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(54) Carding-cementing machine for shoes

Vorrichtung zum Aufrauhren und Kleben von Schuhen

Machine de cardage et collage de chaussures

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Description

It is known that in making shoes the shoe bottom is submitted to the action of a carding machine for eliminating the step formed on bending of the vamp edges onto the shoe bottom and for improving setting of the next vamp cementing operation.

For speeding up the different operations, automatic carding machines have been conceived on which an operator sequentially mounts the shoes to be processed. Following a predetermined program, a machine moves a head of a roughening tool along the shoe edge. When the operation has been completed, the operator takes the shoe away from the machine and mounts it again on a next automatic machine provided with a cement-applying head which also moves along the shoe bottom according to a predetermined program.

It is well apparent that the processing involves down time as a result of the continuous operations for mounting and removing shoes from the machines. In addition, the cementing head hardly follows the roughened track formed by the carding machine in an accurate and exact manner due to the unavoidable inexactitudes occurring when the shoe is mounted to the supports of the two machines.

The general object of the present invention is to obviate the above drawbacks by providing an automatic machine capable of carrying out both roughening and cementing operations, while at the same time optimizing the processing time by the simultaneous working of two shoes.

In view of the above object, in accordance with the invention as defined in claim 1, a carding-cementing machine for shoes has been conceived which comprises a pair of supports each supporting a shoe to be worked, a first and a second working head being disposed above said supports, the first working head comprising a carding tool and the second head comprising a cement-delivering tool, said supports and working heads being mutually movable so that the carding tool can travel over a predetermined path on the bottom of a shoe disposed on the first support while the cementing tool can cover a predetermined path on the bottom of a second shoe disposed on the second support, the mutual positions between the supports and the working heads being interchangeable with respect to each other so that the carding tool may be also capable of travelling over a predetermined path on the bottom of a shoe disposed on the second support, while the cementing tool can follow a predetermined path on the bottom of another shoe disposed on the first support.

For better explaining the innovatory principles of the present invention and the advantages it offers as compared to the known art, a possible embodiment of the invention putting said principles into practice will be given hereinafter by way of non-limiting example with the aid of the accompanying drawings, in which:

- Fig. 1 is a diagrammatic elevational front view of a

machine according to the invention;

- Fig. 2 is a sectional view taken along line II-II in Fig. 1.

Referring to the drawings, as clearly shown in Fig. 1, a machine in accordance with the invention and generally denoted by 10 comprises a supporting frame 11 bearing two carriages 12, 13, each designed to receive a corresponding last or shoe to be made 14, 15 having its bottom turned upwardly.

As better shown in Fig. 2 and explained in the following, carriages 12, 13 are movable transversely of the machine extension along horizontal guide rails 16, 17. One working or carding head 18 and a second working or cementing head are present above the carriages 12, 13. The first working head 18 is movable horizontally in a direction longitudinal to the machine along guide rails 19 supported by a carriage 20 which in turn is vertically movable along guides 21 fastened to the frame 11. For example, movement of the head 18 can take place by a lead-screw unit 22 operated by an electric motor 23, whereas the vertical movement of carriage 20 can take place by means of a second lead-screw unit 24 operated by an electric motor 25.

The second working head 26 is on the contrary movable vertically along a vertical guide 27, in turn supported by a carriage 28 horizontally movable along guide rails 29 supported by the frame 11 and parallel to the guide rails 19.

For example, movement of the head 26 can take place by means of a lead-screw unit 30 operated by an electric motor 31, whereas the horizontal movement of carriage 28 can take place by means of a second lead-screw unit 32 operated by an electric motor 33.

As can be viewed from Fig. 2, the guides by which the frame supports said heads are offset with respect to each other in a horizontal direction transversely of the machine, so that mutual interferences of the heads are avoided while said heads are moving. Carriages 12, 13 supporting the shoe are power driven to be movable along the respective guide rails 16, 17 between a retracted position and an advanced position which are located to the farthest right and left ends respectively, as viewed looking Fig. 2. Means for actuating carriages 12, 13, not shown for the sake of simplicity, can consist of power driven screw-lead units, as described above with reference to the working head.

It is obvious that, by moving the support carriages 12, 13, shoes can be alternately brought to intersect the vertical planes parallel to each other in which the first or second head moves.

The support carriages 12, 13 are identical with each other and comprise a base 34, 35 slidable on respective guide rails 16, 17. Each base 34, 35 carries a fixed rear support and a movable front support for the shoe. Also located on the base is a central reclining support.

Since carriages 12, 13 are identical with each other, only one carriage 12 will be described for the sake of

simplicity, referring particularly to Fig. 2. As shown in said figure, the rear supporting portion 38 comprises two grippers 39 for laterally tightening the shoe heel area.

The central support portion comprises a post 36 adjustable in height, on top of which the shoe last carrying the shoe is fitted, said post being pivotally mounted at the rear part thereof according to an axis 41 enabling it to be tilted forward by means of an actuator 42, thereby moving from the upright position drawn in solid line in the figure to the inclined position drawn in chain line.

The front support portion 43 comprises a slide 44 horizontally movable along guide rails 45 parallel to the shoe extension.

The slide movement can be obtained by power driven screw-lead units not shown in the drawing for the sake of clarity.

Grippers 40 are disposed on the slide 44 for laterally tightening the toe portion of the shoe, and also provided is a locking device 46 for the shoe toe. The device 46 comprises an actuator 47 designed to move it vertically.

For loading a shoe on the support the slide 44 moves forward to the position in chain line and the central support is tilted forward for facilitating fitting (this is particularly useful in case of boots). After the shoe has been positioned on the central support 36, the latter goes back to the upright position, the slide 44 moves back towards the shoe and grippers 39 and 40 are tightened. The locking device 46 rises and entraps the shoe toe, which is therefore perfectly fixed.

The toe locking device ensures the exact positioning of the shoe relative to the working heads.

The head 18 comprises a rotating carding brush 54 movable along the periphery of the shoe bottom. Said carding head 18, being the object of an Italian patent application No.MI91A000950 in the name of the same Applicant, will not be described in detail but only enough to enable comprehension of the present invention

In particular, the head 18 comprises a slide 48 for movement along the guide rails 19. Fastened to the slide 48 is a sleeve 49 for rotation of an arm 50 about a vertical axis 51 by means of actuators 52. The arm 50 carries a second arm 53 supporting the power driven carding rotating brush 54. The arm 53 is movable in the brush plane to enable said brush to rest on the shoe bottom while exerting a predetermined pressure. The arm 53 may also be rotated by an actuating means 55 to enable tilting of the brush plane about a tangency line of the brush to the shoe, so that the brush can be kept tangent to the shoe bottom while the tool is being moved.

The axis 51 substantially passes through the contact point of the brush with the shoe bottom so that upon operation of actuators 52, the brush plane rotates through 180° about this contact point. By virtue of this, the brush, while rotating always in the same direction, has a rotatory movement at the tangency point with the

shoe bottom which is always directed towards the inside of said bottom over the whole travel of the head along the shoe perimeter.

The cementing machine 26 comprises on the contrary a nozzle 56 dispensing cement in a controlled manner. Such a nozzle 56 is surrounded by a spreading brush 57 rotatably moved about the nozzle axis by a motor 58 so that cement can be uniformly distributed.

The nozzle is supported by a kinematic mechanism for its controlled tilting according to planes transverse and longitudinal to the shoe, so that the nozzle can be maintained always perpendicular to the shoe bottom while it is moving for carrying out the cementing operation.

In particular, the cementing head 26 comprises a slide 59 slidable along a vertical guide 27. Supported by the slide 59 is a first arched guide 60 extending in a plane transverse to the machine. Slidable on the arched guide 60 is a carriage 61 moved by an actuator 62 and supporting a second arched guide 63 extending in a plane longitudinal to the machine. Slidable on said second arched guide 63 is a carriage 64 driven by an actuator 65 and supporting the delivery nozzle 56.

As a person skilled in the art can easily understand, the bending centres of the arched guides are adapted to identify a rotation centre coinciding with the nozzle delivery end. In this manner, by moving the carriages on said guides, the nozzle tilts while at the same time keeping its outlet end fixed.

All actuators and mechanisms of the above machine are connected to a control device 66 substantially of known type and therefore not shown in detail as it can be easily envisaged by a person skilled in the art. For example, such a control device may be embodied by an electronic microprocessor circuit suitably programmed, as will be apparent from the following description concerning operation.

Supposing to start, in use, by loading a shoe onto the right-hand carriage 12. Once the shoe has been locked on the carriage, the carding and roughening head begins moving, carrying out lifting, lowering and left and right traverse movements, whereas the carriage 12 moves to and fro so that the brush 54 travels over a predetermined path along the shoe bottom. This path can be contained in an appropriate memory of the device 66 where it has been stored during a previous instruction step of the machine.

In particular, the brush will travel over one shoe edge and will then rotate through 180° so as to follow the opposite shoe edge. Upon the brush passing close to the shoe toe, the device 47 will retract the locking device 46, in order to let the brush freely pass, said locking device being immediately afterwards positioned in place again.

When work is over, the carding head will park in a position at which it does not interfere with the shoe and the work heads change of place relative to each other sliding along the respective horizontal guide rails.

By its own movement and the corresponding move-

ment of carriage 12, the cement-delivering nozzle can therefore travel over its path along the shoe bottom as established, while keeping its outlet opening always tangent thereto.

While the cementing tool follows its travel path previously inputted to the control device 66, another shoe can be mounted on the left-hand carriage 13. The carding device can therefore take the predetermined path on this new shoe while the cementing operation is being completed on the first shoe.

Once the cementing operation of the first shoe has been completed, the operator can unload the shoe last from the machine. When the carding tool has finished working on the second shoe, the tools will change of place relative to each other again, so that the cementing tool will be able to cement the second shoe. In the meantime the operator will be able to load the machine with a third shoe and so forth. It will be recognized that the working process can go on uninterruptedly, without those pause periods which are typical in traditional machines for loading and unloading operations. In addition, carding and cementing operations are carried out on a shoe without moving it from the support and therefore in a very precise manner.

At this point it is apparent that the intended purposes are achieved by providing a machine of high precision and speed.

Obviously the above description of an embodiment applying the innovatory principles of the invention is for purposes of illustration only and is not limitative of the invention as defined by the appended claims. For example, the actuators may be embodied either by electric, or pneumatic or hydraulic elements. In addition, the carding head may also be a traditional head provided with two rotating brushes, disposed on either side of the shoe to be processed.

Claims

1. A carding-cementing machine for shoes comprising: a first and second support (12, 13), each of them supporting a shoe (14, 15) to be worked; a first and a second working head (18, 26) being disposed above said supports (12, 13) and being movable in vertical planes parallel to each other, said first working head (18) comprising a carding tool (54) and said second working head (26) comprising a cement-delivering tool (56); and working heads driving means (23, 25; 31, 33) and supports driving means reciprocally cooperating so as to:
 - position said working heads (18, 26), along predetermined paths on the bottom of the shoes (14, 15) disposed on said supports (12, 13);
 - exchange the mutual position of the supports (12, 13) and of the working heads (18, 26) between a first working position in which the first and second working heads work respectively on the first and second shoe supports (12, 13) and a second working position in which the first and second working heads work respectively on the second and first shoe supports (13, 12).
2. A machine as claimed in claim 1, wherein said first and second supports (12, 13) are slidable along respective parallel horizontal guide rails (16, 17) and in that said first and second working heads (18, 26) are slidable along respective parallel vertical guides (21, 27) and along respective parallel horizontal guide rails (19, 29) transverse to the guide rails (16, 17) of said first and second supports (12, 13).
3. A machine as claimed in claim 2, wherein the first and second supports (12, 13) are moved along their horizontal guide rails (16, 17) by two lead-screw units driven by respective electric motors.
4. A machine as claimed in claim 2, wherein the first working head (18) is moved along its horizontal guide rails (19) by a first lead-screw unit (22) driven by a first electrical motor (23), and said guide rails (19) are supported by a carriage (20) slidable along vertical guides (21) by a second lead-screw unit (24) driven by a second electric motor (25).
5. A machine as claimed in claim 2, wherein the second working head (26) is moved along its vertical guide (27) by a third lead-screw unit (30) driven by a third electric motor (31), and said vertical guide (27) is supported by a carriage (28) slidable along horizontal guide rails (29) by a fourth lead-screw unit (32) driven by a fourth electric motor (33).
6. A machine as claimed in claims 1 to 5, wherein said working heads driving means comprises said first, second, third and fourth electric motors (23, 25, 31, 33) apt to drive the first and second working heads (18, 26), and said support driving means comprises the two electric motors apt to drive the first and second supports (12, 13).
7. A machine as claimed in claim 1, wherein the carding tool comprises at least one rotary carding brush (54) provided with rotary and tilting support means (50, 53).
8. A machine as claimed in claim 7, wherein said rotary means comprises a support (50) rotating about a vertical axis (51) substantially passing through the contact point between the peripheral edge of the carding brush (54) and the bottom of the shoe being worked.
9. A machine as claimed in claim 7, wherein said tilting means comprises a brush-supporting arm (53)

tilted by actuator means (55) for imparting to the brush (54) an inclination in its plane about the brush tangent passing in the point of the shoe bottom being worked.

10. A machine as claimed in claim 1, wherein the cement-delivering tool comprises a cement-delivering nozzle (56) provided with two mutually perpendicular tilting support means (60, 63).
11. A machine as claimed in claim 10, wherein the cement-delivering nozzle (56) comprises a spreading brush (57) rotating around, and in coaxial relation with, the cement-delivering nozzle (56).
12. A machine as claimed in claim 10, wherein said tilting support means comprises a first (60) and a second (63) arched guides the bending centres of which are adapted to identify a rotation centre coinciding with the nozzle delivering end (57), said nozzle (56) being slidably supported by said guides (60, 63) for its controlled inclination about said rotation centre.
13. A machine as claimed in claim 1, wherein each of said pair of shoe supports (12, 13) comprises a rear support (38) provided with grippers (39) for laterally tightening the shoe heel area, a front support (43) provided with grippers (40) for laterally tightening the shoe toe area, and a central support (36) for supporting the shoe last.
14. A machine as claimed in claim 13, wherein the front support (43) comprises a toe locking device (46) operable for being moved from a position at which it does not interfere with the shoe toe to a position at which it comes into contact with the shoe toe and locks it.
15. A machine as claimed in claim 13, wherein the front support (43) is movable in the longitudinal direction of the shoe.
16. A machine as claimed in claim 13, wherein the central support (36) can be inclined towards the front portion of the machine, so as to facilitate fitting on the last thereon.

Patentansprüche

1. Eine Aufrauh/Klebe-Maschine für Schuhe mit: einem ersten und einem zweiten Träger (12,13), die jeweils einen zu bearbeitenden Schuh (14, 15) tragen; einem ersten und einem zweiten Arbeitskopf (18, 26), die oberhalb der Träger (12, 13) angeordnet und in vertikalen Ebenen parallel zueinander beweglich sind, wobei der erste Arbeitskopf (18) ein Aufrauh-Werkzeug (54) und der zweite Arbeitskopf (26) ein einen Klebstoff zuführendes Werkzeug

(56) aufweist; und die Arbeitsköpfe antreibenden Mitteln (23, 25; 31, 33) und die Träger antreibende Mittel, die derart zusammenwirken, daß:

- 5 - die Arbeitsköpfe (18, 26) entlang vorgegebener Wege an den Sohlen der Schuhe (14, 15), die an den Trägern (12, 13) angeordnet sind, positioniert werden; und
- 10 - die gegenseitigen Positionen der Träger (12, 13) und der Arbeitsköpfe (18, 26) zwischen einer ersten Arbeitsposition, in der der erste und der zweite Arbeitskopf jeweils auf den ersten bzw. den zweiten Schuhträger (12, 13) wirken und einer zweiten Arbeitsposition, in der der erste bzw. der zweite Arbeitskopf auf den zweiten bzw. den ersten Schuhträger (13, 12) wirkt, getauscht wird.
- 15
- 20 2. Eine Maschine nach Anspruch 1, wobei der erste und der zweite Träger (12, 13) entlang jeweiliger paralleler horizontaler Führungsschienen (16, 17) gleitbar sind und daß der erste und der zweite Arbeitskopf (18, 26) entlang jeweiliger paralleler vertikaler Führungen (21, 27) und entlang jeweiliger paralleler horizontaler Führungsschienen (19,29) quer zu den Führungsschienen (16, 17) des ersten und des zweiten Trägers (12, 13) gleitbar sind
- 25
- 30 3. Eine Maschine nach Anspruch 2, wobei der erste und der zweite Träger (12, 13) entlang ihrer horizontalen Führungsschienen (16, 17) durch zwei Gewindestangeneinheiten, die jeweils durch Elektromotoren angetrieben werden, bewegt werden.
- 35
4. Eine Maschine nach Anspruch 2, wobei der erste Arbeitskopf (18) entlang seiner horizontalen Führungsschienen (19) durch eine erste Spindelstange (22), die von einem ersten Elektromotor (23) angetrieben wird, bewegt wird und die Führungsschienen (19) von einem Schlitten (20) getragen wird, der entlang vertikaler Führungen (21, 27) durch eine zweite Spindelstangeneinheit (24), die von einem zweiten Elektromotor (25) angetrieben wird, getragen wird.
- 40
- 45
5. Eine Maschine nach Anspruch 2, wobei der zweite Arbeitskopf (26) entlang seiner vertikalen Führung (27) über eine dritte Spindelstangeneinheit (30), die von einem dritten Elektromotor (31), bewegt wird, und die vertikale Führung (27) von einem Schlitten (28) getragen wird, der über eine vierte Spindelstangen-Einheit (32), die von einem vierten Elektromotor (33) angetrieben wird, entlang horizontaler Führungsschienen (29) gleitbar ist.
- 50
- 55
6. Eine Maschine nach einem der Ansprüche 1 bis 5, wobei die Antriebsmittel für die Arbeitsköpfe für einen ersten, zweiten, dritten und vierten Elektro-

- motor (23, 25, 31, 33) aufweisen, die dazu eingerichtet sind, den ersten und den zweiten Arbeitskopf (18, 26) anzutreiben und wobei die Antriebsmittel für den Träger zwei Elektromotoren aufweisen, um den ersten bzw. den zweiten Träger (12, 13) anzutreiben. 5
7. Eine Maschine nach Anspruch 1, wobei das Aufrauhwerkzeug wenigstens eine sich drehende Aufrauhbürste (54) aufweist, die mit sich drehenden und sich neigenden Stützmitteln (50, 53) versehen sind. 10
8. Eine Maschine nach Anspruch 7, wobei die Drehmittel einen Träger (50) aufweist, der sich um eine vertikale Achse (51) dreht, die im wesentlichen durch den Berührungspunkt zwischen dem umlaufenden Rand der Aufrauh-Bürste (54) und der Sohle des zu bearbeitenden Schuhs verläuft. 15
9. Eine Maschine nach Anspruch 7, wobei das Kippmittel einen Bürstentragarm (53) aufweist, der über ein Betätigungsmittel (55) gekippt wird, um auf die Bürste (54) eine Neigung in ihrer Ebene um die Bürstentangente, die durch den Punkt der bearbeiteten Schuhsohle verläuft, aufzubringen. 20
10. Eine Maschine nach Anspruch 1, wobei das Werkzeug zum Aufbringen des Klebstoffs eine Klebstoffzufuhrdüse (56) aufweist, die mit zwei zueinander rechtwinkligen Kippstützmitteln (60, 63) versehen ist. 25
11. Eine Maschine nach Anspruch 10, wobei die einen Klebstoff zuführende Düse (56) eine Spreizbürste (57) aufweist, die sich um und koaxial zu der den Klebstoff zuführenden Düse (56) dreht. 30
12. Eine Maschine nach Anspruch 10, wobei das Kippstützmittel eine erste (60) und eine zweite Bogenführung (63) aufweist, deren Krümmungszentren dazu eingerichtet sind, einen Drehmittelpunkt zu bilden, der mit dem Ende (57) der Zufuhrdüse übereinstimmt, wobei die Düse (56) für eine gesteuerte Neigung um den Drehmittelpunkt von den Führungen (60, 63) gleitend getragen wird. 40
13. Eine Maschine nach Anspruch 1, wobei jeder aus dem Paar von Schuhträgern (12, 13) einen rückwärtigen Träger (38), der mit Greifern (39) zum lateralen Halten des Bereichs der Hacke des Schuhs versehen ist, einen vorderen Träger (43), der mit Greifern (40) zum lateralen Halten der Spitze des Schuhs versehen ist, und einen zentralen Träger (36) zum Tragen der Leiste des Schuhs aufweist. 45
14. Eine Maschine nach Anspruch 13, wobei die vordere Stütze (43) eine die Schuhspitze verriegelnde Einrichtung (46) aufweist, die betätigt werden kann,

um von einer Position, in der sie mit der Schuhspitze nicht in Berührung kommt, in eine Position, in der sie mit der Schuhspitze in Berührung kommt und diese verriegelt, bewegt zu werden.

15. Eine Maschine nach Anspruch 13, wobei die vordere Stütze (43) in der Längsrichtung des Schuhs beweglich ist.
16. Eine Maschine nach Anspruch 13, wobei die zentrale Stütze (36) in Richtung auf den vorderen Abschnitt der Maschine geneigt werden kann, um so das Aufbringen der Leiste auf diesen zu erleichtern.

Revendications

1. Machine de grattage et de collage pour chaussures comprenant: un premier et un second support (12, 13), chacun d'eux supportant une chaussure (14, 15) à travailler; une première et une seconde têtes de travail (18, 26) étant disposées au-dessus desdits supports (12, 13) et étant mobiles dans des plans verticaux parallèles, ladite première tête de travail (18) comprenant un outil de grattage (54) et ladite seconde tête de travail (26) comprenant un outil de distribution de colle (56); et des moyens d'entraînement de têtes de travail (23, 25; 31, 33) et des moyens d'entraînement de supports coopérant réciproquement afin de :
- positionner lesdites têtes de travail (18, 26) le long de trajectoires prédéterminées sur le dessous des chaussures (14, 15) disposées sur lesdits supports (12, 13);
 - échanger la position mutuelle des supports (12, 13) et des têtes de travail (18, 26) entre une première position de travail dans laquelle les première et seconde têtes de travail travaillent respectivement sur les premier et second supports de chaussure (12, 13) et une seconde position de travail dans laquelle les première et seconde têtes de travail travaillent respectivement sur les second et premier supports de chaussure (13, 12).
2. Machine selon la revendication 1, dans laquelle lesdits premier et second supports (12, 13) sont adaptés à coulisser le long de rails de guidage horizontaux parallèles respectifs (16, 17) et en ce que lesdites première et seconde têtes de travail (18, 26) sont adaptées à coulisser le long de guides verticaux parallèles respectifs (21, 27) et le long de rails de guidage horizontaux parallèles respectifs (19, 29) transversaux aux rails de guidage (16, 17) desdits premier et second supports (12, 13).
3. Machine selon la revendication 2, dans laquelle les premier et second supports (12, 13) sont déplacés

- le long de leurs rails de guidage horizontaux (16, 17) par deux unités de tige filetée entraînées par des moteurs électriques respectifs.
4. Machine selon la revendication 2, dans laquelle la première tête de travail (18) est déplacée le long de ses rails de guidage horizontaux (19) par une première unité de tige filetée (22) entraînée par un premier moteur électrique (23), et lesdits rails de guidage (19) sont supportés par un chariot (20) entraîné à coulisser le long des guides verticaux (21) par une deuxième unité de tige filetée (24) entraînée par un deuxième moteur électrique (25).
5. Machine selon la revendication 2, dans laquelle la seconde tête de travail (26) est déplacée le long de son guide vertical (27) par une troisième unité de tige filetée (30) entraînée par un troisième moteur électrique (23), et ledit guide vertical (27) est supporté par un chariot (28) entraîné à coulisser le long des rails de guidage horizontaux (29) par une quatrième unité de tige filetée (32) entraînée par un quatrième moteur électrique (33).
6. Machine selon l'une quelconque des revendications 1 à 5, dans laquelle lesdits moyens d'entraînement de têtes de travail comprennent lesdits premier, deuxième, troisième et quatrième moteurs électriques (23, 25; 31, 33) adaptés à entraîner les première et seconde têtes de travail (18, 26), et lesdits moyens d'entraînement de supports comprennent les deux moteurs électriques adaptés à entraîner les premier et second supports (12, 13).
7. Machine selon la revendication 1, dans laquelle l'outil de grattage comprend au moins une brosse de grattage rotative (54) dotée d'un moyen de support à rotation et inclinaison (50, 53).
8. Machine selon la revendication 7, dans laquelle ledit moyen rotatif comprend un support (50) entraîné à rotation autour d'un axe vertical (51) passant sensiblement par le point de contact entre le bord périphérique de la brosse de grattage (54) et le dessous de la chaussure étant travaillée.
9. Machine selon la revendication 7, dans laquelle ledit moyen a inclinaison comprend un bras de support de brosse (53) incliné par un moyen d'actionnement (55) pour donner à la brosse (54) une inclinaison dans son plan selon la tangente passant par le point du dessous de la chaussure étant travaillée.
10. Machine selon la revendication 1, dans laquelle ledit outil de distribution de colle comprend une buse de distribution de colle (56) dotée de deux moyens de support à inclinaison perpendiculaires (60, 63).
11. Machine selon la revendication 10, dans laquelle la buse de distribution de colle (56) comprend une brosse d'enduisage (57) tournant autour de la buse de distribution de colle (56) et en relation co-axiale avec celle-ci.
12. Machine selon la revendication 10, dans laquelle lesdits moyens de support à inclinaison comprennent un premier (60) et un second (63) guide arqué dont le centre de courbure est adapté à identifier un centre de rotation coïncidant avec l'extrémité de distribution de buse (57), ladite buse (56) étant supportée à coulisement par lesdits guides (60, 63) pour son inclinaison contrôlée audit centre de rotation.
13. Machine selon la revendication 1, dans laquelle chaque support de ladite paire de supports de chaussure (12, 13) comprend un support arrière (38) doté d'éléments de serrage (39) pour serrer la partie talon de la chaussure, un support avant (43) doté d'éléments de serrage (40) pour serrer latéralement la partie bout de la chaussure, et un support central (36) pour supporter la forme à chaussure.
14. Machine selon la revendication 13, dans laquelle le support avant (43) comprend un dispositif de blocage de bout (46) adapté à être déplacé d'une position dans laquelle il n'entrave pas la partie bout à une position dans laquelle il contacte la partie bout et la bloque.
15. Machine selon la revendication 13, dans laquelle le support avant (43) est mobile dans la direction longitudinale de la chaussure.
16. Machine selon la revendication 13, dans laquelle le support central (36) peut être incliné vers la portion avant de la machine, afin de faciliter la fixation sur la forme à chaussure qu'il porte.

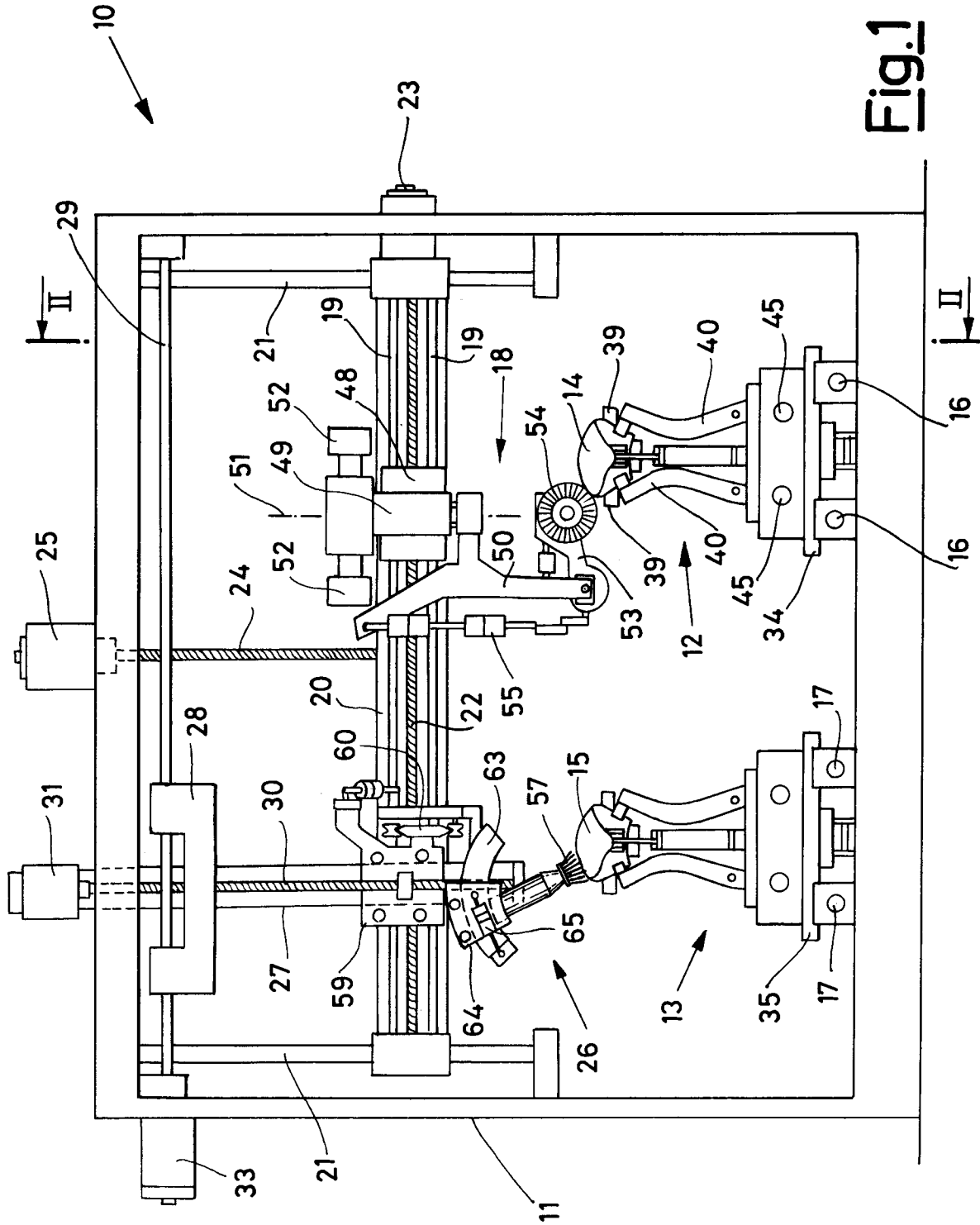


Fig.1

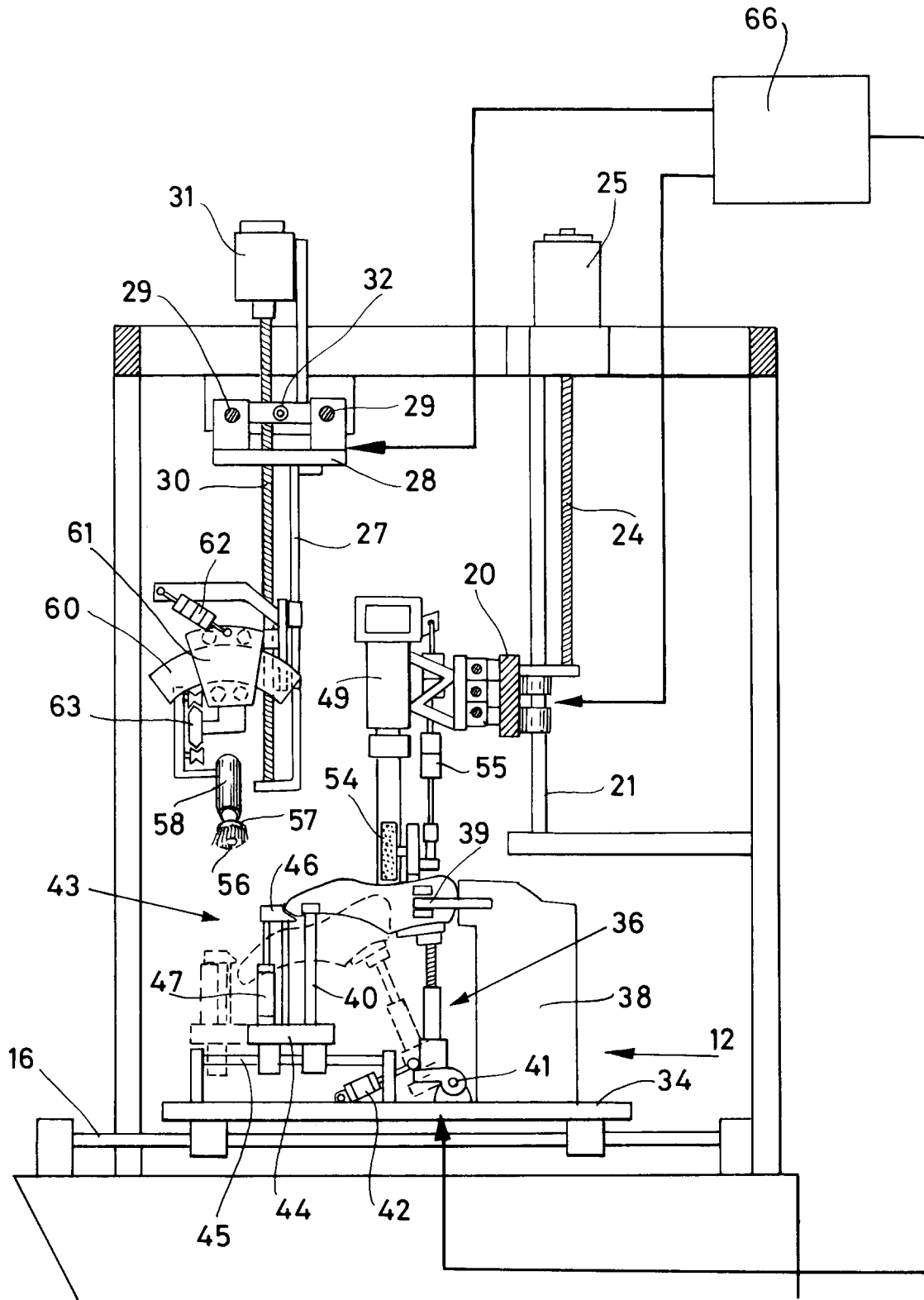


Fig. 2