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(54) Rotor equipped machine for wire straightening and cutting.

(57) Rotor-equipped machine for Wire Straightening and cutting, which is composed out of a single or many units for the straightening and cutting of a single or many Wires simultaneously.

Each unit consists of a Straightening System, which includes the Straightening Rotor and the Mechanism for the reciprocating motion of the Wire inside the Rotor, a Cutting System, which includes the Double-Position Cutter, a two-channel Receptor, a System for the automatic control of the length to be cut and a free space for temporary storing of the Wire between the Straightening and Cutting System.

The method for the reciprocation of the Wire inside,, the Rotor is used to avoid the rapture of the Wire if for some reason it is immoblized inside the body of the Rotor. The Wire exiting the Rotor may be stored, forming under the action of its weight a "storing curve" in the empty space between the Rotor and the Cutting Mechanisms. That way any interruption, for any reason, of the progression of the Wire through the Rotor, during the Cutting action and its excess stress inside the Rotor is avoided.

There is a double-action Cutting Blade in the Cutting Mechanism, able to collaborate with the two-channel Receptor. The Wire enters one channel of the Receptor. The Cutting Blade moves toward one direction, followed by the Receptor, cuts the Wire and at the same time, the channel of the Receptor opens at its lowest side, releasing the Wire being cut into the Storage Place. At the time of the Release, new Wire to be cut enters the other channel of the Receptor and it is cut and released during the motion of the Cutting Blade towards the opposite direction.

If the machine is composed out of many Straightening and Cutting units, it is possible for each unit to elaborate Wire of different material, properties and diameter and to cut at different length size that of the other units. The desired length to be cut is remotely controlled and programmed from a control pannel, by means of an automatic control Mechanism.

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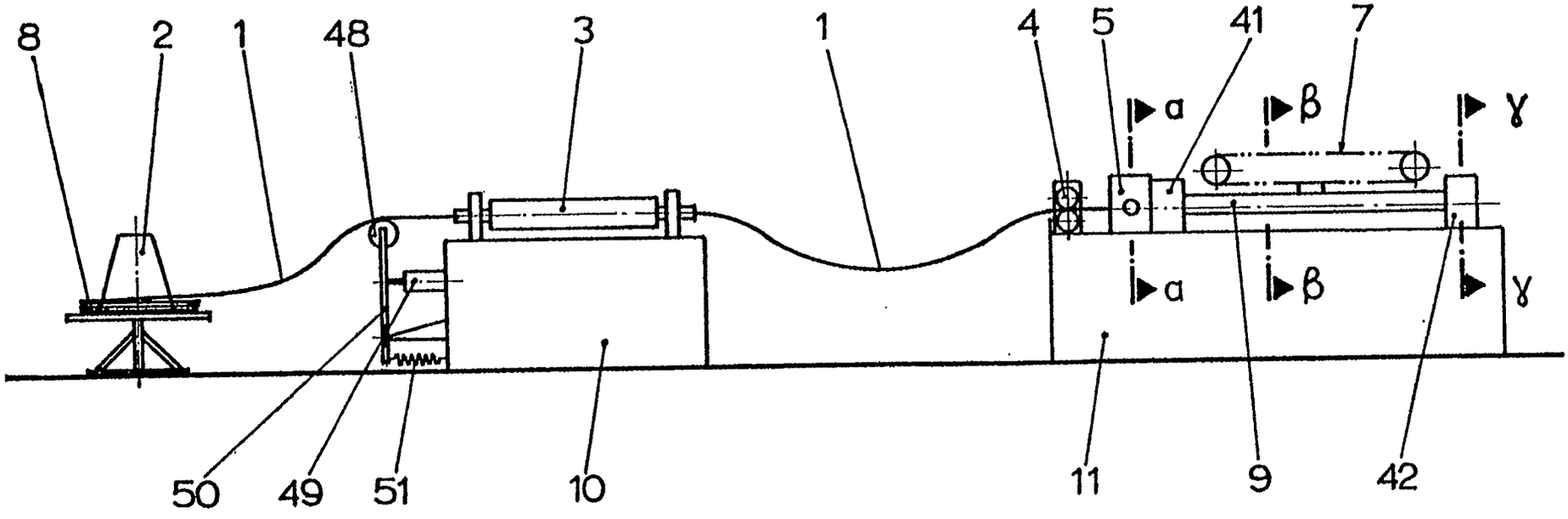


FIG. 1

The invention refers to Rotor-equipped machine for wire straightening and cutting, which is composed out of a single or many units for the straightening and cutting of a single or many wires simultaneously.

Each unit consists of a straightening system, which includes the Straightening Rotor (3) and the Mechanism for the reciprocating motion of the wire inside the Rotor (48), a Cutting System, which includes the Double-Position Cutter (5), a two-channel Receptor (9), a system for the automatic control of the length to be cut (4) and a free space for temporary storing of the wire between the straightening and cutting system (1).

Prior Art refers to U.S: Application No. 07/507,222 already been allowed.

The common Wire Straightening and Cutting Machines consist of the Straightening Rotor, the Cutter and the Reception Mechanism (the Reception Mechanism accomodates the length of the wire to be cut).

The wire, being pulled or pushed before and after the Straightening Rotor by rollers, enters the Reception Mechanism after having passed through the Cutter. Inside the Reception Mechanism an obstacle allows the Receptor to accomodate wire of length size equal to the size of the length to be cut. When the wire enters the Receptor and strikes the metallic obstacle, the Cutter is triggered by means of electrical or mechanical action. There are two types of Cutters: the immovable and movable Cutter.

The immovable Cutter cuts only if the wire has been immobilised. For the wire to be immobilised, either the pulling Rollers need to stop rotating or they need to loose contact with the wire by moving away one from the other. That way the wire can be cut and afterwards the wire is progressed again.

The movable Cutter may be of rotary or reciprocating type. In any case it needs to acquire the speed of motion of the wire and to be able to cut in motion. Also after the cutting action has been completed, it needs to return to its initial position.

The portion of the wire, which has been cut is enclosed inside the channel of the Receptor. Immediately after the cutting action, the cover of the channel of the Receptor opens and the portion of the wire which has been cut falls under the action of its own weight in some storage place. The cover then closes and the channel of the Receptor is ready to accomodate the new portion of the wire to be cut.

All the known Wire Straightening and Cutting Machines use for their operation the aforementioned methods. However their operation has many problems the most important of which are the following:

a) The immobilisation of the wire during the cutting action causes its local stress inside the Rotor, since it is pressed continuously, during the stop, at the same points by the straightening bars of the Rotor. This continuous action causes either excess surface wear of the wire or rapture of the wire because of excess fatigue loading.

b) To achieve higher production rates, complicate and expensive cutting systems, able to cut in the shortest possible time are required. The Straightening and Cutting Machines which use movable Cutter have the same speed requirements for higher production rates since the movable Cutter needs to accelerate forwards, acquire the progression speed of the wire, cut, decelerate, stop, accelerate backwards and stop in its initial position, in the shortest possible time.
Another problem of those common methods is the fact that the cutting of the wire is caused by the action of a moving blade. The motion of this blade blocks the progression of the wire and it is necessary for the moving blade to retract before the motion of the wire is reinstalled.

c) There are other time requirements, however, besides the duration of the cutting action. The motion of the edge of the wire under the shearing action of the moving blade, needs to be followed by the motion of the entire portion of the wire to be cut. Since this portion of the wire is enclosed inside the receptor, its relative motion need to be followed by the motion of the cover of the receptor for its fall to be followed. The inertia of the parts to be moved for the required distance, which is long enough, set the additional time requirements.

d) Another serious disadvantage of the common systems is the rapture of the wire inside the Straightening Rotor mainly because of the following two reasons: The first reason is the inability of the wire to leave the Straightening Rotor, probably due to some malfunction in the Cutter or the Receptor, and the second reason is the inability of the wire to enter the Straightening Rotor, probably due to some malfunction of the systems before the Rotor. In both cases the immobilisation of the wire inside the Rotor causes its rapture.

e) The adjustments of the common machines, for the cutting of the wire at the desired length sizes, consumes time and requires several verification tests.

f) Another serious disadvantage of the known Straightening Machines is the difficulty of their extention to include more than one similar Mechanism in one unit. The difficulty of the extension is caused by the large volume size of the cutting Mechanisms, size resulting from requirements of short time cutting action.

The target of the present invention, the description of which follows, is to be free of the aforementioned disadvantages and to achieve higher production rates over the common machines.

The present invention solves the following problems (Fig. 1):

a' THE PROBLEM OF THE WIRE IMMOBILISATION DURING THE CUTTING ACTION. The wire need not to stop during the cutting action. This advantage results from the positioning of the Cutting System not directly next to the Straightening Rotor but at an adequate distance away from it. The distance between the Straightening Rotor and the Cutting Mechanism has been selected to be such that it will enable the wire to form a free curve under the action of its weight between the Rotor and the Cutter. This curve "stores" temporarily wire exiting continuously for the Rotor when the portion of it inside the Cutter stops temporarily during the cutting action. After the cutting action, rollers placed directly before the Cutter pull the wire at a faster speed than the exit speed of the Rotor and the "storing" curve between the Rotor and the Cutter is cancelled.

b' THE PROBLEM OF THE COMPLICATION AND OF THE LARGE VOLUME SIZE OF THE CUTTING MECHANISMS. The Cutter, being placed not directly next to the Rotor, need not to cut in the very short time of the tenths of the hundrendths of the second. The duration of the cutting action may be long and it results to possible lasting for the time necessary for wire length, approximately equal to the cutting length to be stored in the curve between the two Mechanisms. The so achieved low time requirements are further relaxed by the use of Double-position Cutter and thus further reduction of the cutting time is achieved. That way a simple hydraulic Cutter, of small volume and simple structure, may be used.

c' THE PROBLEM OF THE FAST OPENING AND CLOSING OF THE RECEPTOR. A two channel Receptor is used to accomodate the length of the straightened wire to be cut. The Receptor is rigidly connected to the Cutter and it moves with the moving blade to the left or to the right, always remaining parallel to itself. The wire is progressed inside one of the two channels through the Cutter. This channel is open at the lowest side but in contact with an immovable cover. Then the Cutter is activated and the moving blade and the Receptor is moving towards one direction (left or right). During that motion, the wire is cut and the channel, containing it, moves away from the immovable cover, opens up at its lower side and allows the portion of the wire inside it to fall in the storage place. The second channel is now in contact with the immovable cover and ready to accept the next portion of the wire to be cut allowing the fall of the already cut wire to last for even all the time necessary for the entrance of the new portion of the wire to be cut.

d' THE PROBLEM OF THE RAPTURE OF THE WIRE INSIDE THE STRAIGHTENING ROTOR. This problem occurs when the wire stops, for some reason, moving inside the Rotor. Then rapture occurs and cosniderable time is wasted before the feeding is reinstalled. The immobilisation of the wire inside the Rotor occurs when its progress, before or after the Rotor, is not allowed. The translation of the wire after the Rotor may be interrupted by a malfunction of the cutting or the reception Mechanism, but in the present system the Cutter and the receptor have been removed away from the straightening Rotor allowing the wire to form a "storing curve" after the Rotor in case of such a malfunction. The translation, however, of the wire after the Rotor may be interrupted if the wire Reel Mechanism malfunctions. In that case the rapture of the wire is avoided using a Mechanism which sets the wire in a reciprocating motion inside the Rotor. This reciprocating motion prevents the excess local stress of the wire inside the Rotor.

e' THE PROBLEM OF AUTOMATIC ADJUSTMENT FOR CUT AT THE DESIRED (EACH TIME) LENGTH. A terminal exists inside the channel of the Receptor, which may be placed at the appropriate location for the length to be cut. The placement of the terminal is automatic by means of programmable servo or stepper-motors simply by entering the desired length in the computer terminal.

f' PROBLEM OF COMBINATION OF MANY SIMILAR MECHANISMS IN ONE UNIT (MULTI-ROTOR MACHINES). The present machine may combine more than one similar Mechanisms for the straightening and cutting of more than one wires simultaneously. The Straightening and Cutting Mechanisms for each wire are placed one next to the other on an inclined plane. The angle of inclination permits (a) Free fall of the portion of wire being cut independently at each Mechanism, (b) Easy access to every independent Mechanism, (c) Installation of Cutting Mechanism in positions that result to a reduction of the total width of the machine.

The advantages of the present invention are the following:

(A) The propagation of the wire need not to be stopped during the cutting action, thus need not to be excessively stressed inside the Rotor.

(B) It does not require complicated Cutting systems other than a simple Cutter.

(C) Cover of the channel of the Receptor and short opening and closing times are not required for the free fall of the wire in the storage place.

(D) It solves the problem of the rapture of the wire inside the Straightening Rotor.

(E) The remote programming of the desired, each time, length to be cut is possible.

(F) The combination of several Straightening and

Cutting Mechanisms in one unit for the Straightening and Cutting of several wires simultaneously may be achieved. Each unit has the ability of processing different type of wire of different diameter and to cut at different length that the others.

One way of application of the invention is described in the following, with references to DRAWINGS (1), (2), (3), (4), (5) & (6). These drawings further explain one materialization of the system. These drawings contain the following parts in numerical order:

1. Wire
2. Reel Station
3. Straightening Rotor
4. Rollers
5. Cutter

6. Receptor
7. Translation Chain
8. Wire Roll
9. Cut Wire Receptor
10. Base

11. Base
12. Movable Cutter Blade
13. Opening of immovable Cutter Blade
14. Movable Blade Groove
15. Movable Blade Groove

16. Storage place of cut Wire
17. Storage place of cut Wire
18. Piston
19. Piston
20. Immovable sheet

21. Moving Blade Openings
22. Cutter Body
23. Piston Cover
24. Piston Cover
25. Receptor Channel

26. Receptor Channel
27. Orthogonal Block
28. Orthogonal Block
29. Receptor Channel Groove
30. Receptor Channel Groove

31. Cylinder Chain
32. Part
33. Terminal Electrical Switch
34. Orthogonal Block Supporting Spring
35. Opening

36. Opening
37. Front Gear Wheel
38. Rear Gear Wheel
39. Gear Wheel
40. Gear Wheel

41. Slide Supports
42. Slide Supports
43. Gear Connection Shaft
44. Front Bushing
45. Rear Bushing

46. Chain Wheel
47. Chain Wheel
48. Roller
49. Piston
50. Arm

51. Spring

In DRAWING (1) the general view of the machine is shown. The Wire (1) emmanates from the Wire Roll (8), which is placed on the Reel Station (2). The wire is pulled and is straightened passing through the Rotor (3). After the Rotor, the wire (1) forms an open storing curve and arrives in the Rollers (4). These Rollers pull the wire at a speed higher than the Rotor (3) pulling speed.

The equation of the imposed speeds on the wire by the Rotor (3) and by the rollers (4) is achieved through the slow sliding of the rollers on the wire.

During the cutting of the wire by the Cutter (5), the portion of the wire in the vicinity of the Cutter and of the Roller remains immobilised. However, this immobility does not influence the progress of the wire caused by the Rotor, since the excess wire length may simply increase the deflection of the aforementioned "storing curve" between the Rotor and the rollers.

Immediately after the cutting action, due to the higher -with respect to the Rotor- pulling speed of the rollers, the "storing curve" regain its initial shape. The Wire Cutter (5) is shown in DRAWING (2) and it appears in section a-a, shown in DRAWING (1).

The Cutter (5) bears as movable blade the part numbered (12). This part bears two grooves (14 & 15) for the cutting of the wire and two grooves for the motion of the Receptor. The immovable blade bears the opening (13) through which the wire (1) passes. The immovable blade is located before the movable blade, with respect to the translatory motion of the wire (not shown in the drawing). The movable Blade (12) may move to the right and press the Piston (18) or may move to the left and press the Piston (19).

The Wire, before the cutting, is held in the horizontal position, by means of the immovable Sheet (21), which is extended -as we shall- see to the edge of the Receptor. When the movable Blade. (12) moves to the right, the Groove (15) carries along the wire to be cut, which promptly falls to the storage place (17). When the movable Blade (12) moves to the left, the Groove (14) carries along the wire to be cut, which falls to the Storage Place (16). The Cutter consists of its body (22) and the Covers of its Pistons

(23 & 24).

The Receptor (9) hosts the wire to be cut. Its section b-b (DRAWING 1) is shown in DRAWING 3. The Receptor has two channels (25 & 26), which actually are extentions of the Grooves of the movable Blade (14 & 15) respectively. The Channels (25 &26) are entirely opened to their lowest side while on their top sides bear the Grooves (29 & 30 respectively).

Inside the Channels the Orthogonal Blocks (27 & 28) may slide and they terminate the progression of the straightened Wire through the 2 Channels of the Receptor. In DRAWING 4, a side view of the Receptor is shown which includes only the following parts of the DRAWING 3: The Wire (1), one of the Orthogonal Blocks (28) and the immovable Sheet (20). The Orthogonal Block (28) - as well as the movable block (27) - are held in a specific position inside the Channel of the Receptor (26) by means of the following system:

The Chain of the Cylinders (31) is supported by the two dentical Chainwheels (46 & 47) and carries in one of its following members, one part (32), on the top of which two other parts are placed: A) The terminal Electrical Switch (33) and B) The Orthogonal Block (28), Supporting Spring (34). The system of parts (28, 32, 33 & 34) forms the trigger of the cutting action which takes place in the following way.

The Wire (1), moves to the right and strikes primarily on the Orthogonal Block (28), which is set in motion to the right and it presses the Spring (34). This motion of part (28) will stop when it touches the terminal Electrical Switch (33).

Exactly at that instance, the command for the cutting action is transmitted and the wire is cut as a result of the movement of the Receptor (9). The Wire at that time has the exact predefined length, which is equal to the distance between the cutting edges of the Blades and the side of the Orthogonal Block facing the end of the Wire (1). The Orthogonal Block is immovable and in contact with the Terminal Switch (33).

The two Chainwheels (46 & 47) have the corresponding rotation Shafts (33.1 & 32.1). One of these Shafts transfers the controlled rotation of a Servo-motor. That way, we are able to transfer at will the set of parts (28, 32, 33 34), changing that way the desired length to be cut.

There are two triggering Systems which correspond to each of the two Channels of the Receptor. The Receptor (9) bears in the side, facing the Cutter, two screwed holes (36) (DRAWING 3), through which it is supported, by means of screws, through the holes (21) with the movable Blade (12) (DRAWING 2). That way, following the motion of the movable Blade to the right or to the left, the front (with respect to the motion of the Wire) side of the Receptor, moves to the right or to the left.

For the rear side of the Receptor to move to the right or to the left, the Mechanism shown in DRAWING (5) is used. On the Receptor (9) two Gear Rulers are supported, the Ruler (37) in the front side and the Ruler (38) in the rear side. These Gear Rulers may slide horizontally at those supports (41 & 42 respectively).

There are two Gear Wheels collaborating with the Gear Rulers and specifically the Gear Wheel (39) with the Gear Ruler (37), located in the front side of the Receptor and the Gear Wheel (40) with the Gear Ruler (38) located in the rear side of the Receptor. These Gears are interconnected by means of the Shaft (43), which may rotate in the bushings (44) at the front side and (45) at the rear side.

The Receptor (9) may translate, remaining parallel to itself, to the right or to the left, following the motion of the movable Blade (12) in the following way:

First, the front Gear Ruler (37) is set in motion, let us assume to the right. This Ruler transfers a rotary motion to the Gear Wheel (39), the Gear Wheel transfers the rotation through the Shaft (43) to the Rear Gear Ruler (38), which in turn, being supported on the rear side of the Receptor, moves this side to the right.

The front Stand (41) supports the front Gear Ruler (37) and the front Bushing (44) of the Shaft (43). The rear Stand (42) supports the rear Gear Ruler (38) and the Rear Bushing (45) of the Shaft (43). Actually the Receptor (9) is hung on the two Gear Rulers (37 & 38) and is set in motion to the right or to the left by the two Bolts which pass through the openings (21) of the movable Blade (12). For the parallel translation of the Receptor, another different system may be used.

The Straightening Rotor (3) is supported on the Base (10), while the Receptor (9), the Rollers (4) and the Cutter (5) are supported on a different Base (11). The Wires after being cut fall in containers under the Receptor. These containers are not shown in the drawings.

The Mechanism to prevent the immobilization of the Wire inside the Rotor, when the Rotor operates, and thus to prevent the rapture of the Wire inside the Rotor, consist of : The Roller (48), the Arm (50), the Piston (49) and the Spring (51).

The activation of this Mechanism sets the Wire in a reciprocating motion inside the Rotor. This activation occurs in the case that the feeding of the Rotor with Wire from the Reel Station is interrupted for some reason. The reciprocating motion of the Roller (48) (which causes the reciprocation of the Wire inside the Rotor) takes place in the following way:

The interruption of the feeding with Wire (1) from the Reel Station (2), under the pulling action of the Rotor (3), causes the attraction of the Roller (48) towards the Rotor. When the Arm (50), which carries the Roller (48), approaches enough, it presses a terminal switch and activates the Piston (49), which in turn, removes the Arm (50) with the Roller (48) and the Wire (1). The Wire (1) now is pulled to the opposite direction of the progression one and exits the Rotor (31).

When the Arm (50) and the Roller (48) have been removed enough, another terminal switch is pressed, and the action of the piston stops. Then the action of the Rotor pulls the Wire (1), the Roller (48) and the Arm (50) towards itself and the procedure is repeated. That way, the continuous action of the Rotor at the same points of the Wire is avoided and consequently the overheating and the rapture of the Wire are avoided as well.

Claims

1. Rotor-equipped Machine for Wire Straightening and Cutting, which is composed out of a single or many units for the straightening and cutting of a single or many wires simultaneously. Each unit consists of a straightening system, which includes the straightening Rotor and the Mechanism for the reciprocating motion of the wire inside the Rotor, a Cutting System, which includes the Double-Position Cutter, a two-channel Receptor, a system for the automatic control of the length to be cut and a free space for temporary storing of the wire between the Staightening and Cutting System, which is characterised:
   – by the ability of setting the Wire in a reciprocating motion inside the body of the Straightening Rotor, avoiding thus its rapture in the case of its immobilisation inside the Rotor,
   – by the passing through and storing in the empty space between the Straightening and Cutting Systems of the Wire and, under the action of its weight, formation of storing curve,
   – by the Double action ability of the Cutter, which may cut during its forward or during its backward motion,
   – by the ability of the Wire to enter alternatively the two channels of each Receptor,
   – by the ability of synchronisation of the action of the Cutter and the motion of the Receptor, in such a way inside that, when a specific length of Wire has been positioned inside one channel of the Receptor, the forward motion of the Cutter to cut the Wire and to translate the Receptor, releasing the Wire being cut and allowing new length of Wire, to be cut, to enter in the second channel, and
   – by the automatic selection, through a computer unit, of the desired length to be cut, by the automatic transportation of the switch which terminates the progression of the Wire inside the channel at the desired position.

2. Rotor-equipped Machine for Wire Straightening and Cutting being referred with its characteristics in CLAIM 1, at which the Straightening and Cutting units, if more than one, are placed on an incline, one next to the other, allowing thus: the undisturbed falling of the Wires after being cut in the collection place, the easy access of each unit and the space saving, stepwise placement of the Cutters (DRAWING 6).

3. Rotor-equipped Machine for Wire Straightening and Cutting being referred with its characteristics in CLAIM 1, at which the method used for the undisturbed progression of the Wire through the Straightening Rotor with no need of fast Cutting Mechanisms is that the Straightening and the Cutting Mechanisms are not placed one next to the other, but at a distance one from the other leaving an empty space between them, which empty space is used for temporary storing of the excessively accumulated length of the Wire, leaving the Straightening Rotor, when its progression stops temporarily during the cutting procedure, where the distance between the two Mechanisms is selected to be such, that the Wire, forming the "storing curve" under the action of its own weight, nowhere to be deformed beyond the elastic region and undergo any plastic deformation.

4. Rotor-equipped Machine for Wire Straightening and Cutting, being referred to with its characteristics in CLAIM 1, at which the method used to avoid the rapture of the Wire inside the Rotor, if it is immobilised for some reason inside the Rotor is that the Wire is set in a reciprocating motion inside the Straightening Rotor preventing thus the continuous action of the Rotor Straightening bars at the same points of the Wire.

5. Rotor-equipped Machine for Wire Straightening and Cutting, being referred with its characteristics in CLAIM 1, at which the method of the reciprocation of the Wire inside the Rotor is used, to avoid the rapture of the Wire inside the Rotor (4), it is immobilised for some reason inside the Rotor, being referred with its characteristics in CLAIM 4, at which the reciprocating Mechanism is composed out of the following parts: Pneumatic piston (49), Roller (48) and Spring (51) and it is characterised by the fact that if the progress of the Wire is interrupted by the Reel Station (2) the pulling action of the Rotor (3), causes the attraction of the Roller (48) towards the Rotor and when the Arm (50), which carries the Roller (48), approaches enough, it presses a terminal switch and activates the Piston (49), which in turn, removes the Arm (50) with the Roller (48) and the Wire (1) which is pulled to the opposite direction of the progression one and exits the Rotor (31) and when the Arm (50) and the Roller (48) have been removed enough, another terminal switch is pressed, and

the action of the piston stops and then the action of the Rotor pulls the Wire (1), the Roller (48) and the Arm (50) towards itself and the procedure is repeated.

6. Rotor-equipped Machine for Wire Straightening and Cutting being referred with its characteristics in CLAIM 1, at which the Cutting Mechanism is composed out of a movable and an immovable cutter where the movable cutter is able to cut wire lengths during its regular cutting motion and during its retracking motion.

7. Cutting mechanism as in CLAIM 6 where the movable cutter and the receptor of the wire length to be cut are connected in one unit.

8. Cutting mechanism as in CLAIM 6, materialised by two pistons (18 & 19) for the forward and retracking motions, by the movable blade (12) which bears two grooves (14 & 15) for the cutting actions and two grooves for the reception of the wire, by the immovable blade, bearing the opening (13) through which the wire (1) passes and located before the movable blade with respect to the progression of the wire and characterised by the fact that for the cutting action the wire is held in one of the grooves of the receptor (14 & 15) and is cut by the transverse motion of the movable cutter while, during the cutting action, new portion of wire enters the second of the grooves and the procedure follows the retrack of the movable cutter.

9. Rotor-equipped machine as in CLAIM 1 with cutting mechanism and receptor connected in one unit as in Claim 7, where the extensions of the grooves of the cutter form the recepting channels of the receptor, as in Claim 8, which channels are opened at their lower sides and in contact with an immovable sheet (20), which is used as a gate and allows the wire length being cut to fall in the storage space if the channel covered by it moves to the other side following the cutting motion of the movable cutter.

10. Reception channels as in CLAIM 9 inside of which the orthogonal blocks (27 & 28) act as terminals of the progression of the wire when predefined wire length has entered the channels and connected to terminal electrical switches (33), which is used to trigger the cutter, cutting that way the predetermined by the terminals wire length.

11. Orthogonal blocks for terminating the progression of the wire inside the receptor connected to the triggering mechanism as in CLAIM 10, where the exact position of the obstacle inside the channel at position corresponding to predetermined length of wire to be cut is achieved by the transfer of system of orthogonal block (28) and terminal switch (33) on a chain (31) which moves between two chainwheels (46 & 47) of rotation shafts (33.1 & 33.2) one of which shafts transfers the controlled rotation of a servo motor in such a way that a preset rotation of a servo motor corresponds to a position of the triggering obstacle to a predefined location.

12. Rotor-equipped machine for wire straightening and cutting being referred with its characteristics in CLAIM 1, with movable cutter and receptor combined in one unit as in Claim 7 the movable cutter and the receptor collaborating in their motion in such a way that the motion of the cutter towards one direction to be followed by the motion of the receptor towards the same direction (remaining parallel to itself) and followed also by simultaneous release of the wire being cut at the time, due to removal of channel's lowest face away from the "gate" of immovable sheet (20).

13. Movable cutter and receptor collaborating as in CLAIM 12, where their parallel motion is achieved by means of gear rulers (37 & 38) placed on the movable cutter and the outer edge of receptor being synchronised by means of connected rigidly gear wheels (39 & 40), each of which is connected to one of the gear rulers.

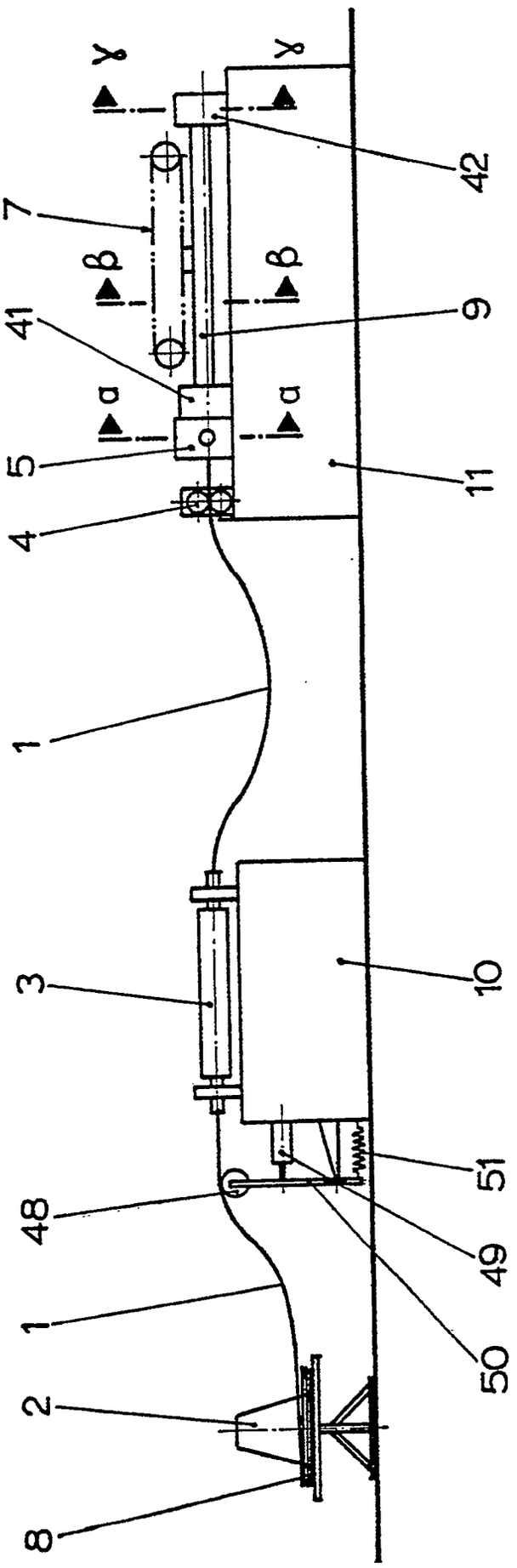
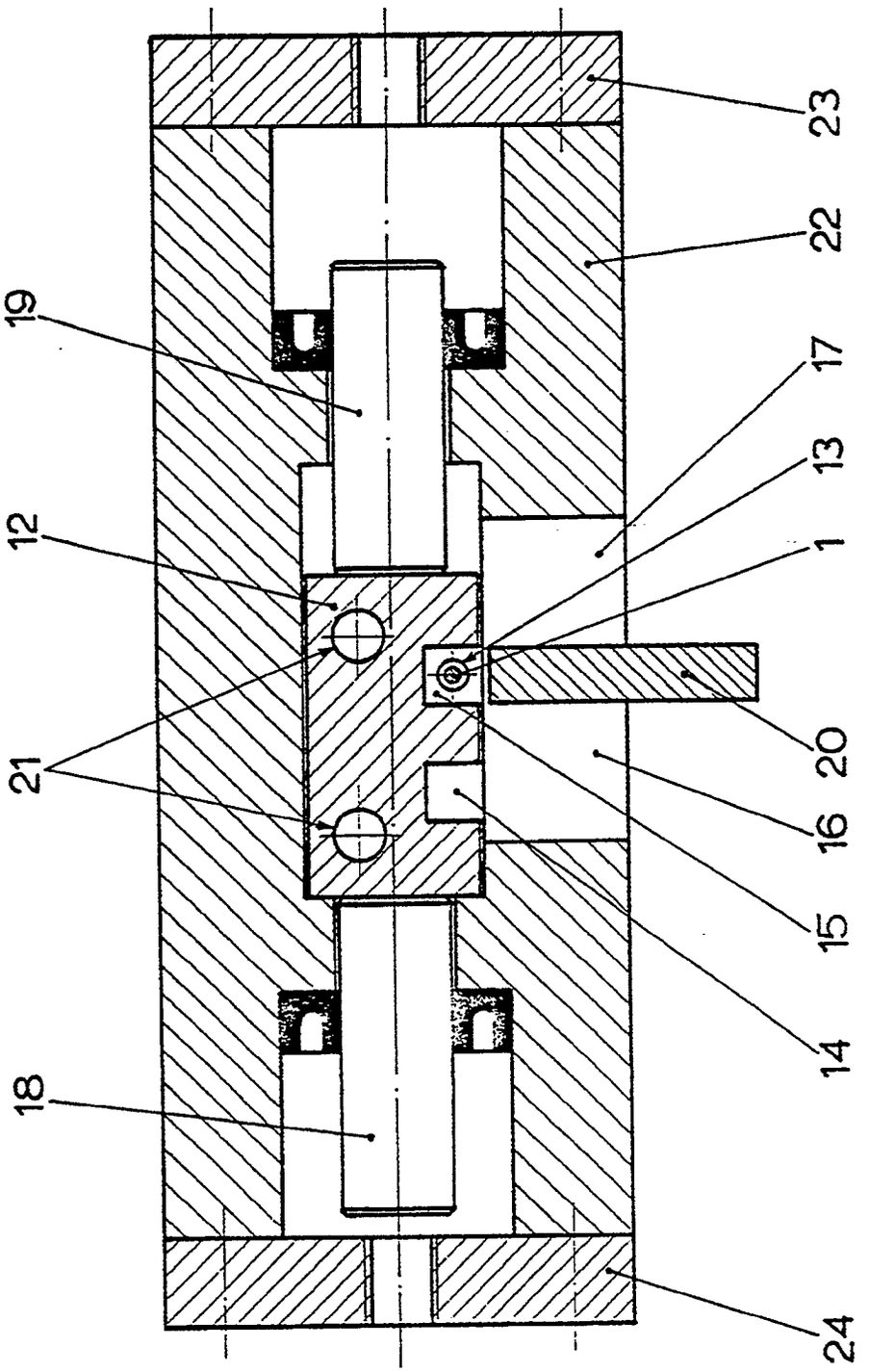
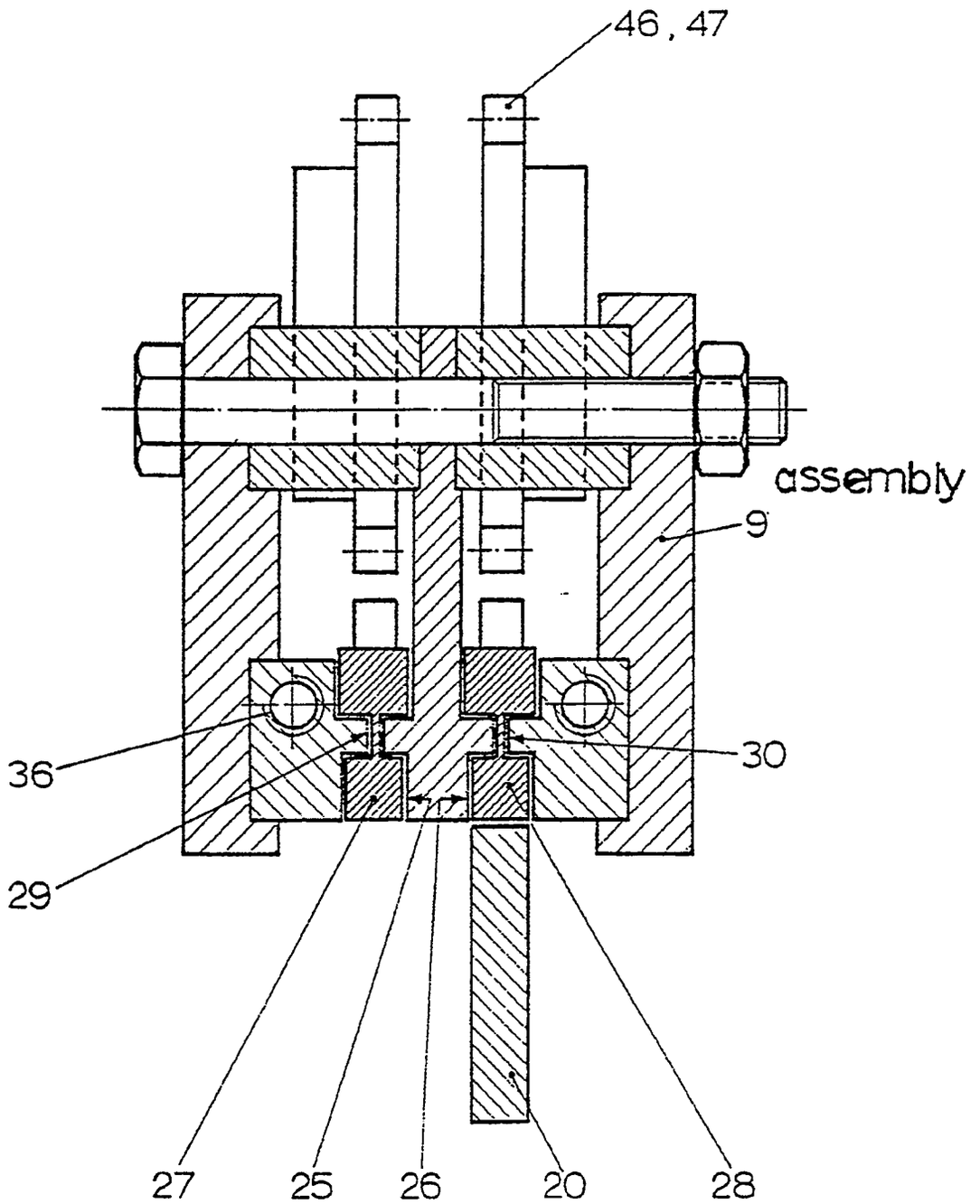


FIG. 1



SECTION a-a (from FIG.1)

FIG. 2



SECTION B-B (from FIG. 1)

FIG. 3

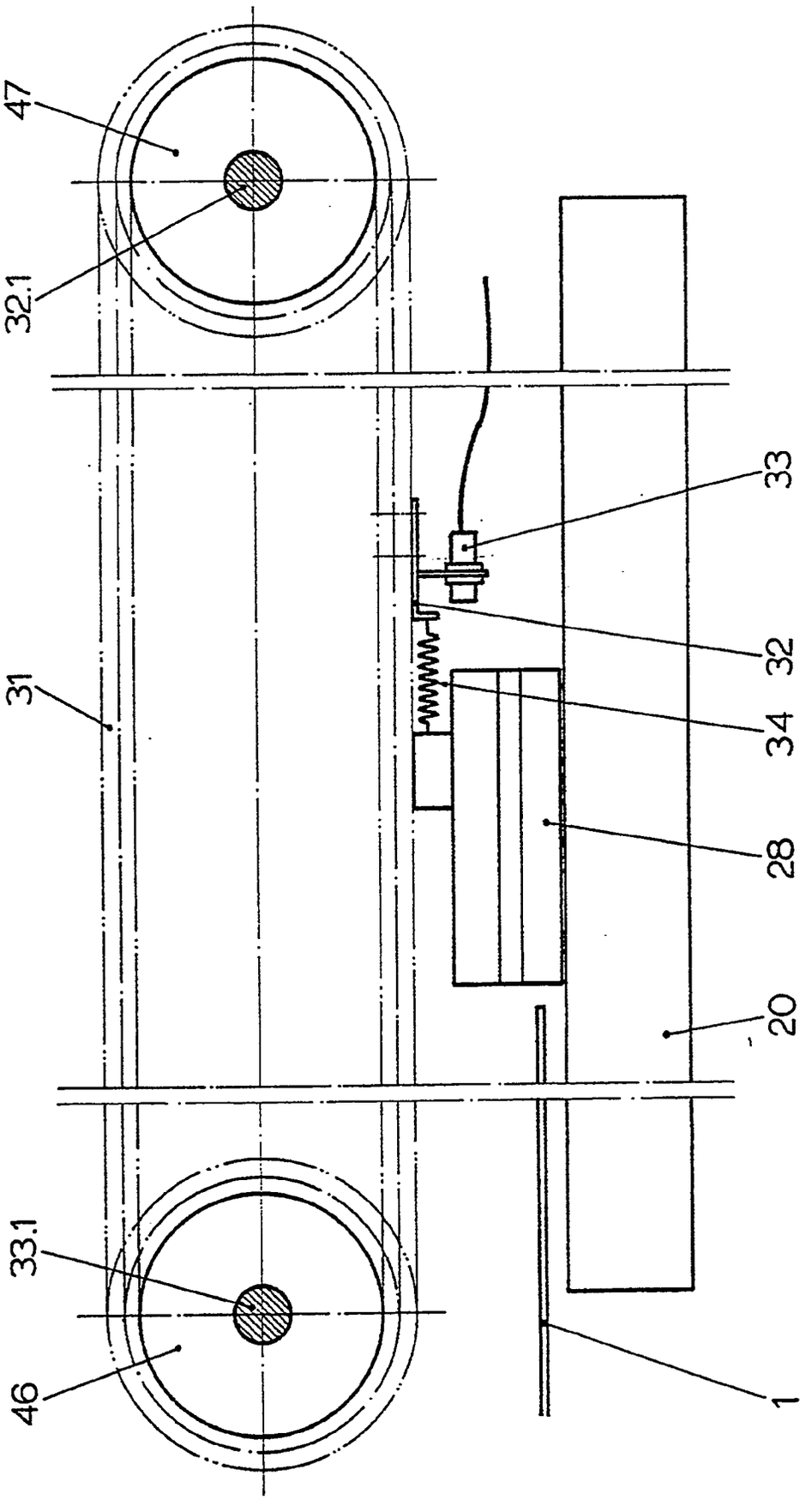
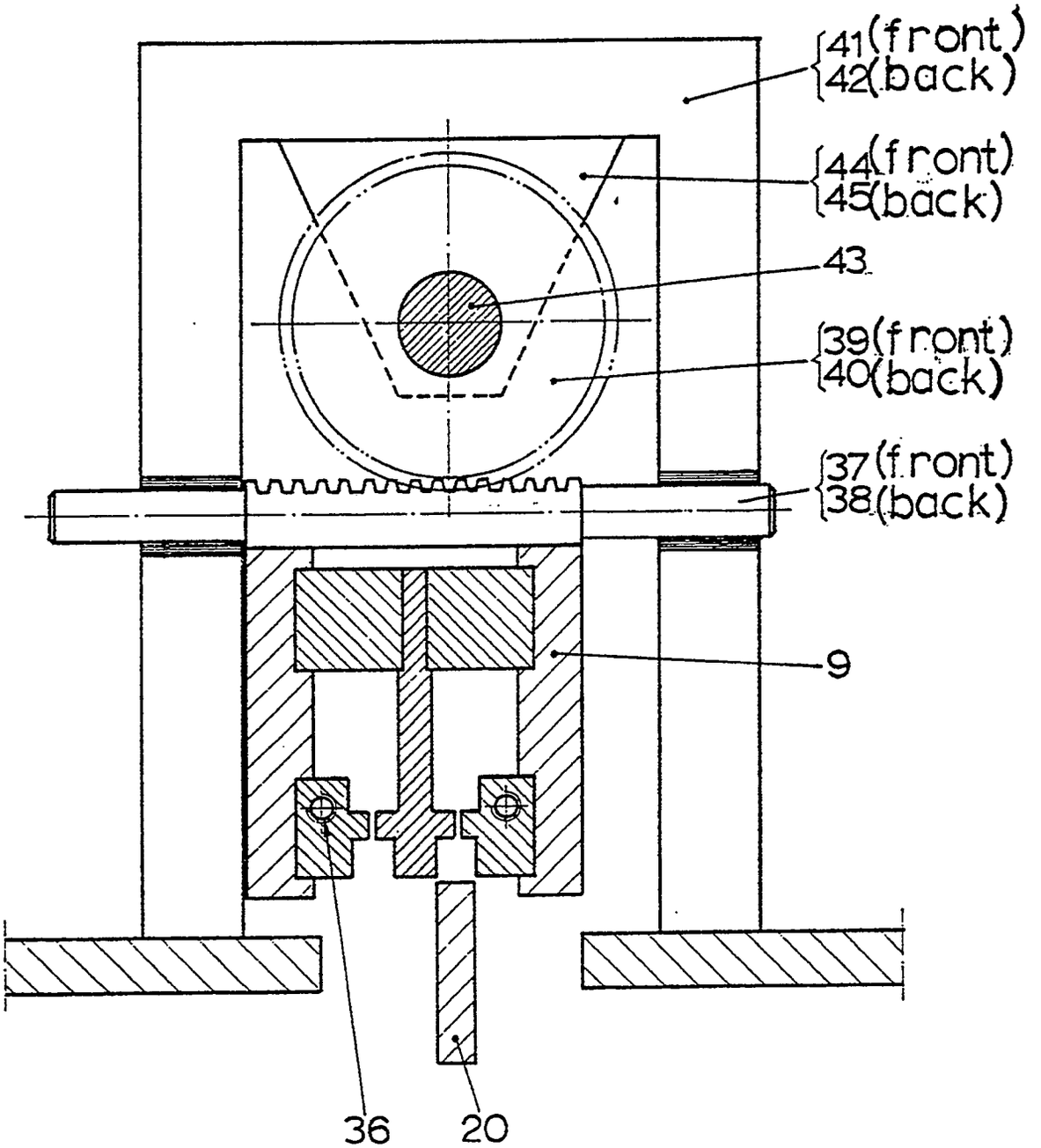


FIG. 4



SECTION Y-Y (from FIG.1)

FIG. 5

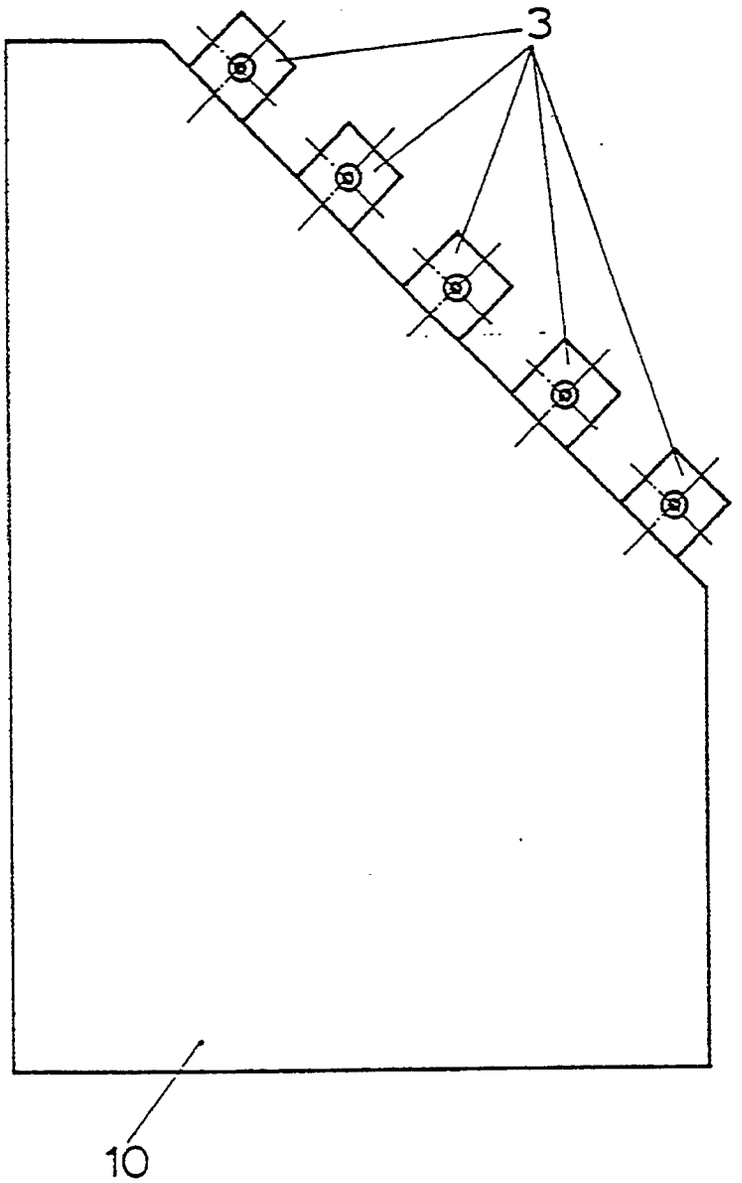


FIG. 6