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(54) **Method for applying a glue to an insole**

Verfahren zum Aufbringen von Klebstoff auf eine Brandsohle

Procédé pour appliquer un adhésif sur une première de montage

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Description

[0001] The present invention relates to a method for manufacturing shoes and in particular to a method for applying a glue to an insole.

[0002] As is generally known, in the manufacturing of shoes the upper is glued to the insole. In order to achieve this the upper is applied and stretched over a form at the bottom of which an insole has previously been applied. Then, after spreading glue on the contour of the insole, the edge portions of the upper are folded back and pressed against the insole, so as to obtain the desired gluing.

[0003] According to the known state of the art, the aforesaid operations are carried out automatically in shoe industry by using pulling-over machines in which the glue supplying operation is carried out using several methods.

[0004] The use of machines which can execute the aforesaid operations automatically is advantageous both from the point of view of the high production amounts achieved by such machines and of the constant quality of the obtained products ensured by said machines.

[0005] The requirement which has to be satisfied by said machines is to be suitable for different sizes and shapes of existing insoles. Concerning this point, it should be taken into account that for insoles with the same size there may be models with different shapes and fittings (for instance narrow or broad).

[0006] In order to achieve a good gluing of the upper to the insole the glue should be well spread by the contour of the insole. Therefore, it is obvious that should the shape of the insole be changed, the means provided for supplying the glue should be able to spread the glue where necessary, independently from the shape of the insole.

[0007] It should then be taken into account that glue supplying should be limited only to the portions of the insole which have to be glued to the upper, i.e. on the contour of the insole. Indeed, the presence of glue outside said portions can be disadvantageous for the following treatments the upper shall undergo.

[0008] A machine which can carry out the aforesaid operation is known for instance from patent EP-A-1036516. In said machine of prior art, glue supplying takes place on the front portion of the insole by means of a supplying plate equipped with a plurality of glue suppliers and on the back portion of the insole by means of two movable glue suppliers which can follow the contour of the remaining insole portion.

[0009] The patent further specifies that should the shape and the size of insoles be changed, the plate can be adapted to the outline of the front portion of the insole, while the two glue suppliers follow the outline of the insole starting from the plate.

[0010] Though suitable for insoles with very different shapes and sizes, the solution proposed in patent EP-A-

1036516 is rather unsatisfying for applying the glue to an insole if the front portion of said insole has a particularly pointed or sharpened shape.

[0011] In this case the supply plate should be replaced by a plate having a more tapered shape, so losing the advantages deriving from the use of a variable shape plate.

[0012] The problem underlying the present invention is to provide a method for applying a glue to an insole for shoes with characteristics such as to satisfy the aforementioned requirements and to simultaneously overcome the drawbacks described with reference to the prior art.

[0013] Such a problem is solved by a method for applying a glue to an insole for shoes according to claim 1.

[0014] According to a further feature the invention also relates to a manufacturing machine according to claim 9, which can operate according to the aforesaid method.

[0015] Further characteristics and the advantages of the method and of the machine according to the present invention will be evident from the following description, disclosed as a mere non-limiting example with reference to the attached figures, in which:

- Figure 1 shows a schematic perspective view of a machine using the method according to the invention,
- Figure 2 shows a perspective view on an enlarged scale of a detail of the machine shown in Figure 1,
- Figures 3, 4, 5 show schematic views of an insole during various steps of the method according to the invention and of the machine operating cycle,
- Figures 6, 7, 8, 9 and 10 show plan views of an insole during various steps of the method according to the invention and of the machine operating cycle,
- Figure 11 shows a perspective view of a shoe form with upper and insole on which the position of the glue applied with the method according to the invention and with the machine shown in Figure 1 is indicated.

[0016] With reference to the attached figures the numeral 1 globally indicates a machine for pulling-over and for lasting an upper 21 on a shoe form 2. An insole 23 is associated to the underside 15 of the form 2.

[0017] The insole 23 for shoes extends between a back end 31 and a front end 30.

[0018] The machine 1 comprises a supporting frame 3 on which positioning means 5 are fixed, intended to support the form 2 in the region of the toe 6 thereof.

[0019] In the example said positioning means 5 comprise a support element 4 having a relatively small triangular plane surface against which said form 2 is intended to be rested.

[0020] Said support element 4 is inclined so that the line Z perpendicular to its triangular plane surface substantially coincides with the eye-line of an operator ob-

5 serving said surface 5 and standing in front of the machine 1 (at the point indicated with O in Figure 1).

[0021] The machine 1 comprises an upper pushing device 7, two side pushing devices, both indicated with 8, and a rear pushing device 9. These pushing devices are intended to engage respectively with the back 10, with the sides 11 and with the heel 12 of the form 2, so as to keep the form pressed against the triangular surface of the support element 4 in an operative working position (Figures 3-5).

[0022] It should be pointed out that for reasons of simplicity Figures 3 to 5 do not show the support element 4 as well as other elements which are not essential for understanding the method of the present invention, though necessary for the operation of the machine 1.

[0023] A plurality of grippers, all indicated with 13, are arranged around the support element 4, so as to face the contour of the toe 6 of the shoe form 2. In a per se conventional way, said grippers 13 are actuated in their opening and closing and are individually displaced when necessary so as to achieve the desired tensioning of the upper 21 on the shoe form 2 before gluing.

[0024] The machine 1 further comprises means, globally indicated with 14, for folding back the edges of the upper 21 towards the underside 15 of the shoe form 2, after opening the grippers 13, as well as means, globally indicated with 16, for pressing underneath the folded-back edges of the upper 21 against the insole 23 along its contour provided with glue 24.

[0025] In the example shown means 14 for folding back the edges of the upper 21 comprise two arched plates 17 representing the outline of the contour of the toe 6 of the shoe form 2 and moving towards said form. Said means 16 comprise a plurality of rod-shaped elements 18 moving (in a transversal Y-Y direction) towards the form 2 so as to engage it underneath with a predetermined elastic force.

[0026] The machine 1 comprises means for supplying the glue 24 on the insole 23. These means consist of two glue suppliers indicated with 22 in Figures 3-10, placed near the support element 4.

[0027] Through actuating means not shown in the figures, such as for instance hydraulic actuators, the glue suppliers 22 are movable in the direction of axis Z-Z indicated in Figure 1 from a rest position spaced away from the form 2 (Fig. 3) to an active position (Figs. 4 and 5) in which they are engaged underneath with the shoe form 2 (more precisely with the insole 23 applied to the underside 15 of the form 2), so as to apply the glue 24 on the contour 27 of the insole 23 through the glue suppliers 22.

[0028] The aforesaid actuating means moving the glue suppliers 22 from their rest position spaced away from the form 2 (Fig. 3) to their active position (Figs. 4 and 5) act upon the glue suppliers 22 through the support elements 28.

[0029] Said means can comprise for instance hydraulic actuators, electric stepper motors or other conven-

tional means normally used to automate the movement of two or more elements. Furthermore, the machine 1 can be equipped with control means for controlling the operation of said actuating means, i.e. for managing the movement of the glue suppliers 22.

[0030] The glue suppliers 22 are movable, i.e. they are supported by the frame 3 of the machine 1 so that they can move along the contour 27 of the insole 23. In particular, said glue suppliers 22 allow to follow and therefore to supply the glue 24 on the opposite sides of the insole 23.

[0031] The machine 1 comprises activating means, not shown in the figures, for instance hydraulic actuators, which allow the glue suppliers 22 to be actuated so that the latter move along the contour 27 of the insole 23 starting from the back portion of the insole. The machine 1 comprises control means, not shown in the figures, for controlling the operation of said actuating means. In particular, during each operating cycle of the machine 1 said control means allow the glue suppliers 22 to be placed on the contour 27 of the insole 23. Therefore, the aforesaid control means allow to change the movement and the shifts of the glue suppliers 22 according to each type of insole 23. To this purpose said control means comprise a memory, as, for instance, an EEPROM, in which various movement programs of the glue suppliers 22 can be stored.

[0032] Preferably, the glue suppliers 22 terminate in a roll allowing to spread the glue 24 supplied on the contour 27 of the insole 23.

[0033] Said glue suppliers 22 are associated with resistances allowing to heat the glue so as to make it fluid and simplify its spreading.

[0034] The movable glue suppliers 22 are in fluid communication with a glue tank (not shown in the figures).

[0035] During the operation of the machine 1 with the method for applying a glue according to the present invention, the shoe form 2 on which the upper 21 is stretched is placed against the support element 4.

[0036] The insole 23 for shoes is then associated to the underside 15 of the form 2 by means of a mild glue having characteristics of gluing such as to ensure the temporary adhesion of the insole 23 to the underside 15 and to enable the following removal of the insole 23 from the underside 15 after the gluing step.

[0037] Then the pushing elements 7, 8 and 9 block the form 2 in its operating position (Figs. 3-5). The tensioning of the upper 21 is carried out on the form by means of the grippers 13.

[0038] Now the glue suppliers 22 are moved from their rest position (Fig. 3) to their active position (Figs. 4, 5), in which the glue is supplied.

[0039] In particular, said glue 24 is supplied on a portion of the insole 23 through one or more glue suppliers 22.

[0040] Said glue suppliers 22 can move on said portion of the insole so as to follow a predetermined path and be pressingly engaged with the insole 23. The glue

suppliers 22 thus keep the insole 23 in contact with the underside 15 of the form 2.

[0041] This pressing contact allows to strengthen the adhesion of the insole 23 to the underside 15 preventing its removal during the step of supplying of the glue 24.

[0042] At the end of the step of supply of the glue 24 at least a supply element 22 disengages from the insole by a disengagement point 29 placed near the front end 31 of the insole 23.

[0043] At last all glue suppliers 22 disengage from the insole 23 and get back to their rest position.

[0044] After the glue 24 has been applied to the insole 23, first the means 14 for folding back the edges of the upper 21 towards the insole, and then also the means 16 for pressing underneath said edges against the insole 23 are actuated, thus ensuring the gluing of the upper 21 to the insole 23.

[0045] It should be noted that once the manufacturing of the shoe is over, the form 2 shall be removed from the upper 21. Therefore, the operation involving the separation of the insole 23 from the underside 15 should be easy to carry out.

[0046] Since the latter operation should be carried out without stressing exceedingly the gluing points so as to prevent their detachment, the choice of the adhesive to be used to associate the insole 23 to the underside 15 should be directed towards adhesives with a low adhesion power.

[0047] The use of such adhesives involves the premature separation of the insole 23 from the underside 15 of the form 2 in the time lapse between the step of supplying the glue 24 on the insole 23 and the following step of folding back the edge of the upper 21 on the insole 23. In particular, said separation - obviously unwanted - occurs with stiff insoles and by the front end of the insole, where the latter - having a more tapered shape - shows a greater difficulty for gluing.

[0048] In accordance with the method of the invention, in order to overcome the aforesaid drawbacks the supplying of the glue 24 on the insole 23 is advantageously carried out starting from the back portion of the insole 23 towards the front end 31 of said insole 23, as shown in the dynamic sequence of Figs. 6-10.

[0049] There are preferably two glue suppliers 22, so that each of them can supply the glue along corresponding different portions 26 of the insole 23.

[0050] In particular, said portions 26 define the contour 27 of the insole 23 along which the glue 24 is applied.

[0051] The glue suppliers 22 therefore are movable along corresponding portions 26 of the lateral contour 27 of the insole 23 which define the aforesaid predetermined path. Said path, which can vary according to the shape of the insole 23, is stored so as to control automatically the movement of said glue suppliers.

[0052] If the front end 31 of the insole 23 is extremely pointed, at the end of the step of supplying the glue 24, the two glue suppliers 22 both disengage from the insole

23 by a disengagement point 29 placed near the front end 31 of the insole 23. In particular, each of the glue suppliers will cross this point 29 at subsequent times so as to avoid interferences with the other supply element.

[0053] According to an alternative embodiment of the method, at the end of the step of supplying the glue 24 a first glue supplier disengages from the insole 23 by said point 29 placed by the front end 31, whereas the other element disengages by a second point 30 placed at a given distance from the point 29, so as not to interfere with the first element.

[0054] According to the aforesaid embodiment the disengagement points 29 and 30 are aligned on a longitudinal axis A-A of the insole 23 crossing the front end 31 of the insole 23.

[0055] The points indicated with 29 and 30 have been established to a mere indicative non-limiting purpose, foreseeing the possibility to change the disengagement position of the glue suppliers according to different construction requirements and different insole shapes.

[0056] From the above description it is evident that the movement of the glue suppliers 22 allows to operate with different shapes and sizes of the insole 23. Thus, for instance, the glue suppliers 22 can be moved so as to apply the glue to insoles for shoes with an extremely narrow and pointed toe.

[0057] As can be inferred from the description, the method for applying a glue to an insole and the machine for manufacturing shoes according to the invention allow to satisfy the requirements mentioned in the introduction to the present description and at the same time to overcome the drawbacks shown with reference to the prior art.

[0058] As a matter of fact, through the method for applying a glue according to the invention the upper can be glued to insoles of various sizes and shapes without replacing any part.

[0059] A further advantage of the method according to the invention consists in overcoming the technical problem of keeping the insole constantly in contact with the form underside until the end of the step of glue supplying so as to prevent its separation.

[0060] Concerning this it should be pointed out that in the machines of the prior art such drawbacks was solved by using a glue supplying plate whose presence, however, causes the problems mentioned with reference to known art.

[0061] A skilled person can obviously make several changes and variations to the machine for manufacturing shoes as described above. The scope of protection of the invention is however defined by the following claims.

55 Claims

1. Method for applying a glue (24) to an insole (23) for shoes by using a machine for manufacturing shoes,

comprising the following steps:

- positioning on a support element (4) a shoe form (2) on which an upper (21) is stretched and to whose underside (15) an insole (23) for shoes is associated, the latter extending between a back end (32) and a front end (31),
- supplying a glue (24) on a portion of the insole through one or more glue suppliers (22) which can move on said portion of the insole so as to follow a predetermined path and be pressingly engaged with the insole (23), to keep said insole (23) in contact with the underside (15) of the form (2),

characterized in that

- at the end of the step of supplying the glue (24) at least a glue supplier disengages from the insole (23) by a disengagement point (29) placed near the front end (31) of the insole (23).
2. Method according to claim 1, in which the glue (24) is supplied on the insole (23) starting from the back portion of the insole towards the front end of the insole (31).
 3. Method according to claim 1 or 2, in which said one or more glue suppliers (22) comprise two glue suppliers, each able to supply the glue (24) along different portions (26) of the insole (23).
 4. Method according to any of the claims 1 to 3, in which said glue (24) is applied along the contour (27) of the insole (23).
 5. Method according to claim 4, in which said glue suppliers (22) are moveable along corresponding portions of the lateral contour (27) of the insole (23) defining said predetermined path.
 6. Method according to claim 3, in which at the end of the step of supply of the glue (24) said glue suppliers both disengage from the insole (23) in said disengagement point (29), said two glue suppliers crossing said disengagement point (29) at subsequent times, so as to avoid interferences between the glue suppliers.
 7. Method according to claim 3, in which at the end of the step of supplying the glue (24) a first glue supplier disengages from the insole (23) by said disengagement point (29), and the other glue supplier disengages from the insole (23) by a second disengagement point (30) placed at a preset distance from said disengagement point (29), so as not to interfere with the first glue supplier.

8. Method according to claim 7, in which said disengagement points (29, 30) are aligned on a longitudinal axis (A-A) of the insole (23) crossing the front end (31) of the insole (23) itself.

9. Machine for manufacturing shoes with the method according to one of the claims 1 to 8, comprising:

- positioning means (5) for a shoe form (2), on which an upper (21) is stretched and to which an insole for shoes (23) is associated, the latter extending between a back end (32) and a front end (31),
- means (7, 8, 9) for fixing the form (2) on said positioning means (5),
- a plurality of tensioning grippers (13) for engaging with the contour of the upper (21) and pulling the upper (21) itself, causing it to adhere to the shoe form (2),
- means for folding (14) and pressing (16) the contour of the upper (21) onto the insole (23), and
- means (22) for supplying the glue (24) on the insole (23),

in which said means (22) for supplying the glue consist in one or more glue suppliers moving along said insole portion so as to follow a predetermined path and to be pressingly engaged with the insole (23), so as to keep said insole in contact with the underside (15) of the form (2), **characterized in that** at the end of the glue supplying step a glue supplier disengages from the insole (23) by a disengagement point (29) placed near the front end (31) of the insole (23).

10. Machine according to claim 9, in which said one or more glue suppliers move along said predetermined path starting from the back portion of the insole towards the front end of the insole (31).

Patentansprüche

1. Verfahren zum Aufbringen eines Klebers (24) auf eine Brandsohle (23) für Schuhe unter Verwendung einer Maschine zur Schuherstellung, das die folgenden Schritte aufweist:

- Positionieren einer Schuhform (2) auf einem Tragelement (4), auf dem ein Obermaterial (21) aufgespannt ist, und an dessen Unterseite (15) eine Brandsohle (23) für Schuhe angeordnet ist, wobei sich letztere zwischen einem Hinterende (32) und Vorderende (31) erstreckt,
- Zuführen eines Klebers (24) auf einen Abschnitt der Brandsohle mittels eines oder meh-

rerer Kleberzuführer (22), die sich auf dem Abschnitt der Brandsohle so bewegen können, dass sie einem festgelegten Weg folgen, und in Druck ausübendem Kontakt mit der Unterseite (15) der Form (2) stehen, um die Brandsohle (23) in Kontakt mit der Unterseite (15) der Form (2) zu halten,

dadurch gekennzeichnet, dass

- am Ende des Schritts des Zuführens des Klebers (24) zumindest ein Kleberzuführer sich von der Brandsohle (23) an einem Lösepunkt (29) löst, der nahe dem Vorderende (31) der Brandsohle (23) angeordnet ist.

2. Verfahren nach Anspruch 1, **dadurch gekennzeichnet,** bei dem der Kleber (24) auf die Brandsohle (23) beginnend von dem Hinterabschnitt der Brandsohle zu dem Vorderabschnitt der Brandsohle (31) aufgetragen wird.
3. Verfahren nach Anspruch 1 oder 2, bei dem der eine oder die mehreren Kleberzuführer (22) zwei Kleberzuführer aufweisen, von denen jeder den Kleber (24) entlang verschiedener Abschnitte (26) der Brandsohle (23) zuführen kann.
4. Verfahren nach einem der Ansprüche 1 bis 3, bei dem der Kleber (24) entlang der Randlinie (27) der Brandsohle (23) aufgebracht wird.
5. Verfahren nach Anspruch 4, bei dem die Kleberzuführer (22) entlang einander entsprechender Abschnitte der Außenumrisslinie (27) der Brandsohle (23) bewegbar sind, die den festgelegten Weg bestimmen.
6. Verfahren nach Anspruch 3, bei dem am Ende des Schritts des Zuführens des Klebers (24) beide Kleberzuführer sich von der Brandsohle (23) an dem Lösepunkt (29) lösen, wobei die zwei Kleberzuführer den Lösepunkt (29) zu aufeinanderfolgenden Zeitpunkten überlaufen, um Überschneidungen zwischen den Kleberzuführern zu vermeiden.
7. Verfahren nach Anspruch 3, bei dem am Ende des Schritts des Zuführens des Klebers (24) ein erster Kleberzuführer sich von der Brandsohle (23) an dem Lösepunkt (29) löst und der andere Kleberzuführer sich von der Brandsohle (23) an einem zweiten Lösepunkt (30) löst, der in einem festgelegten Abstand von dem Lösepunkt (29) angeordnet ist, um nicht störend auf den ersten Kleberzuführer einzuwirken.

8. Verfahren nach Anspruch 7, bei dem die Lösepunkte (29, 30) auf einer Längsachse (A-A) der Brandsohle (23) ausgerichtet sind, die das Vorderende (31) der Brandsohle (23) schneidet.

9. Maschine zum Herstellen von Schuhen mittels dem Verfahren nach einem der Ansprüche 1 bis 8 mit:

- Positioniermitteln (5) für eine Schuhform (2), auf der ein Obermaterial (21) aufgespannt ist, und an der eine Brandsohle (23) für Schuhe angeordnet ist,

wobei sich letztere zwischen einem Hinterende (32) und Vorderende (31) erstreckt,

- Mitteln (7, 8, 9) zum Fixieren der Form (2) auf den Positioniermitteln (5),

- einer Mehrzahl von Spanngreifern (13) zum Greifen des Obermaterialrands (21) und Ziehen des Obermaterials (21), um dieses an der Schuhform (2) festzuhalten,

- Mitteln zum Falten (14) und Pressen (16) des Obermaterialrands (21) auf die Brandsohle (23), und

- Mitteln (22) zum Zuführen des Klebers (24) auf die Brandsohle (23),

wobei die Mittel (22) zum Zuführen des Klebers aus einem oder mehreren Kleberzuführern bestehen, die sich auf dem Abschnitt der Brandsohle so bewegen, dass sie einem festgelegten Weg folgen, und in Druck ausübendem Kontakt mit der Unterseite (15) der Form (2) stehen, um die Brandsohle (23) in Kontakt mit der Unterseite (15) der Form (2) zu halten,

dadurch gekennzeichnet,

dass am Ende des Schritts des Zuführens des Klebers (24) zumindest ein Kleberzuführer sich von der Brandsohle (23) an einem Lösepunkt (29) löst, der nahe dem Vorderende (31) der Brandsohle (23) angeordnet ist.

10. Maschine nach Anspruch 9, bei der der eine oder die mehreren Kleberzuführer sich beginnend von dem Hinterabschnitt der Brandsohle zu dem Vorderabschnitt der Brandsohle (31) auf dem festgelegten Weg bewegen.

55 Revendications

1. Procédé d'application de colle (24) sur une première (23) pour des chaussures en utilisant une machi-

ne permettant de fabriquer des chaussures, comprenant les étapes suivantes :

positionnement sur un élément de support (4) d'une forme de chaussure (2) sur laquelle une tige (21) est étirée et dont le dessous (15) d'une première (23) pour chaussure est associée, cette dernière s'étendant entre une extrémité arrière (32) et une extrémité avant (31) ; alimentation en colle (24) sur une partie de la première via un ou plusieurs dispositif(s) d'alimentation en colle (22) qui peuvent se déplacer sur ladite partie de la première de manière à suivre un chemin prédéterminé et à être engagée par pression avec la première (23), pour maintenir ladite première (23) en contact avec le dessous (15) de la forme (2) ;

caractérisé en ce que

à la fin de l'étape d'alimentation de la colle (24) au moins un dispositif d'alimentation en colle se dégage de la première (23) au niveau d'un point de dégagement (29) placé près de l'extrémité avant (31) de la première (23).

2. Procédé selon la revendication 1, dans lequel la colle (24) est fournie sur la première (23) depuis la partie arrière de la première vers l'extrémité avant de la première (31).
3. Procédé selon la revendication 1 ou 2, dans lequel ledit un ou lesdits plusieurs dispositif(s) d'alimentation en colle (22) comprennent deux dispositifs d'alimentation en colle, chacun pouvant fournir la colle (24) le long de différentes parties (26) de la première (23).
4. Procédé selon l'une quelconque des revendications 1 à 3, dans lequel ladite colle (24) est appliquée le long du contour (27) de la première (23).
5. Procédé selon la revendication 4, dans lequel lesdits dispositifs d'alimentation en colle (22) peuvent se déplacer le long de parties correspondantes du contour latéral (27) de la première (23) définissant ledit chemin prédéterminé.
6. Procédé selon la revendication 3, dans lequel à la fin de l'étape d'alimentation en colle (24) lesdits dispositifs d'alimentation en colle se dégagent tous les deux de la première (23) au niveau dudit point de dégagement (29), lesdits deux dispositifs d'alimentation en colle croisant ledit point de dégagement (29) à des moments successifs, de manière à éviter les interférences entre les dispositifs d'alimentation en colle.
7. Procédé selon la revendication 3, dans lequel à la

fin de l'étape d'alimentation en colle (24), un premier dispositif d'alimentation en colle se dégage de la première (23) au niveau dudit point de dégagement (29), et l'autre dispositif d'alimentation en colle se dégage de la première (23) au niveau d'un deuxième point de dégagement (30) placé à une distance prédéterminée dudit point de dégagement (29), de manière à ne pas interférer avec le premier dispositif d'alimentation en colle.

8. Procédé selon la revendication 7, dans lequel lesdits points de dégagement (29, 30) sont alignés sur un axe longitudinal (A-A) de la première (23) croisant l'extrémité avant (31) de la première (23) elle-même.
9. Machine de fabrication de chaussures par le procédé selon l'une des revendications 1 à 8, comprenant :

des moyens de positionnement (5) pour une forme de chaussure (2), sur lesquels une tige (21) est étirée et auxquels une première pour chaussure (23) est associée, cette dernière s'étendant entre une extrémité arrière (32) et une extrémité avant (31) ;

des moyens (7, 8, 9) permettant de fixer la forme (2) sur lesdits moyens de positionnement (5) ;

une pluralité de dispositifs de serrage et de tensionnement (13) pour engager le contour de la tige (21) et retirer la tige (21) elle-même, en la faisant adhérer à la forme de chaussure (2) ; des moyens permettant de plier (14) et de comprimer (16) le contour de la tige (21) sur la première (23) et

des moyens (22) permettant de fournir la colle (24) sur la première (23),

dans lesquels lesdits moyens (22) permettant de fournir la colle consistent en un ou plusieurs dispositif(s) d'alimentation en colle se déplaçant le long de ladite partie de première de manière à suivre un chemin prédéterminé et à s'engager avec pression dans la première (23), de manière à maintenir ladite première en contact avec le dessous (15) de la forme (2), **caractérisé en ce qu'**à la fin de l'étape d'alimentation en colle, un dispositif d'alimentation en colle se dégage de la première (23) au niveau d'un point de dégagement (29) placé près de l'extrémité avant (31) de la première (23).

10. Machine selon la revendication 9, dans laquelle ledit un ou lesdits plusieurs dispositif(s) d'alimentation en colle se déplacent le long du chemin prédéterminé partant de la partie arrière de la première vers l'extrémité avant de la première (31).

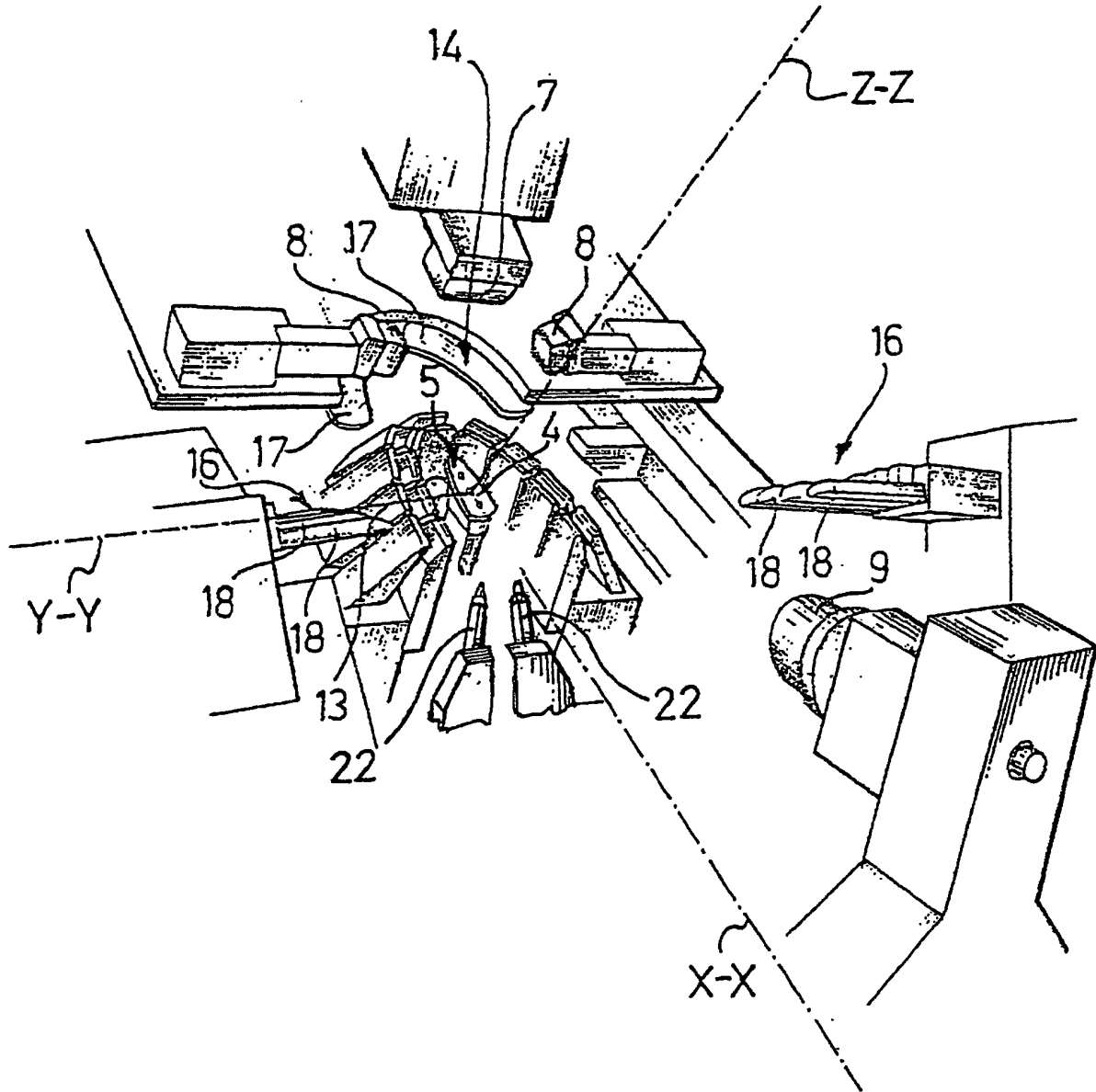
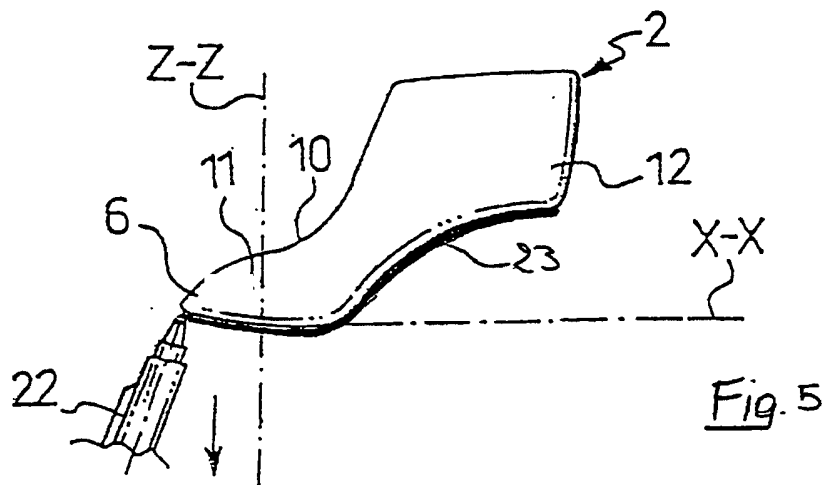
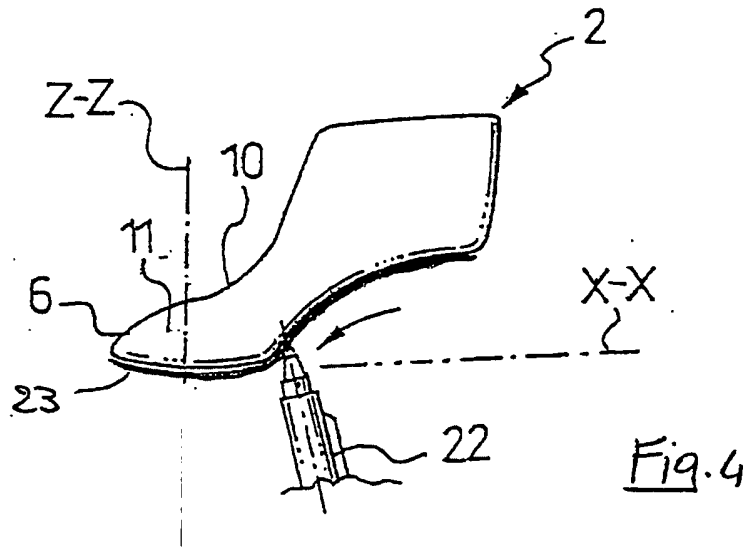
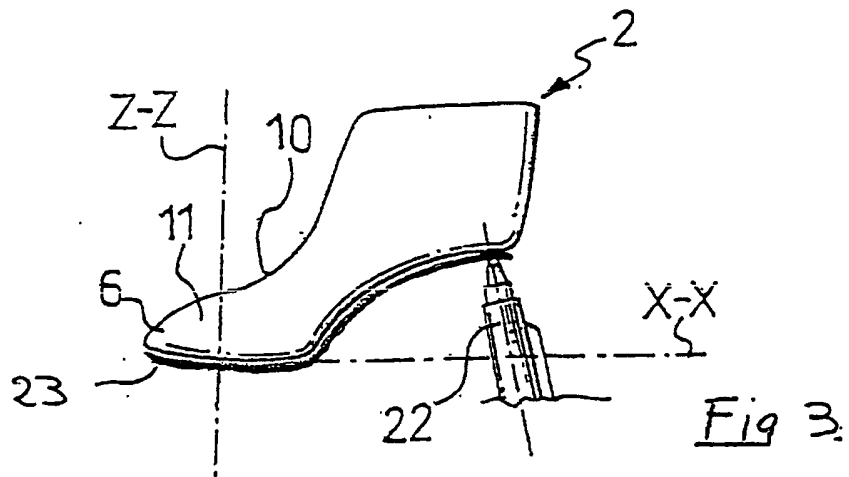


Fig. 2



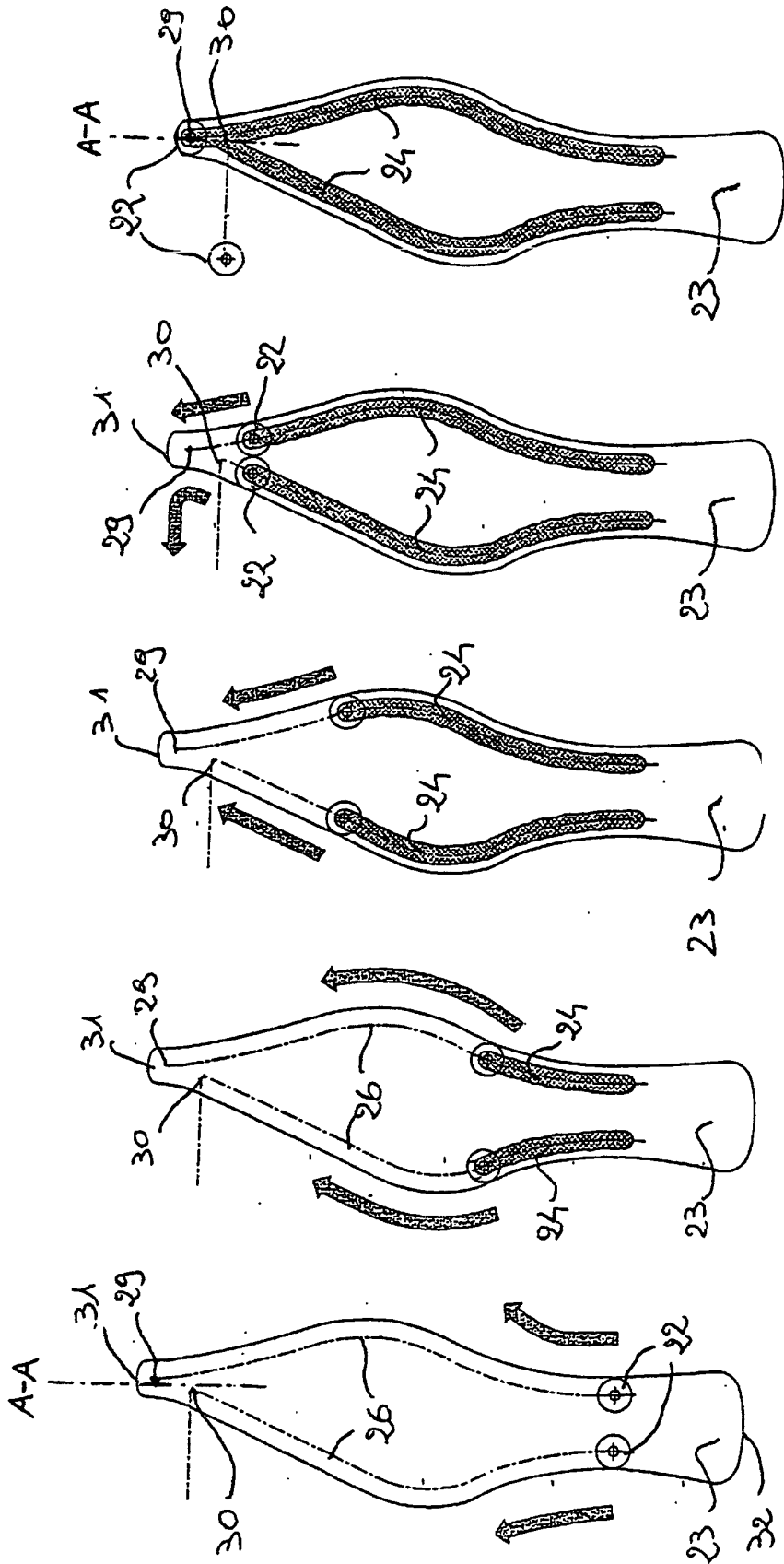


Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

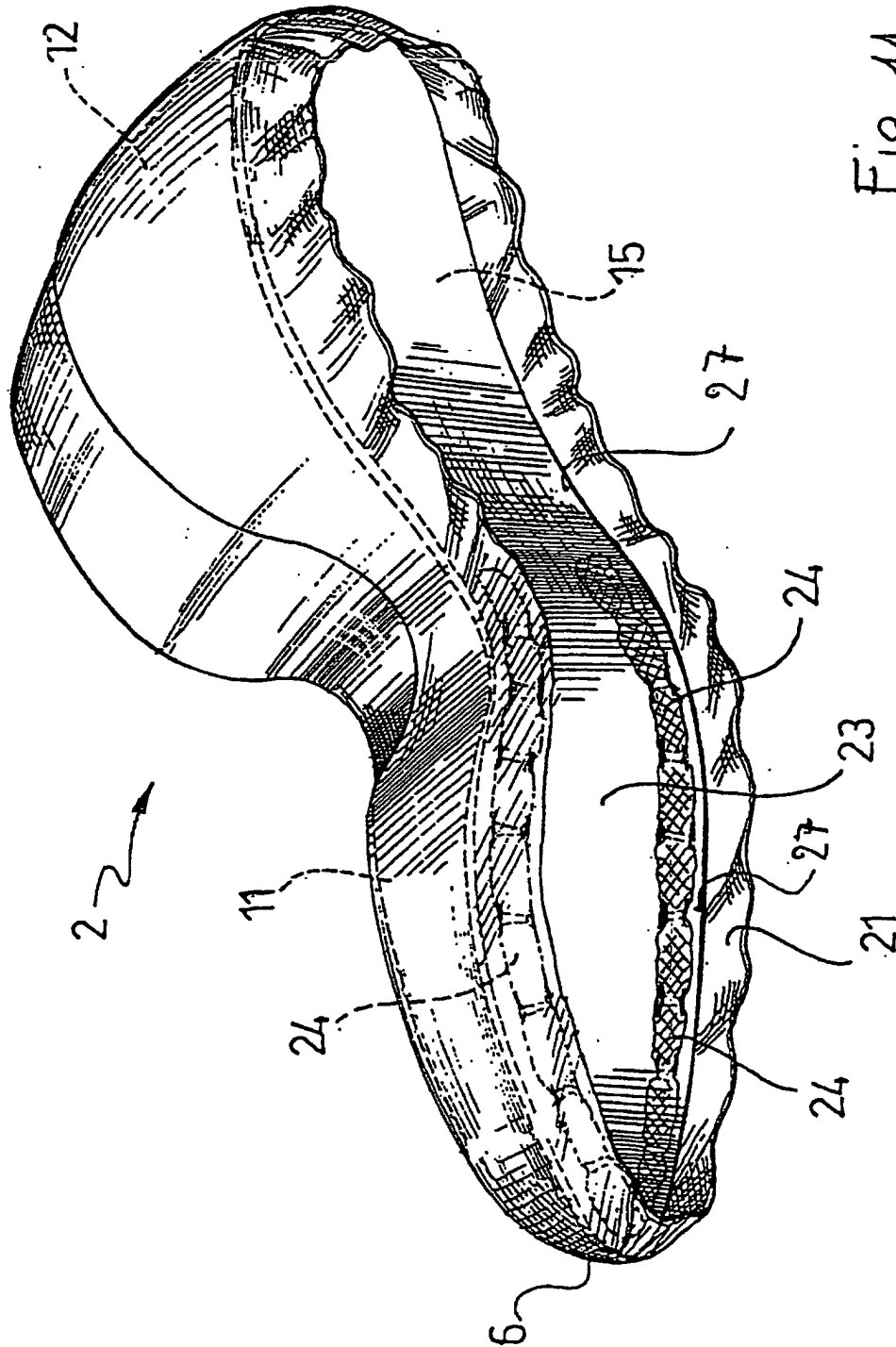


Fig. 14