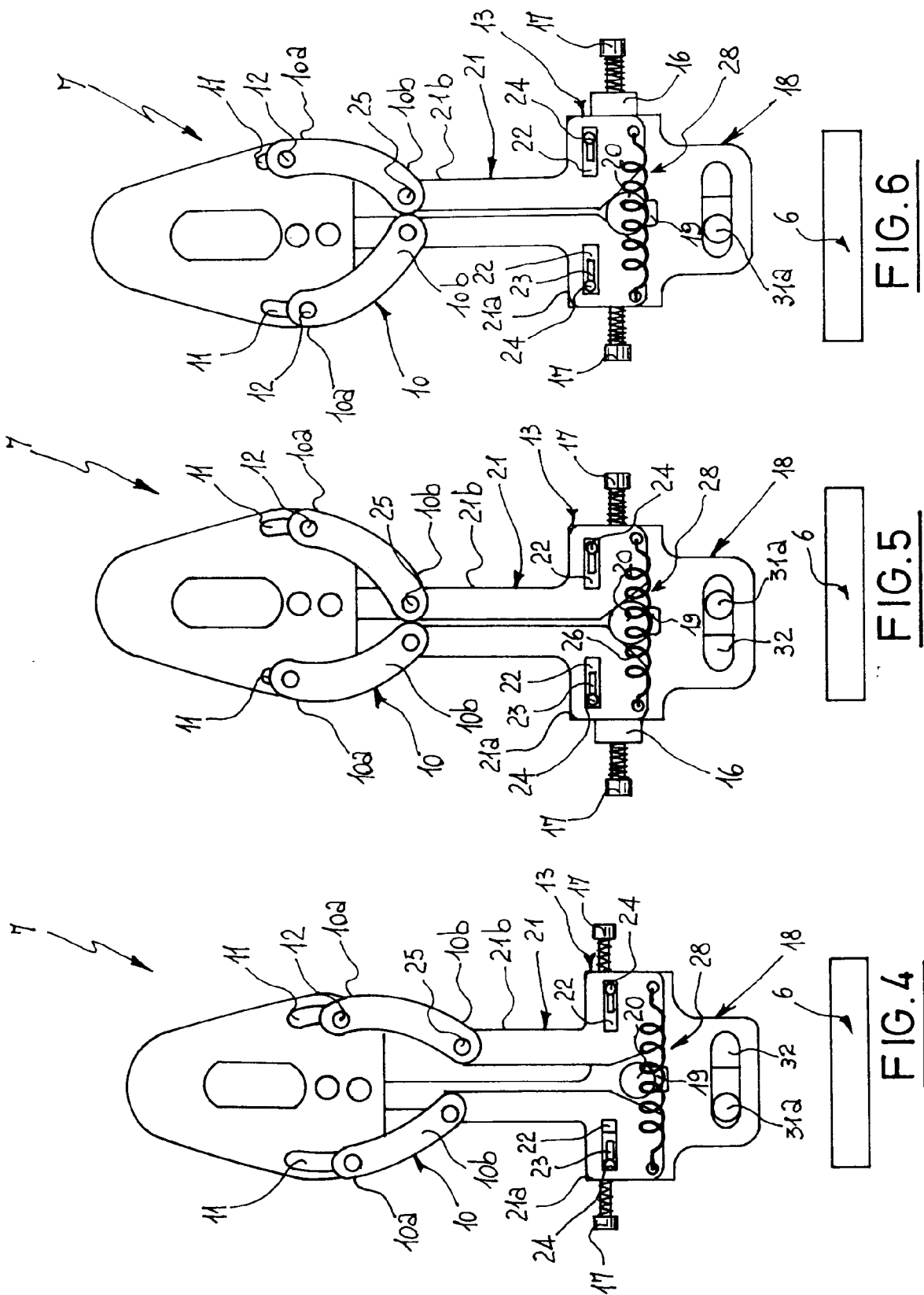
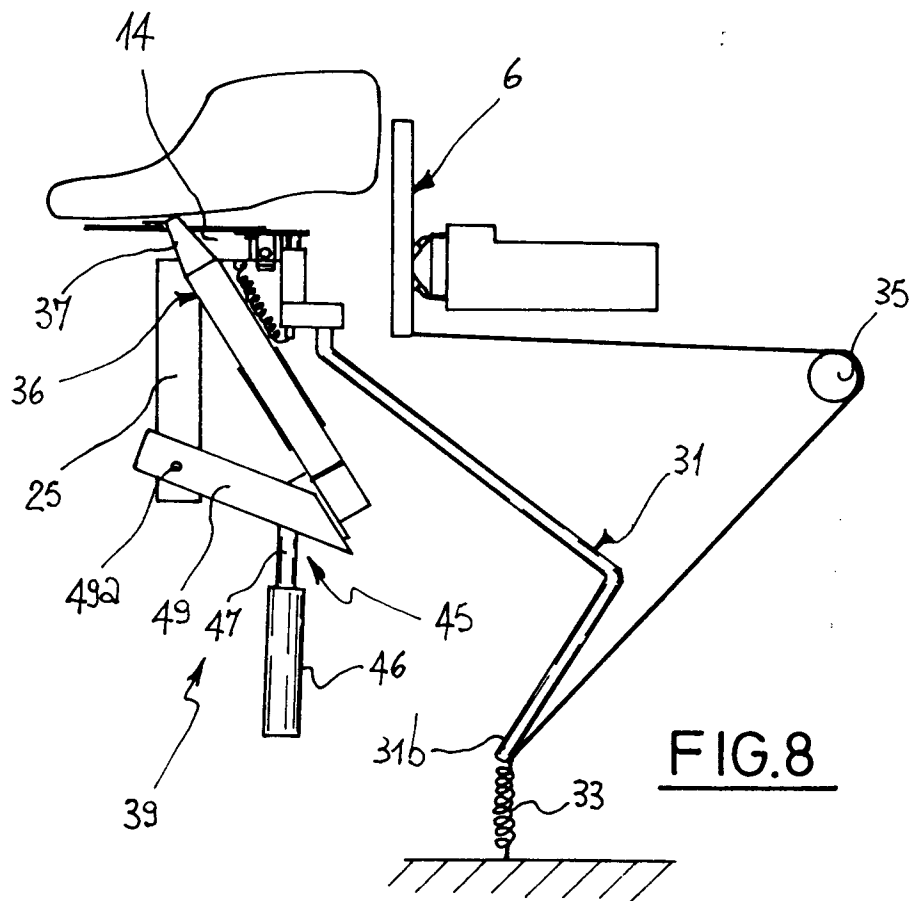
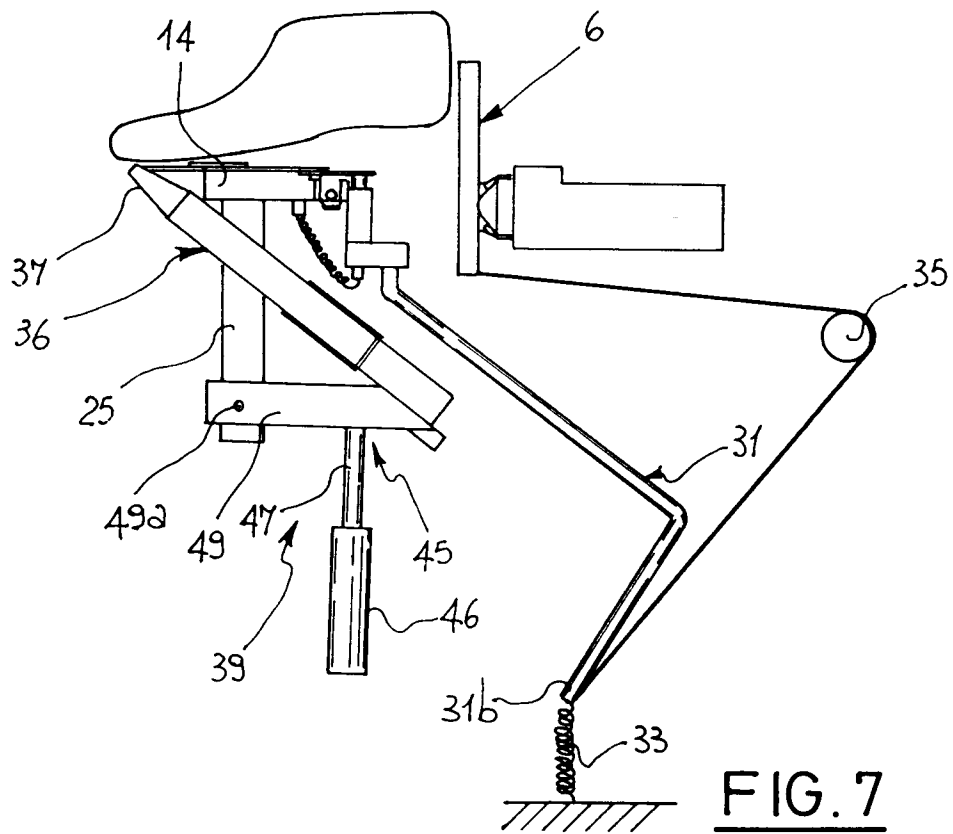


FIG. 1







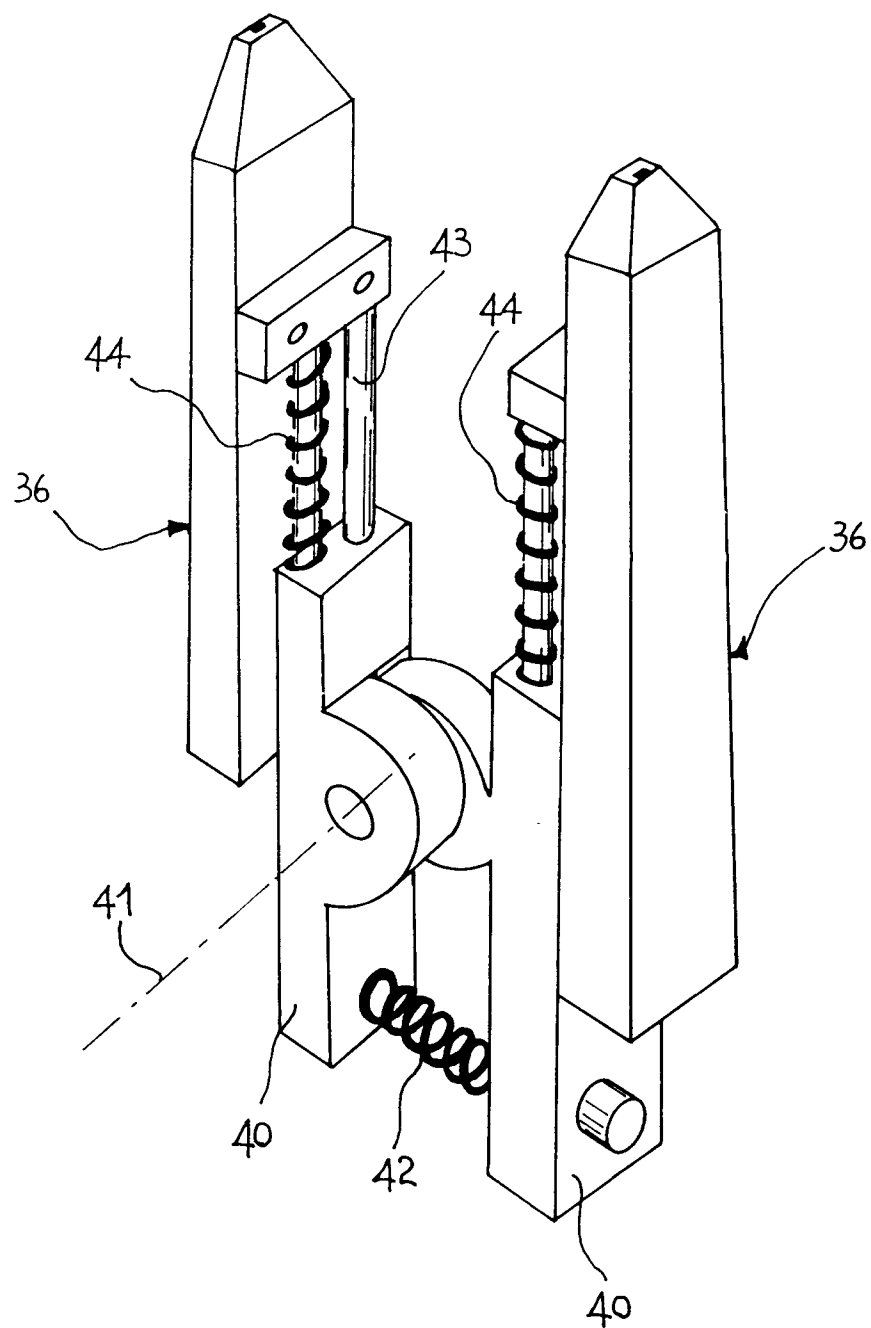


FIG. 9



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 92 83 0204

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	EP-A-0 273 672 (INTERNATIONAL SHOE MACHINE CORP) * column 1, line 11 - column 2, line 41; claims; figure 2 *	1	A43D25/18 A43D25/047
A	---	2-9	
D,A	US-A-4 480 584 (CUCCHETTI ET AL.) * column 2, line 5 - line 29; claims; figure *	1,7-9	
A	---		
A	DE-C-3 341 118 (INTERNATIONALE SCHUH-MASCHINEN CO GMBH)		
A	---		
A	EP-A-0 336 671 (BRITISH UNITED SHOE MACHINERY LTD)		
A	---		
A	US-A-4 939 805 (WALEGA)		
A	---		
A	US-A-3 963 840 (VORNBERGER)		

			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			A43D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 19 AUGUST 1992	Examiner SOEDERBERG J. E.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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