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(54) **Tobacco shredding machine**

Tabakschneider

Machine pour couper le tabac

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Description

[0001] The present invention relates to a tobacco shredding machine.

[0002] More specifically, the subject of the invention is a machine of the type comprising
a main supporting structure, fixed, in which is arranged a tobacco feeder device with conveyor belts one above the other and converging, capable of pushing a mass or block of tobacco towards an outlet opening or aperture in said structure and
a rotating cutting device fitted so as to pivot about a substantially horizontal axis in front of said outlet aperture, in an auxiliary support structure connected movably to the main structure;
the rotating cutting device having a plurality of knives which extend horizontally, spaced at equal angular intervals about the axis of rotation, and which are capable successively of cutting across and penetrating into the mass or block of tobacco which in operation is made to advance by said feeder device at the above-mentioned outlet aperture.

[0003] The purpose of the present invention is to produce a machine of this type, designed to allow the operations of cleaning and of removal and replacement of the knives of the rotating cutting device to be executed easily and safely.

[0004] This and other purposes are achieved according to the invention with a machine of the type specified above, characterised in that the above-mentioned auxiliary support structure is fitted so as to be capable of translational movement with respect to the main structure in a transverse horizontal direction, parallel to the axis of rotation of the cutting device, between an operating or working position in which the rotating cutting device extends in front of the outlet aperture of the tobacco feeder device, and a non-operating position in which the rotating cutting device extends transversely beside said outlet aperture, which is uncovered and directly accessible.

[0005] Other advantages and characteristics of the invention will become clear from the following detailed description given purely by way of non-limiting example, with reference to the appended drawings in which:

figure 1 is a front view of a tobacco shredding machine according to the invention, shown in the operating or working condition;

figure 2 is a sectional view at a larger scale along the line II-II in figure 1;

figure 3 is a front view similar to the view in figure 1, and shows the machine in a non-operating condition;

figure 4 is a partial view, partly in section, at a larger scale, showing a portion of the machine indicated by IV in figure 3;

figure 5 is a view which shows the device for controlling outward movement and/or withdrawal of the knives of the rotating cutting device of the machine according to the invention;

figure 6 is a partial view, partly in section, showing a sensor device for monitoring how far the knives of the rotating cutting device project; and

figure 7 is a view along the arrow VII in figure 6.

[0006] In figures 1 to 3, the number 1 is used to indicate as a whole a tobacco shredding machine according to the present invention.

[0007] The machine 1 comprises a fixed main support structure 2, resting on the ground by means of a plurality of feet 3.

[0008] As can be seen in figure 2 in particular, in a manner known in itself, a tobacco feeder device, indicated as a whole by the number 4, is arranged in the main support structure 2. This device basically comprises two conveyor belts 5 and 6, respectively upper and lower, converging towards the front end of the machine, and capable of pushing a mass or block of tobacco T towards an outlet opening or aperture 7 (figures 2 and 3).

[0009] The shredding machine 1 also comprises an auxiliary support structure, indicated as a whole by the number 9, fitted so as to be capable of translational movement relative to the front face of the main structure 2, in a transverse horizontal direction, along a cylindrical guide bar 10 (see figure 2 in particular) fixed in the upper part of the main structure.

[0010] Fitted in the auxiliary support structure 9 is a rotating cutting device, indicated as a whole by the number 11, capable of revolving about a horizontal axis indicated by A-A in figure 1.

[0011] This cutting device 11, in a manner known in itself, comprises a rotating drum or barrel 12, having an axial appendage 13 to which is keyed a pulley 14 coupled by means of a belt 15 to a pulley 16 keyed to the shaft of a motor (for example) an electric motor 17, carried at the top by the auxiliary support structure (figures 1 and 3).

[0012] In the example of embodiment illustrated, the rotating cutting device 11 carries eight knives or cutting blades 18 (figure 2) running horizontally, spaced at equal angular intervals about the axis of rotation A-A.

[0013] As can be seen from figure 2 in particular, in operation, as a result of rotation of the head or drum 12 the knives 18 of the cutting device 11 are capable successively of cutting across and penetrating into the mass or block of tobacco T which is made to advance by the feeder device 4 at the outlet aperture 7. Still with reference to figure 2, the auxiliary support structure 9 is capable of translational movement horizontally along the cylindrical guide 10, as a result of the operation of a drive device 19, which may be of the electromechanical or hydraulic type.

[0014] In the example of embodiment illustrated, when the auxiliary support structure 9 is in the working position shown in figures 1 and 2, part of it projects into the main support structure 2, in particular at its rotating cutting device 11. For this reason, the auxiliary structure 9 is not immediately capable of translational movement relative to the main support structure 2.

[0015] To overcome the interference between the structure 9 and in particular the cutting device 11 and the main structure 2, so that translational movement of the auxiliary structure is then possible, the latter is appropriately swivellable about the axis of the cylindrical guide 10, between the operating position shown by continuous lines in figure 2 and an angularly rotated position, also shown, but in broken lines, in said figure 2.

[0016] This swivelling of the auxiliary structure 9 can be controlled by means of a thrust crosspiece 20 (figures 2 and 3) the ends of which are connected to the rods 21a (figure 2) of two hydraulic actuators 21 (figure 3). Further hydraulic actuators 22 for raising/lowering (figures 2 and 3) are also appropriately involved in swivelling the auxiliary support structure 9, being coupled to the rods 21a of the actuators 21 by means of suitable mechanisms, one of which is shown by broken lines in figure 2, where it is indicated by the number 23.

[0017] Once it has been rotated to the position shown by broken lines in figure 2, the auxiliary supporting structure 9 is capable of translational movement horizontally, in a transverse direction, that is parallel to the axis of the rotating cutting device 11, by means of the drive device 19, until it reaches the position shown in figure 3 in which the cutting device 11 is located beside the outlet aperture 7, and the latter is uncovered and directly accessible to an operator.

[0018] In the auxiliary support structure 9 and in particular in the area above the rotating cutting device 11, a grinding device 24 is installed, comprising a revolving annular grinding wheel 25.

[0019] This grinding device 24 may be swivelled between a non-operating position, shown by broken lines in figure 2, and an operating position, shown by solid lines, in which it is coupled to a traversing device, capable of imparting horizontal translational movement to it along two guides 26. This translational movement is produced by means of a motor 27 (figures 1 and 3) attached to the upper part of the auxiliary structure 9, the shaft of which is coupled by means of a belt transmission 29 to a worm screw 28. The latter is engaged in a nut component of a carriage 30 capable of translational motion along the guides 26, and to which is coupled the grinding device when it is arranged in the operating condition shown by continuous lines in figure 2.

[0020] Operation of the motor 27 therefore causes translational movement of the grinding device 24 along the horizontal working travel defined by the guides 26 in such a way that the grinding wheel 25 is applied successively to the sharpened portion or cutting-edge of each of the knives 18 of the rotating cutting device.

[0021] As can be seen in figures 1 and 3, and in part also in figure 4, the auxiliary support structure 9 also appropriately carries a dressing device, indicated as a whole by the number 31, of a type known in itself, capable of dressing the working surface of the grindstone 25 of the sharpening device 24.

[0022] With reference to figure 4, for each blade or

knife 18, the rotating cutting device comprises a blade movement mechanism capable of providing outward movement or advance, or inward movement or withdrawal of the knife. In the example of embodiment illustrated, this mechanism comprises a shaft 32, revolving in one direction to cause outward movement and in the other to cause withdrawal of the knife. This shaft can be coupled to a first drive device 33 (figure 4) by means of a front clutch 34 of the friction type. The drive device 33 is arranged to cause rotation of the shaft 32 at relatively low speed so as to cause, in normal operation of the shredding machine, a slow progressive outward movement or advance of the associated knife 18, in order to compensate for blade wear.

[0023] With the shaft 32 associated with each blade is associated a corresponding rod 35 capable of translational movement to control the friction clutch 34 (figure 4). With reference to figure 4, when the rod 35 is moved to the right, it causes the clutch 34 to open and the shaft 32 to be uncoupled from the drive device 33. The function and purposes of the control rod 35 will become clear from what follows in the present description.

[0024] As shown by broken lines in figures 1 and 3, a second drive unit 40 is attached to the auxiliary support structure 9 and is shown, viewed from above partly in section and at a larger scale, in figure 5. This second drive unit can be coupled selectively to the blade movement mechanism for a knife 18 of the rotating cutting device 11 when the latter is in a predetermined angular position, to cause an inward or outward movement of this knife at a relatively higher speed compared with that produced by means of the motor 33, for example for executing an operation of replacing this knife with a new one and repositioning the new knife.

[0025] With reference to figure 5, the drive unit 40 basically comprises a motor 41, with an output shaft or spindle 42 which can be coupled to the end of the shaft 32 opposite the associated motor 33, by a clutch of the end face type indicated as a whole by the number 43 in figure 5.

[0026] The front clutch 43 can be closed and therefore the shaft 42 of the motor 41 coupled to the shaft 32 by means of an actuator 44 comprising a control device 45 capable of translational movement which, when this actuator is operated, can cause translational movement of the rod 35 at the same time, and therefore open the friction clutch 34 and couple the motor 41 to the shaft 32.

[0027] With a view to replacement of its n knives 18 (n=8 in the example illustrated) the rotating cutting device 11 can be positioned successively in the n angular positions in which in each case one of its knives 18 is located in a reference position in which it can easily be removed and replaced, and in which the associated rod 35 and the corresponding shaft 32 line up with the component of the actuator 44 capable of translational movement and with the shaft of the motor 41.

[0028] The positioning of the rotating cutting device 11 in said n angular positions may be achieved using a cam

unit coaxial and integral with said cutting device, provided with n peripheral slots into which a retaining and stabilising pawl or claw may be fitted, and which may be controlled for example by means of a manually operated hydraulic device.

[0029] Operation of the actuators 44 and the motor 41 in this condition uncouples the shaft 32 associated with the knife being examined from the corresponding motor 33 and couples this shaft to the motor 41 which is capable of moving it more rapidly, with a view to removing and replacing the knife.

[0030] Once a blade has been replaced, the motor 41 causes the new knife to move until its sharp portion or cutting-edge reaches the nominal operating position close to the periphery of the rotating cutting device.

[0031] To determine this position of the new knife accurately, the sensor device 50 shown in figures 6 and 7 may appropriately be used. This device in the embodiment illustrated comprises an arm 51 connected to the auxiliary support structure 9 so that it can be swivelled between a working position, shown by continuous lines in figures 6 and 7, and a parked position, shown by broken lines in figure 7.

[0032] At its free end, the arm 51 carries a sensor 52, constituted for example by a precision microswitch.

[0033] When the arm 51 is located in the working position shown by solid lines in the drawings, the sensor 52 extends over the outward travel of the knife 18 being positioned. When, under the action of the motor 41, the knife 18 being positioned touches the sensor 52 with its cutting edge, the sensor supplies a control apparatus (not shown) with an electrical signal, capable of causing deactivation of the motor 41.

[0034] With a view to positioning another knife 18 of the rotating cutting device 11, the device 50 may be repositioned manually in the parked condition, and the rotating cutting device 11 can be made to rotate, so as to bring a new knife into the reference position in which the sensor 50 is located.

[0035] Naturally, the principal of the invention remaining the same, the forms of embodiment and details of construction may be varied widely with respect to those described and illustrated, given purely by way of non-limiting example, without thereby departing from the scope of the invention as defined in the appended claims.

Claims

1. A machine (1) for shredding tobacco (T), comprising a main support structure (2), fixed, in which is arranged a tobacco feed device (4) with convergent conveyor belts (5, 6), capable of pushing a mass or block of tobacco (T) towards an outlet opening or aperture (7) of said structure (2), and a rotating cutting device (11) fitted so as to revolve about a substantially horizontal axis (A-A) in front of said outlet aperture (7) in an auxiliary support struc-

ture (9) connected movably to the main structure (2); the rotating cutting device (11) having a plurality of substantially horizontal knives (18), spaced at equal angular intervals about the axis of rotation (A-A) and capable of successively cutting across and penetrating into the mass or block of tobacco (T) which in operation is made to advance by said feeder device (4) at the above-mentioned outlet aperture (7); the machine (1) being **characterised in that** said auxiliary support structure (9) is fitted so as to be capable of translational movement with respect to the main structure (2) in a horizontal direction parallel to the axis of rotation (A-A) of said cutting device (11) between an operating or working position in which the cutting device (11) extends in front of the outlet aperture (7) of the tobacco feeder device (4) and a non-operating position in which the cutting device (11) extends transversely beside said outlet aperture (7), which is uncovered and directly accessible.

2. A machine according to claim 1, in which in the working position the auxiliary structure (9) and/or the cutting device (11) partly projects into the main structure (2) and in which the auxiliary structure (9) is fitted so as to be slidable horizontally and swivellable vertically with respect to a transverse horizontal guide (10) attached to the main structure (2); control means (20-23) being provided to swivel the auxiliary structure (9) about said guide (10), starting from said working position to an angularly rotated position in which said auxiliary structure (9) is capable of translational movement sideways along said horizontal guide (10) without interfering with the main structure (2).

3. A machine according to claim 1 or 2, in which said auxiliary support structure (9) also carries first drive means (17) capable of causing rotation of the cutting device (11), a sharpening device (24) with a revolving grinding wheel (25), capable of translational movement with respect to said auxiliary structure (9) along a horizontal working path (26) in which the grinding wheel (25) can be applied to the sharpened portion of the knives (18) of the cutting device (11) and second drive means (27) capable of causing translational movement of the sharpening device (24, 25) along said path (26) .

4. A machine according to claim 3, in which said auxiliary support structure (9) also carries a dressing device (31) capable of dressing the grinding wheel (25) of the sharpening device (24).

5. A machine according to any one of the preceding claims, in which for each blade or knife (18) the rotating cutting device (11) comprises a movement mechanism (32) to which can be coupled selectively

a respective first drive device (33) capable of causing during operation a progressive outward movement or advance of the knife (18) at a relatively low speed, to compensate for wear in the blade; a second drive device (40) being associated with the rotating cutting device (11), attached to the auxiliary structure (9) and capable of being coupled when the rotor (11) is stationary to the blade movement mechanism (32) of a knife (18) of the cutting device (11) when the latter is in a predetermined angular position, to cause outward movement of this knife (18) or inward movement of an associated positioner acting on the knife (18) at a relatively higher speed, for example for executing the operation of replacing said knife with a new one and repositioning the new knife.

6. A machine according to claim 5, in which said blade movement mechanism comprises a rotating shaft (32) which can be coupled to or uncoupled from the associated first drive device (33) by means of a friction clutch (34).
7. A machine according to claim 6, in which said friction clutch (34) can be opened by means of a rod (35) capable of translational movement parallel to said shaft (32).
8. A machine according to claims 5 and 7, in which said second drive device (41) can be coupled selectively to a rotating shaft (32) associated with a knife (18) by means of a front clutch (43); an actuator device (44) being associated with said second drive device (41), capable when operated of causing translational movement of the rod (35) at the same time, to open the friction clutch (35) associated with the blade movement shaft (32) of a knife (38) and coupling of said second drive device (41) to this moving shaft (32).
9. A machine according to any one of the preceding claims, in which with a view to replacing its n blades (18), the rotating cutting device (11) can be positioned successively, for example by means of a hydraulic actuator, in the n angular positions in which in each case a knife (18) is in a reference position in which it can easily be removed and replaced.
10. A machine according to any one of the preceding claims, in which in said auxiliary support structure (9) there is provided a sensor device (50) available in a working position in which it is capable of supplying an electrical signal when a knife (18) of the rotating cutting device (11), arranged in said reference position, reaches a position in which its cutting edge is in a predefined nominal position.
11. A machine according to claim 10, in which said sensor (50) comprises a precision microswitch (52) car-

ried by an arm (51) connected to said auxiliary support structure (9) and which can be moved between a working position in which the microswitch (52) extends over the outward travel of a knife (18) of the rotating cutting device (11), and a parked position in which said microswitch (52) extends outside said travel.

10 Patentansprüche

1. Eine Maschine (1) zum Zerkleinern von Tabak (T), welche Folgendes aufweist:

Eine fixierte Hauptstützstruktur (2), in der eine Tabakzufuhreinrichtung (4) mit konvergenten Fließbändern (5, 6) angeordnet ist, die geeignet ist, eine Masse oder einen Klotz von Tabak (T) in Richtung einer Auslassöffnung oder eines Durchlasses (7) dieser Struktur (2) zu schieben, und

eine rotierende Schneideeinrichtung (11), angepasst um vor genanntem Auslassdurchlass (7) in einer Zusatzstruktur (9) um eine im Wesentlichen horizontale Achse (A-A) zu rotieren, wobei die Zusatzstruktur (9) beweglich mit der Hauptstruktur (2) verbunden ist;

die rotierende Schneideeinrichtung (11) weist eine Vielzahl von im Wesentlichen horizontalen Messern (18) auf, die in gleichen Winkelintervallen um die Rotationsachse (A-A) beabstandet sind und geeignet sind, um nacheinander quer in die Masse oder den Klotz von Tabak (T) zu schneiden und in diese einzudringen, wobei die Masse oder der Klotz von Tabak (T) während des Arbeitsvorganges von genannter Tabakzufuhreinrichtung (4) zu oben genanntem Auslassdurchlass (7) voranbewegt wird;

die Maschine (1) ist **dadurch gekennzeichnet, dass** genannte Zusatzstruktur (9) derart ausgeführt ist, dass sie geeignet ist für eine Verschiebung relativ zur Hauptstützstruktur (2) in horizontaler Richtung parallel zur Rotationsachse (A-A) der genannten Schneideeinrichtung (11) zwischen einer Betriebs- oder Arbeitsstellung, in der sich die Schneideeinrichtung (11) vor der Durchlassöffnung (7) der Tabakzufuhreinrichtung (4) erstreckt, und einer Nicht-Betriebsstellung, in der sich die Schneideeinrichtung (11) schräg neben genannter Durchlassöffnung (7) erstreckt, die unbedeckt und direkt zugänglich ist.
2. Eine Maschine gemäß Anspruch 1, bei der in der Betriebsstellung die Zusatzstruktur (9) und/oder die Schneideeinrichtung (11) zum Teil in die Hauptstruktur (2) hineinragt und bei der die Zusatzstruktur (9) so ausgebildet ist, dass sie horizontal verschiebbar

- und vertikal drehbar ist in Bezug zu einer quer verlaufenden horizontalen Führung (10), die an der Hauptstruktur (2) angebracht ist; Kontrollmittel (20-23) sind vorgesehen, um die Zusatzstruktur (9) um genannte Führung (10) zu drehen, beginnend bei genannter Arbeitsstellung bis zu einer im Winkel gedrehten Position, in der genannte Zusatzstruktur (9) zu einer Verschiebebewegung seitlich entlang genannter horizontaler Führung (10) geeignet ist, ohne die Hauptstruktur (2) zu behindern.
3. Eine Maschine gemäß Anspruch 1 oder 2, bei der genannte Zusatzstützstruktur (9) auch trägt:
- Erste Antriebsmittel (17), die geeignet sind, eine Rotation der Schneideeinrichtung (11) zu bewirken, eine Schärfvorrichtung (24) mit einem sich drehenden Schleifrad (25), geeignet, sich in Bezug zu genannter Zusatzstruktur (9) entlang einer horizontalen Arbeitsbahn (26) zu verschieben, in der das Schleifrad (25) an dem geschärften Teil der Messer (18) der Schneideeinrichtung (11) angewendet werden kann, und zweite Antriebsmittel (27), geeignet, um eine Verschiebung der Schärfvorrichtung (24, 25) entlang genannter Bahn (26) zu bewirken.
4. Eine Maschine gemäß Anspruch 3, bei der genannte Zusatzstützstruktur (9) auch eine Abrichteinrichtung (31) trägt, die geeignet ist, das Schleifrad (25) der Schärfvorrichtung (24) abzurichten.
5. Eine Maschine gemäß einem der vorangegangenen Ansprüche, bei der die rotierende Schneideeinrichtung (11) für jede Klinge oder jedes Messer (18) einen Bewegungsmechanismus (32) umfasst, an den wahlweise eine entsprechende erste Antriebsvorrichtung (33) gekoppelt werden kann, die geeignet ist, während des Arbeitsvorgangs eine schrittweise Auswärtsbewegung oder einen Vorschub des Messers (18) bei relativ geringer Geschwindigkeit zu bewirken, um eine Abnutzung der Klinge zu kompensieren; eine zweite Antriebsvorrichtung (40) ist mit der rotierenden Schneideeinrichtung (11) verbunden, angebracht an der Zusatzstruktur (9) und geeignet zum Ankoppeln, wenn der Rotor (11) ortsfest zum Klingenbewegungsmechanismus (32) eines Messers (18) der Schneideeinrichtung (11) ist, wenn sich die letztere in einer vorbestimmten Winkelposition befindet, um eine Auswärtsbewegung dieses Messers (18) oder eine Einwärtsbewegung eines angeschlossenen Stellwerks, das auf das Messer (18) wirkt, bei relativ hoher Geschwindigkeit zu bewirken, beispielsweise um den Arbeitsvorgang, das genannte Messer durch ein neues zu ersetzen und das neue Messer wieder zu positionieren, auszuführen.
6. Eine Maschine gemäß Anspruch 5, bei der genannter Klingenbewegungsmechanismus einen rotierenden Schaft (32) aufweist, der mittels einer Reibungskupplung (34) an die oder von der angegliederten ersten Antriebsvorrichtung (33) an- oder abgekoppelt werden kann.
7. Eine Maschine gemäß Anspruch 6, bei der genannte Reibungskupplung (34) geöffnet werden kann mittels einer Stange (35), die für eine Verschiebung parallel zu genanntem Schaft (32) geeignet ist.
8. Eine Maschine gemäß den Ansprüchen 5 und 7, bei der genannte zweite Antriebsvorrichtung (41) wahlweise mit einem rotierenden Schaft (32) gekoppelt werden kann, wobei der Schaft (32) mittels einer vorderen Kupplung (43) mit einem Messer (18) verbunden ist; eine Aktuatorvorrichtung (44), die mit genannter zweiter Antriebsvorrichtung (41) verbunden ist, und geeignet ist, bei Betätigung eine Verschiebung der Stange (35) zu bewirken und gleichzeitig die Reibungskupplung (35), die mit dem Klingenbewegungsmechanismus (32) eines Messers (38) verbunden ist, zu öffnen und genannte zweite Antriebsvorrichtung (41) mit diesem sich bewegenden Schaft (32) zu koppeln.
9. Eine Maschine gemäß einem der vorangegangenen Ansprüche, bei der mit dem Ziel, ihre n Klingen (18) zu ersetzen, die rotierende Schneideeinrichtung (11) nacheinander, beispielsweise mittels eines hydraulischen Aktuators, in den n Winkelpositionen positioniert werden kann, bei denen sich in jedem Fall ein Messer (18) in einer Bezugsposition befindet, in der es leicht entfernt und ersetzt werden kann.
10. Eine Maschine gemäß einem der vorangegangenen Ansprüche, bei der in genannter Zusatzstützstruktur (9) ein Sensorgerät (50) vorgesehen ist, das in einer Arbeitsstellung verfügbar ist, bei der es geeignet ist, ein elektrisches Signal abzugeben, wenn ein Messer (18) der rotierenden Schneideeinrichtung (11), die sich in genannter Bezugsposition befindet, eine Position erreicht, in der sich seine Schneidkante in einer vordefinierten Nominalposition befindet.
11. Eine Maschine gemäß Anspruch 10, bei der genannter Sensor (50) einen Präzisions-Mikroschalter (52) umfasst, der von einem Hebel (51) getragen ist, der mit genannter Zusatzstützstruktur (9) verbunden ist und der zwischen einer Arbeitsstellung, bei der sich der Mikroschalter (52) über den äußeren Bewegungsweg eines Messers (18) der rotierenden Schneideeinrichtung (11) erstreckt, und einer Ruhestellung, bei der sich genannter Mikroschalter (52) außerhalb des genannten Bewegungsweges erstreckt, bewegt werden kann.

Revendications

1. Machine (1) pour couper du tabac (T), comportant une structure de support principale (2), fixe, dans laquelle est agencé un dispositif d'alimentation en tabac (4) muni de bandes transporteuses convergentes (5, 6), pouvant pousser une masse ou un bloc de tabac (T) vers une ouverture de sortie (7) de ladite structure (2), et
 un dispositif de coupe rotatif (11) agencé de manière à tourner autour d'un axe sensiblement horizontal (A-A) en face de ladite ouverture de sortie (7) dans une structure de support auxiliaire (9) connectée de manière mobile à la structure principale (2);
 le dispositif de coupe rotatif (11) ayant une pluralité de lames sensiblement horizontales (18), espacées à des intervalles angulaires égaux autour de l'axe de rotation (A-A) et capables successivement de couper à travers la masse ou le bloc de tabac (T), et de pénétrer dans celle-ci ou celui-ci, qui en fonctionnement est réalisé pour avancer par l'intermédiaire dudit dispositif d'alimentation (4) au niveau de l'ouverture de sortie mentionnée ci-dessus (7),
 la machine (1) étant **caractérisée en ce que** ladite structure de support auxiliaire (9) est agencée de manière à pouvoir effectuer un déplacement de translation par rapport à la structure principale (2) dans une direction horizontale parallèle à l'axe de rotation (A-A) dudit dispositif de coupe (11) entre une position de fonctionnement ou de travail dans laquelle le dispositif de coupe (11) s'étend en face de l'ouverture de sortie (7) du dispositif d'alimentation en tabac (4), et une position de non-fonctionnement dans laquelle le dispositif de coupe (11) s'étend transversalement à côté de ladite ouverture de sortie (7), qui est non-recouverte et directement accessible.
2. Machine selon la revendication 1, dans laquelle, dans la position de travail, la structure auxiliaire (9) et/ou le dispositif de coupe (11) font saillie partiellement dans la structure principale (2), et dans laquelle la structure auxiliaire (9) est agencée de manière à pouvoir coulisser horizontalement et pivoter verticalement par rapport à un guide horizontal transversal (10) fixé sur la structure principale (2); des moyens de commande (20 à 23) étant fournis pour faire pivoter la structure auxiliaire (9) autour dudit guide (10), en commençant à partir de ladite position de travail vers une position mise en rotation de manière angulaire dans laquelle ladite structure auxiliaire (9) est capable d'un déplacement de translation latéralement le long dudit guide horizontal (10) sans interférer avec la structure principale (2).
3. Machine selon la revendication 1 ou 2, dans laquelle ladite structure de support auxiliaire (9) porte également
- des premiers moyens d'entraînement (17) capables de provoquer une rotation du dispositif de coupe (11),
 un dispositif d'aiguisage (24) muni d'une meule rotative (25), capable d'un déplacement de translation par rapport à ladite structure auxiliaire (9) le long d'un trajet de travail horizontal (26) où la meule (25) peut être appliquée à la partie aiguisée des lames (18) du dispositif de coupe (11), et
 des seconds moyens d'entraînement (27) capables de provoquer un déplacement de translation du dispositif d'aiguisage (24, 25) le long dudit trajet (26).
4. Machine selon la revendication 3, dans laquelle ladite structure de support auxiliaire (9) porte également un dispositif de dressage (31) capable de dresser la meule (25) du dispositif d'aiguisage (24).
5. Machine selon l'une quelconque des revendications précédentes, dans laquelle pour chaque lame ou couteau (18), le dispositif de coupe rotatif (11) comporte un mécanisme de déplacement (32) auquel un premier dispositif d'entraînement respectif (33) peut être couplé de manière sélective, capable de provoquer en fonctionnement un déplacement ou une avancée progressif vers l'extérieur de la lame (18) à une vitesse relativement lente, pour compenser une usure de la lame; un second dispositif d'entraînement (40) étant associé au dispositif de coupe rotatif (11), fixé sur la structure auxiliaire (9) et capable d'être couplé lorsque le rotor (11) est stationnaire par rapport au mécanisme de déplacement de lame (32) d'une lame (18) du dispositif de coupe (11) lorsque ce dernier est dans une position angulaire prédéterminée, pour provoquer un déplacement vers l'extérieur de cette lame (18) ou un déplacement vers l'intérieur d'un élément de positionnement associé agissant sur la lame (18) à une vitesse relativement plus élevée, par exemple pour exécuter l'opération consistant à remplacer ladite lame par une nouvelle, et à repositionner la nouvelle lame.
6. Machine selon la revendication 5, dans laquelle ledit mécanisme de déplacement de lame comporte un arbre rotatif (32) qui peut être couplé au premier dispositif d'entraînement associé (33), ou désaccouplé de celui-ci, par l'intermédiaire d'un embrayage à friction (34).
7. Machine selon la revendication 6, dans laquelle ledit embrayage à friction (34) peut être ouvert par l'intermédiaire d'une tige (35) capable d'un déplacement de translation parallèle audit arbre (32).
8. Machine selon les revendications 5 et 7, dans laquelle ledit second dispositif d'entraînement (41) peut être couplé de manière sélective à un arbre rotatif (32) associé à une lame (18) par l'intermédiaire

re d'un embrayage avant (43); un dispositif d'actionnement (44) étant associé audit second dispositif d'entraînement (41), capable, lorsqu'il est actionné, de provoquer un déplacement de translation de la tige (35) au même moment, pour ouvrir l'embrayage à friction (35) associé à l'arbre de déplacement de lame (32) d'une lame (38), et de coupler ledit second dispositif d'entraînement (41) à cet arbre mobile (32).

9. Machine selon l'une quelconque des revendications précédentes, dans laquelle pour remplacer ses n lames (18), le dispositif de coupe rotatif (11) peut être positionné successivement, par exemple par l'intermédiaire d'un actionneur hydraulique, dans les n positions angulaires dans lesquelles dans chaque cas une lame (18) est dans une position de référence dans laquelle elle peut être enlevée et remplacée facilement.
10. Machine selon l'une quelconque des revendications précédentes, dans laquelle dans ladite structure de support auxiliaire (9) est agencé un dispositif formant capteur (50) disponible dans une position de travail dans laquelle il est capable de fournir un signal électrique lorsqu'une lame (18) du dispositif de coupe rotatif (11), agencée dans ladite position de référence, atteint une position dans laquelle son bord coupant est dans une position nominale prédéfinie.
11. Machine selon la revendication 10, dans laquelle ledit capteur (50) comporte un microrupteur de précision (52) porté par un bras (51) relié à ladite structure de support auxiliaire (9), et qui peut être déplacé entre une position de travail dans laquelle le microrupteur (52) s'étend au-dessus du trajet vers l'extérieur d'une lame (18) du dispositif de coupe rotatif (11), et une position de stationnement dans laquelle ledit microrupteur (52) s'étend à l'extérieur dudit trajet.

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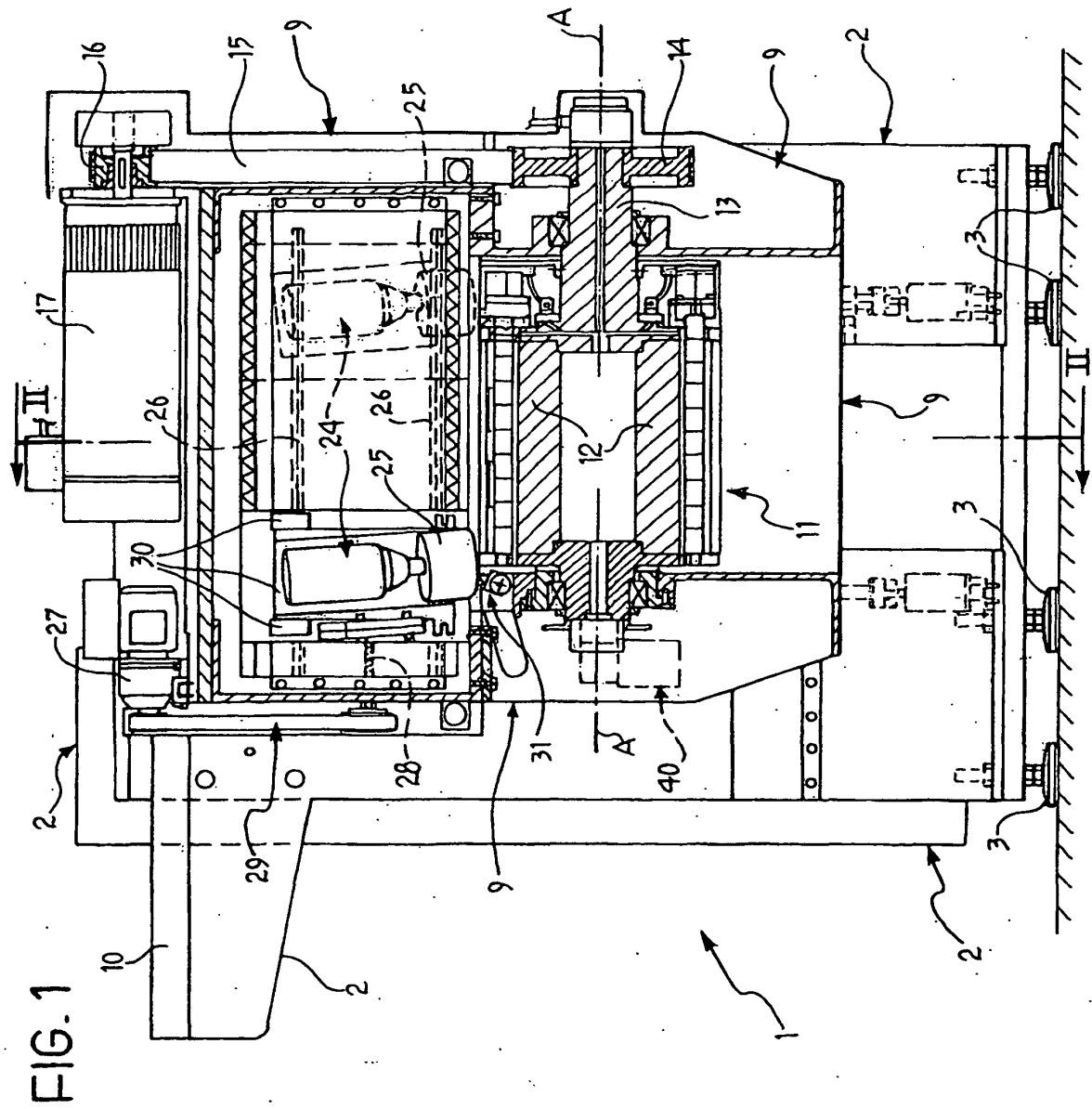
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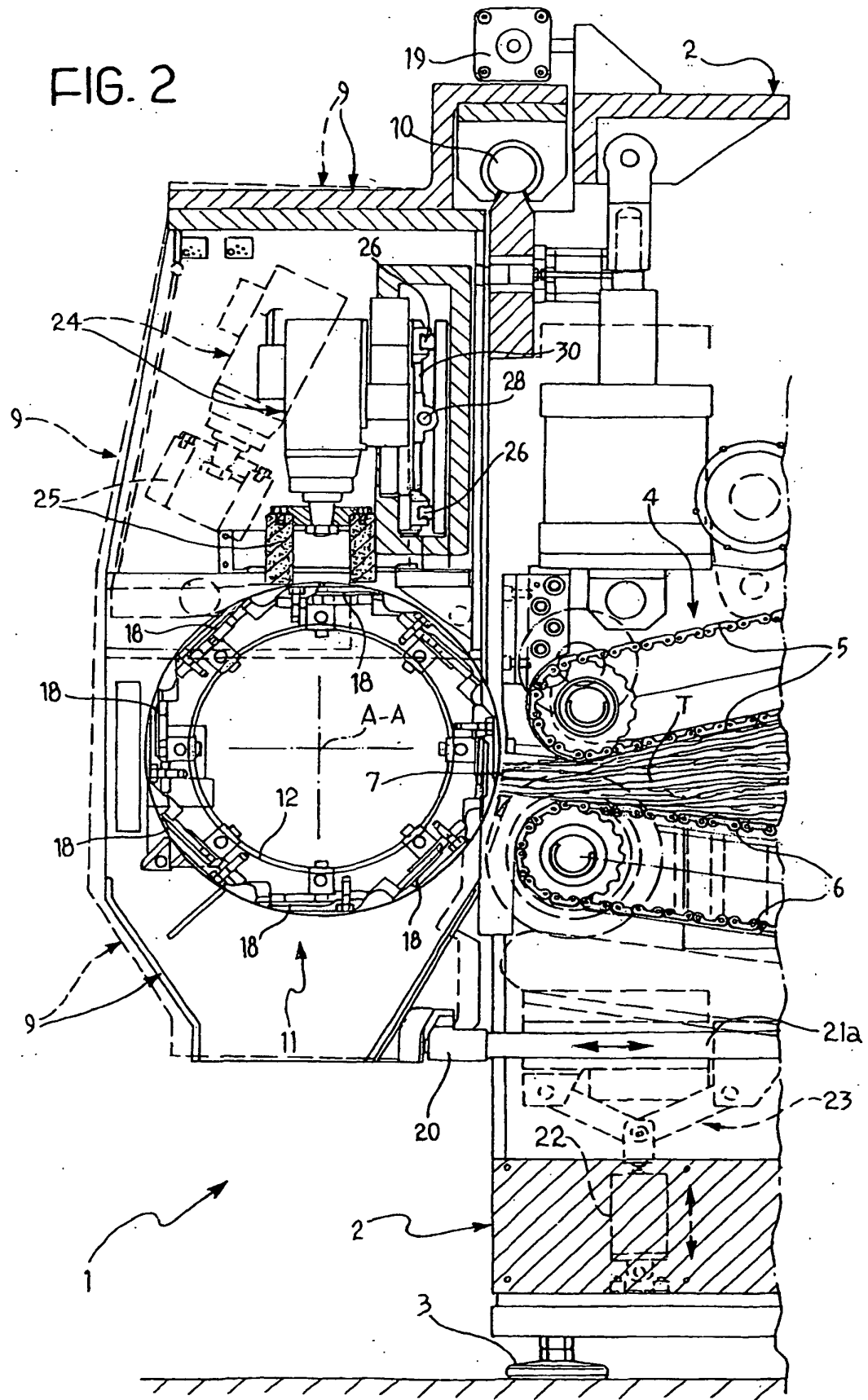
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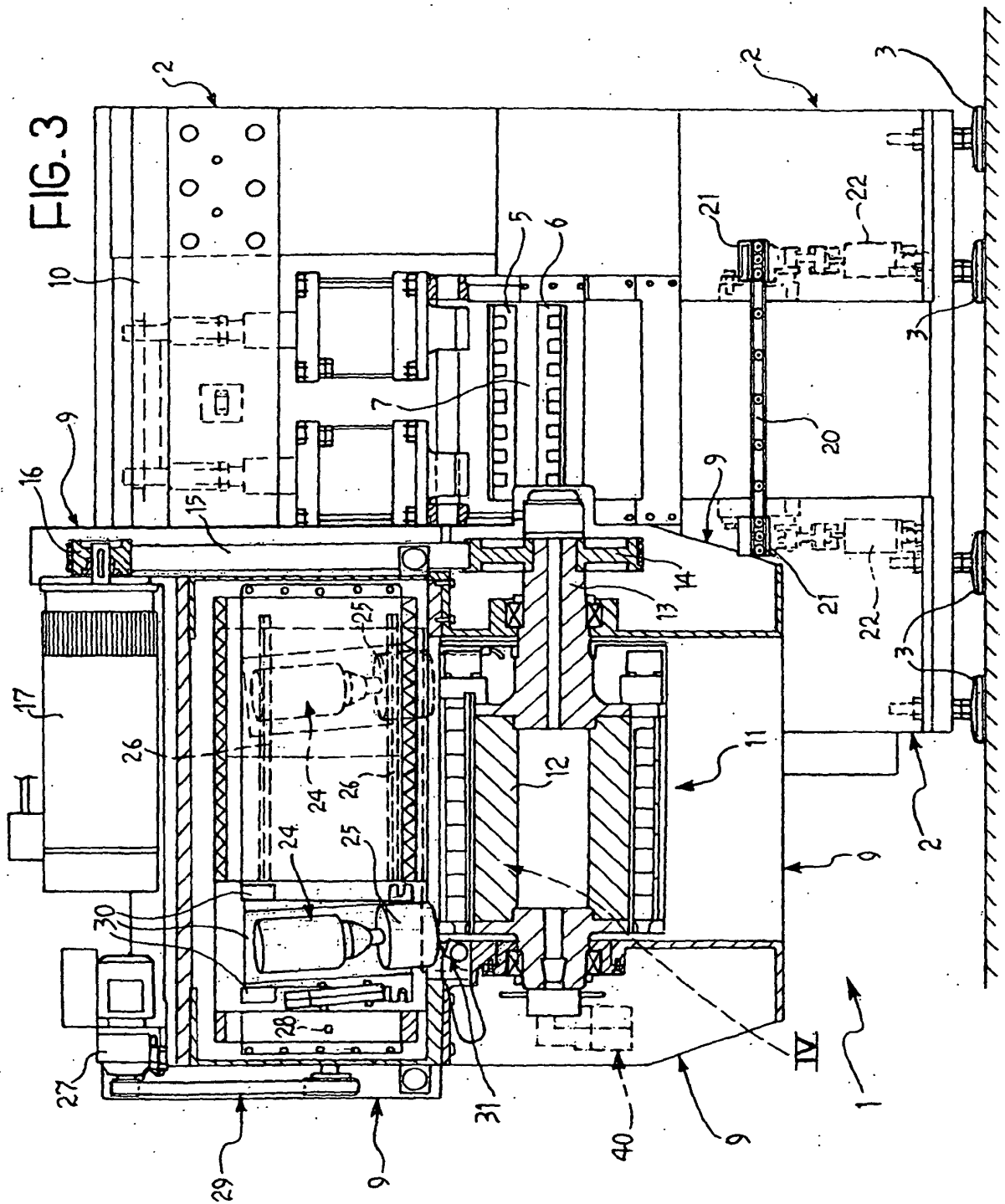


FIG. 4

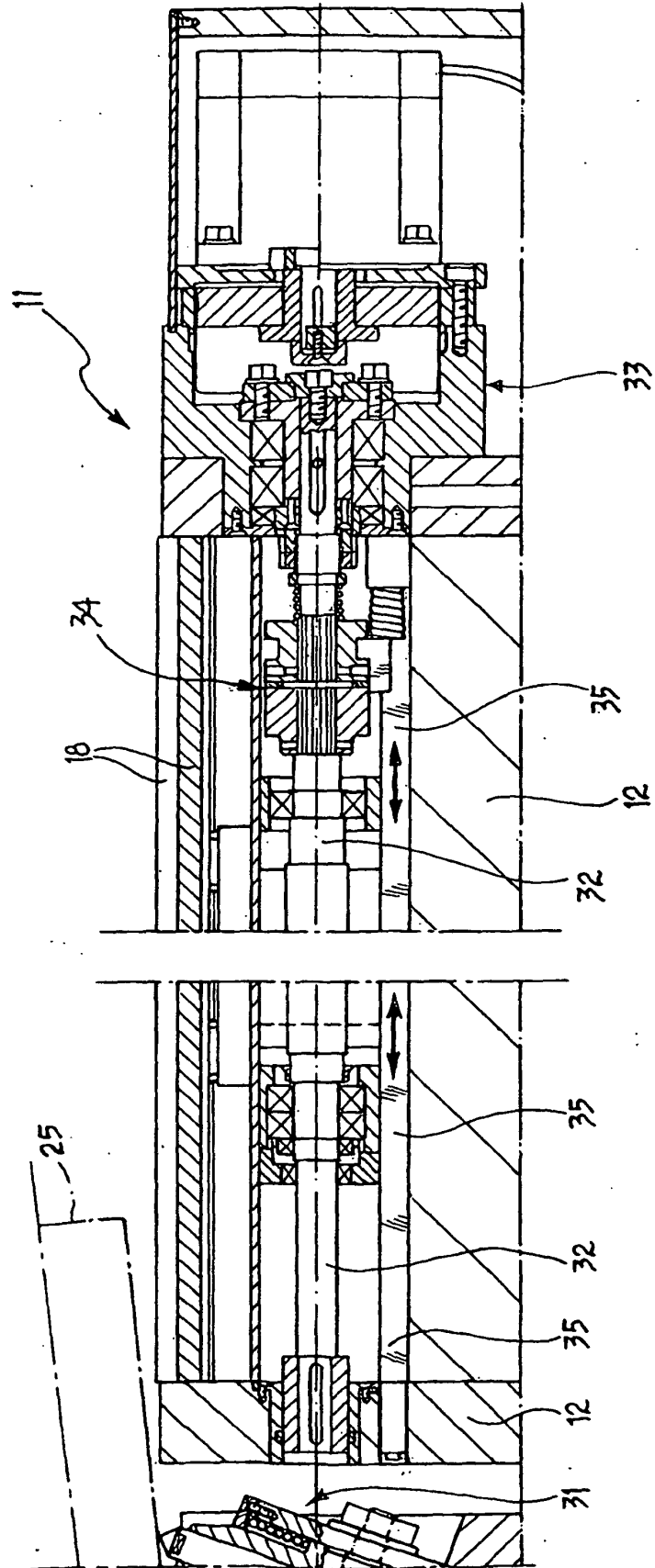
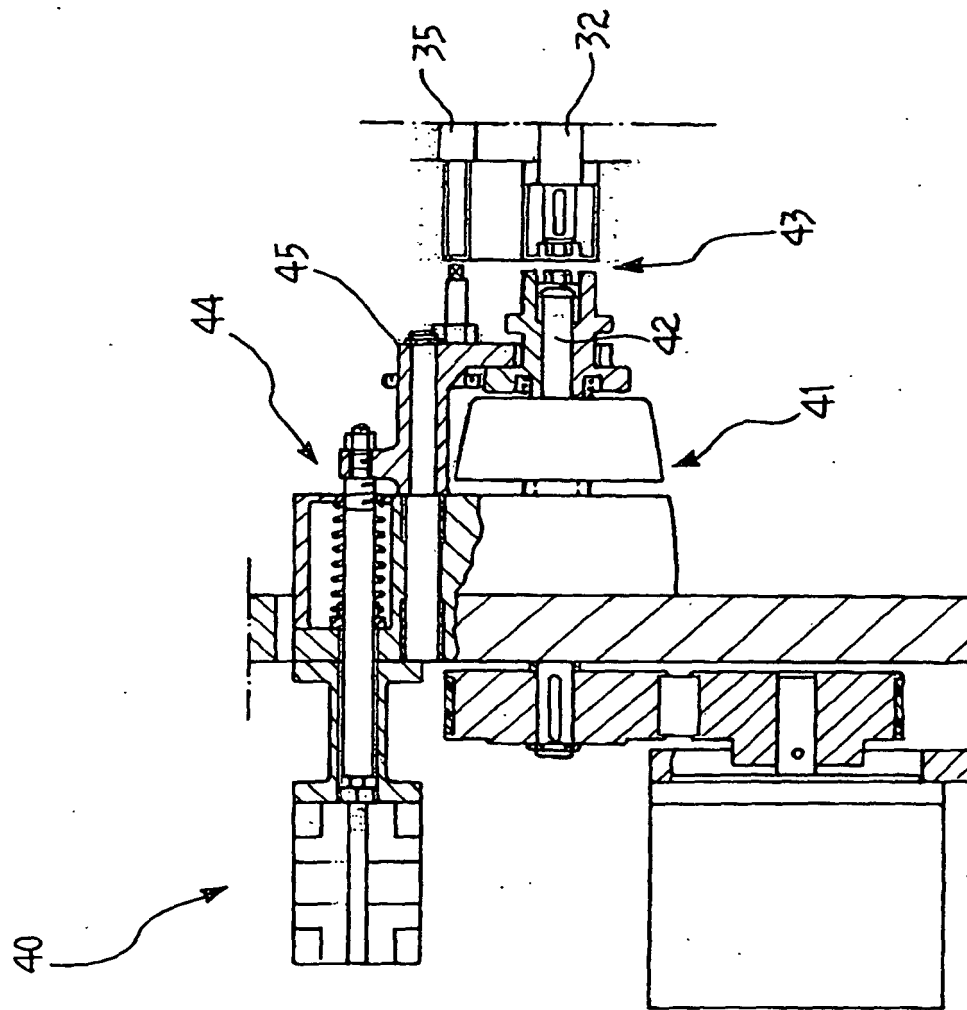
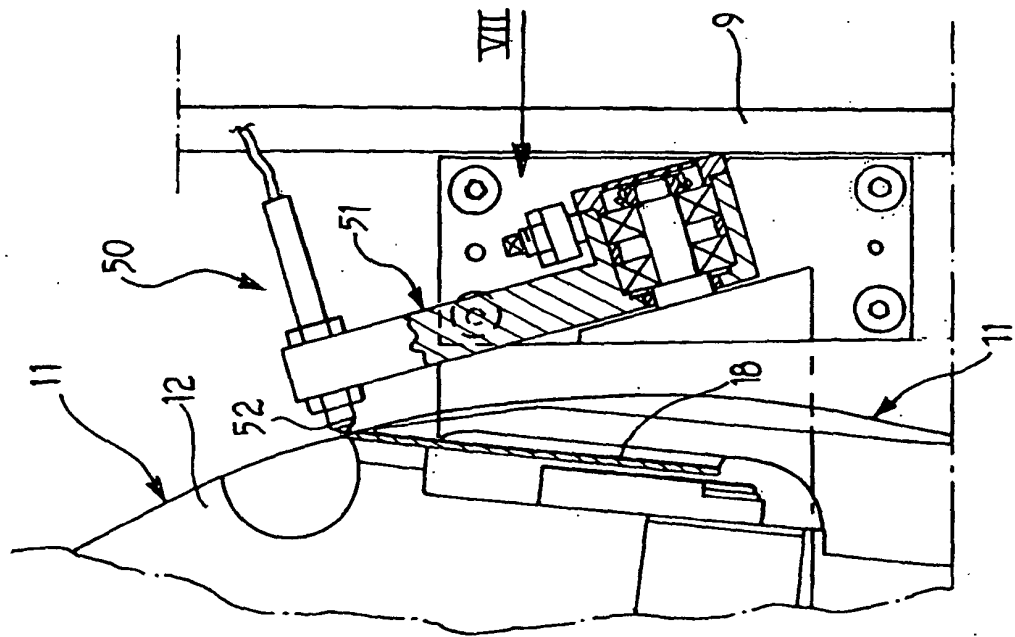


FIG. 5





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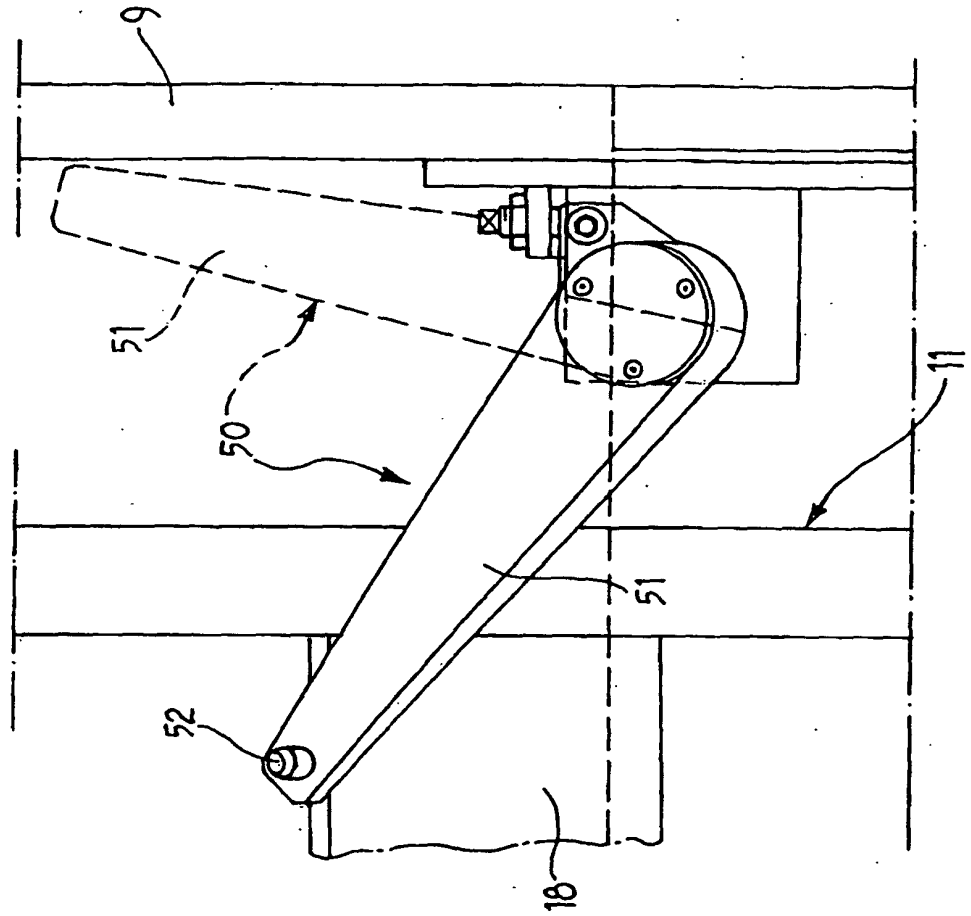


Fig. 7