

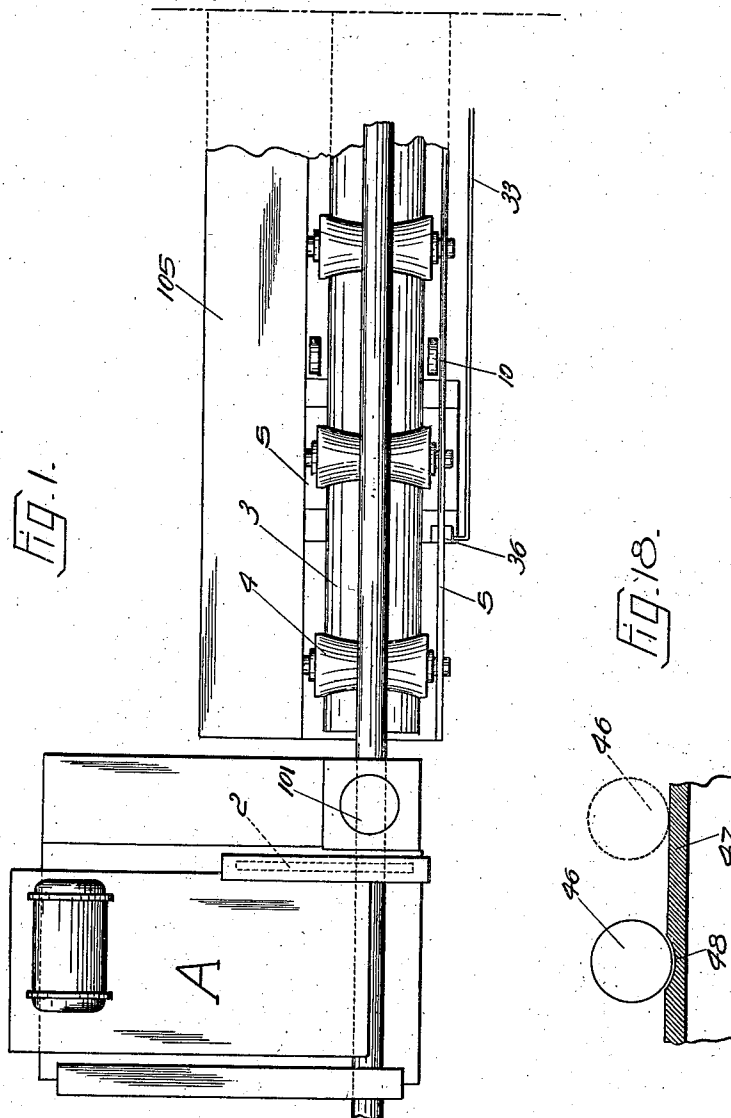
March 26, 1946.

M. MEYERBACH
DISCHARGING APPARATUS

2,397,192

Filed Jan. 28, 1944

8 Sheets-Sheet 1



INVENTOR.
Max Meyerbach
BY *Curran*
ATTORNEY.

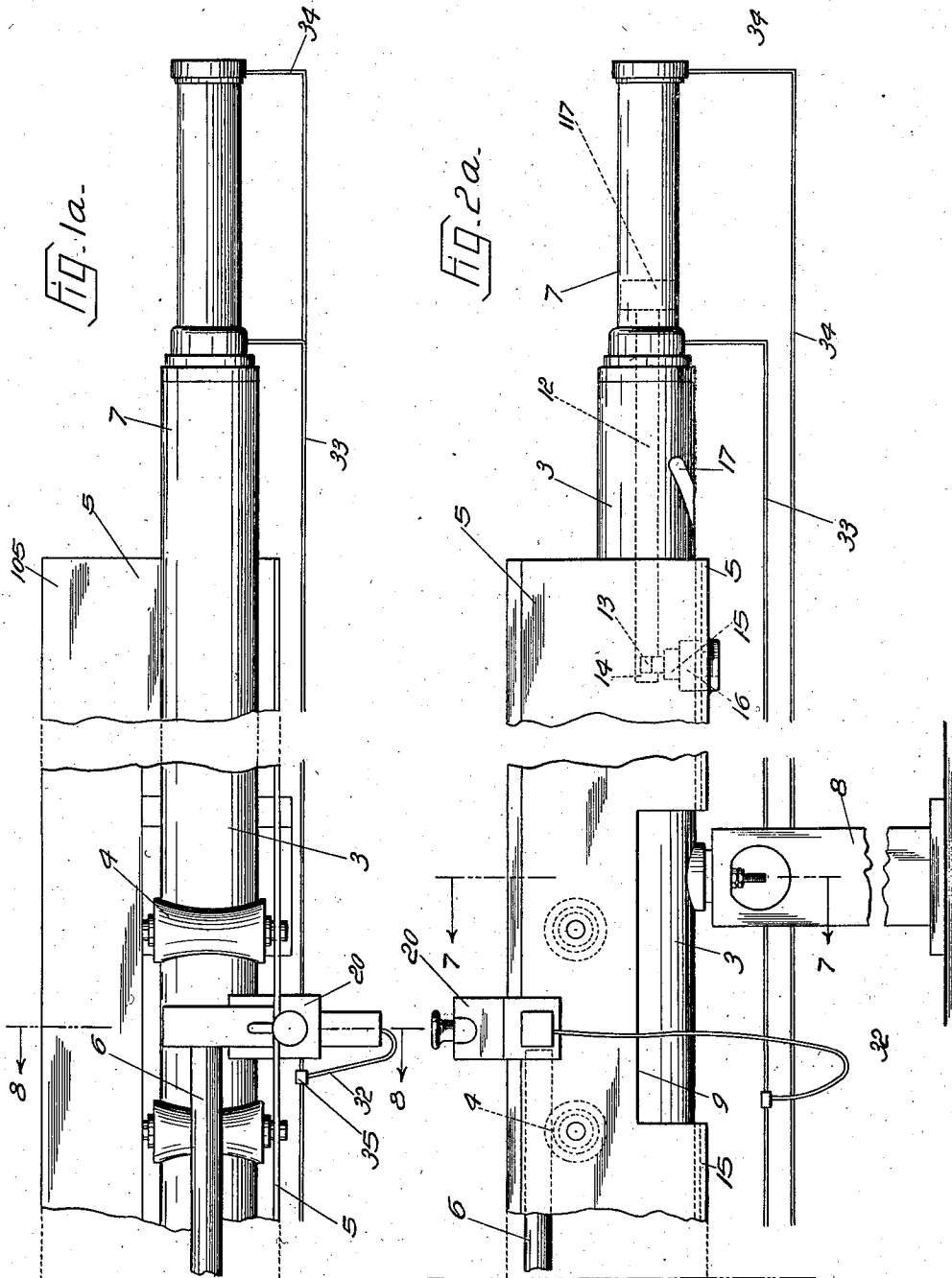
March 26, 1946.

M. MEYERBACH
DISCHARGING APPARATUS

2,397,192

Filed Jan. 28, 1944

8 Sheets-Sheet 2



INVENTOR.
Max Meyerbach
BY *Gernum*
ATTORNEY.

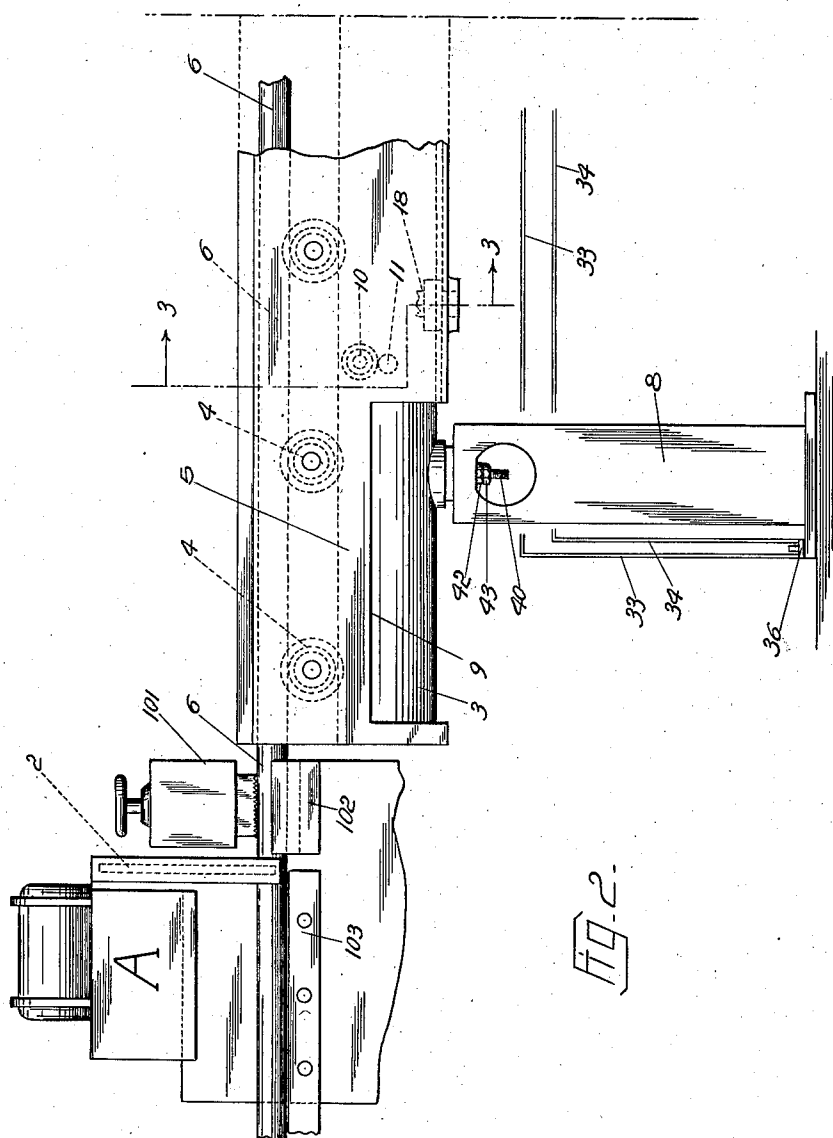
March 26, 1946.

M. MEYERBACH
DISCHARGING APPARATUS

2,397,192

Filed Jan. 28, 1944

8 Sheets-Sheet 3



March 26, 1946.

M. MEYERBACH

2,397,192

DISCHARGING APPARATUS

Filed Jan. 28, 1944

8 Sheets-Sheet 4

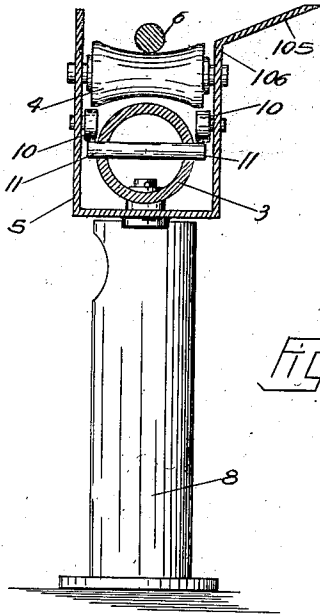


Fig. 3.

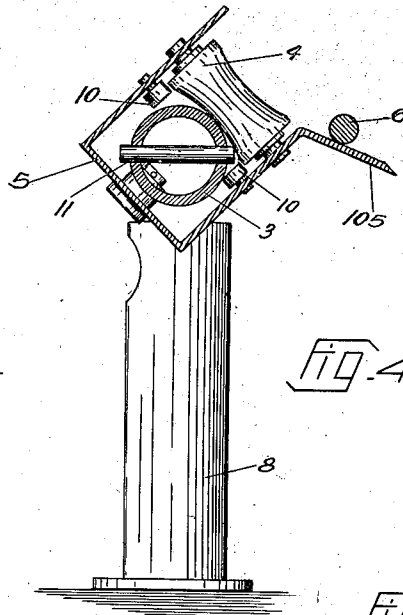


Fig. 4.

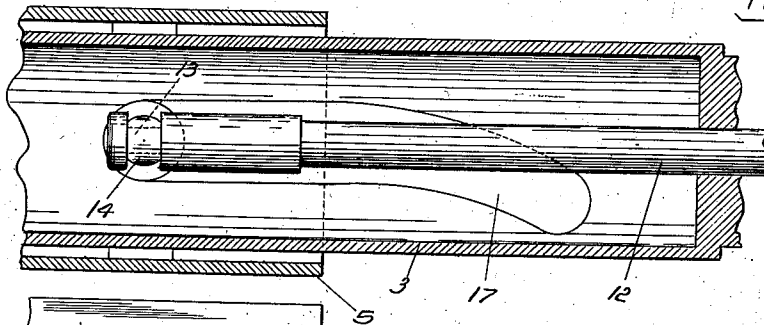


Fig. 5.

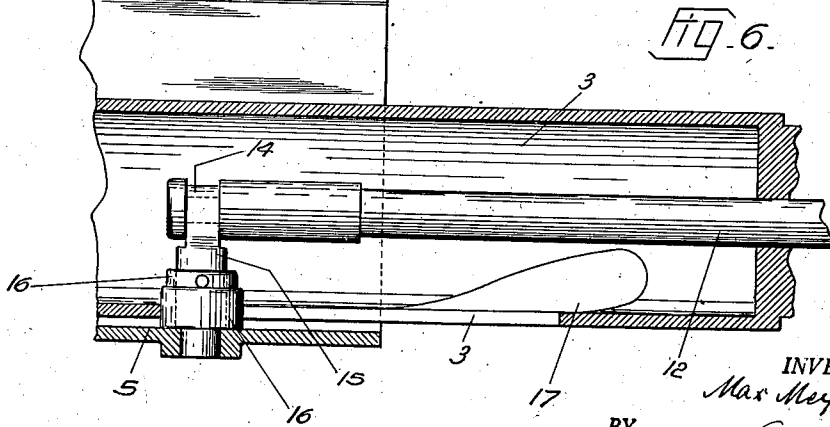


Fig. 6.

INVENTOR.
Max Meyerbach
BY
Gurem

ATTORNEY.

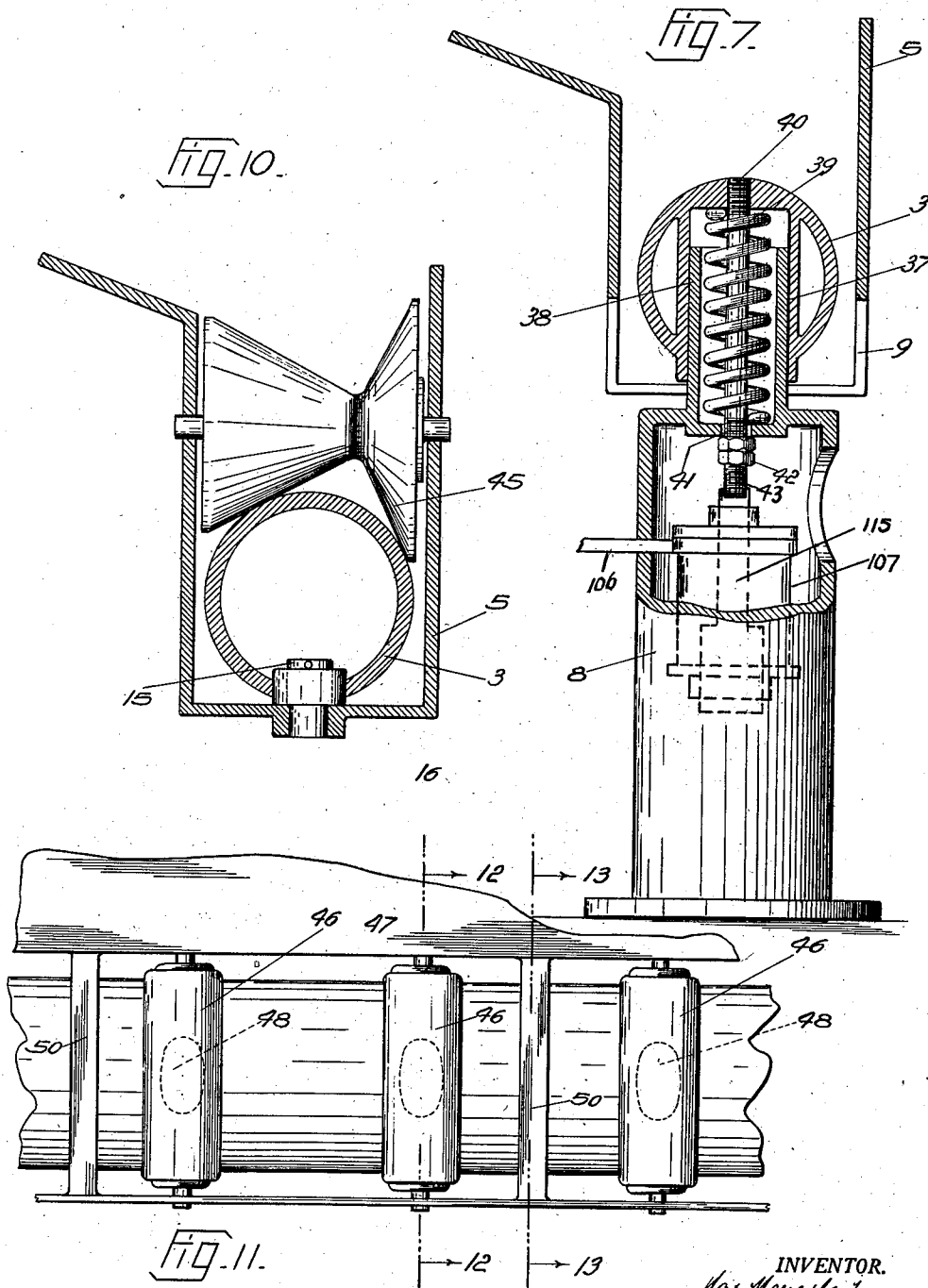
March 26, 1946.

M. MEYERBACH
DISCHARGING APPARATUS

Filed Jan. 28, 1944

2,397,192

8 Sheets-Sheet 5



INVENTOR.
Max Meyerbach
BY *W. J. Green*

ATTORNEY.

March 26, 1946.

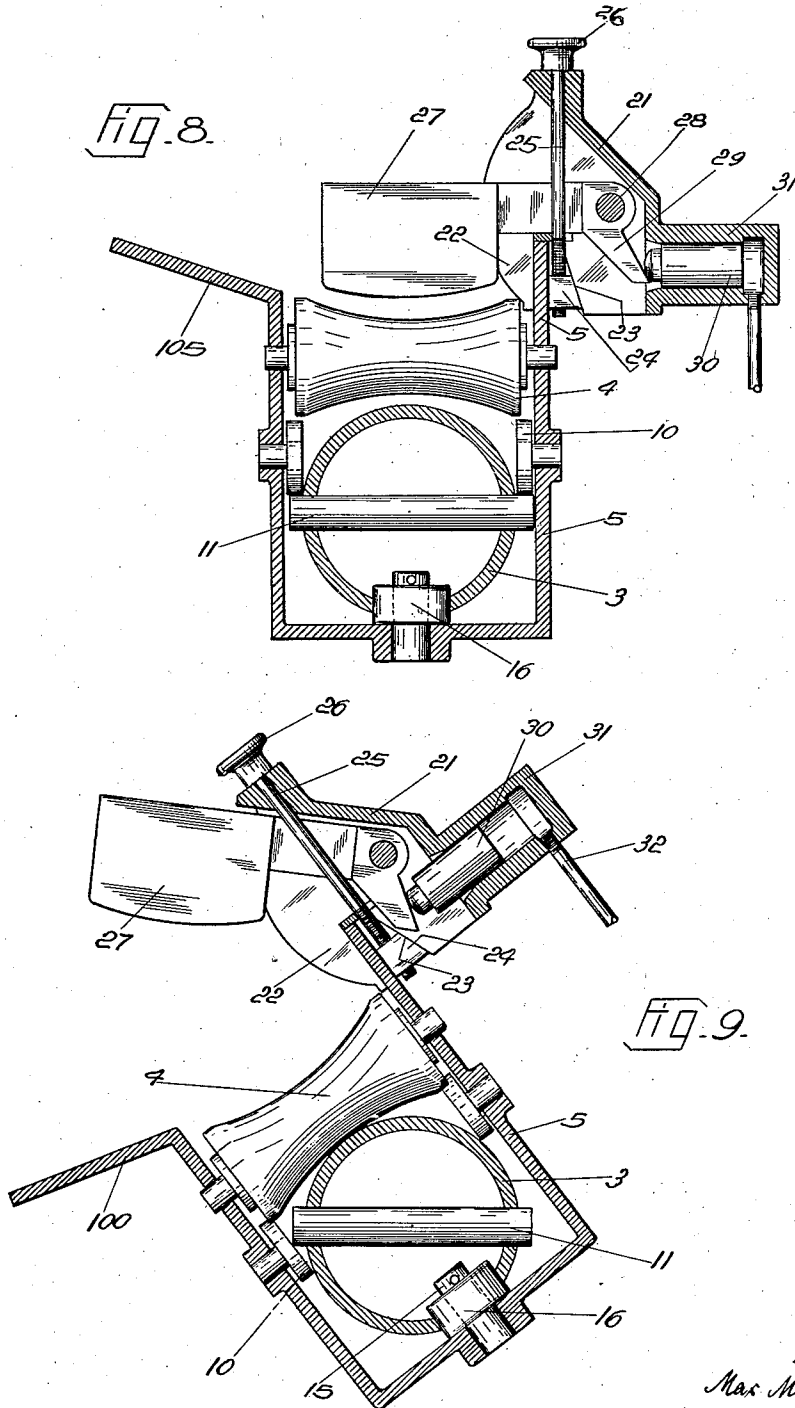
M. MEYERBACH

2,397,192

DISCHARGING APPARATUS

Filed Jan. 28, 1944

8 Sheets-Sheet 6



BY

INVENTOR.
Max Meyerbach
Ufrecu

ATTORNEY.

March 26, 1946.

M. MEYERBACH

2,397,192

DISCHARGING APPARATUS

Filed Jan. 28, 1944

8 Sheets-Sheet 7

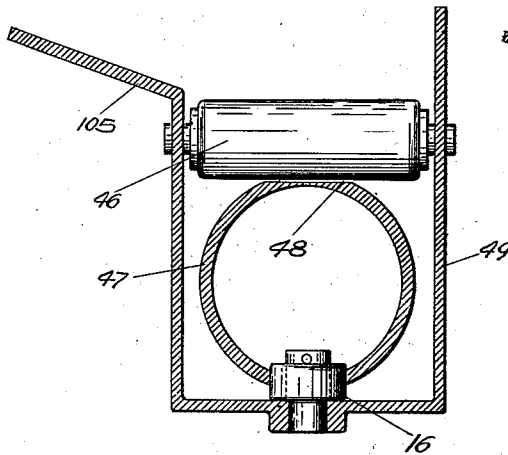


Fig. 12.

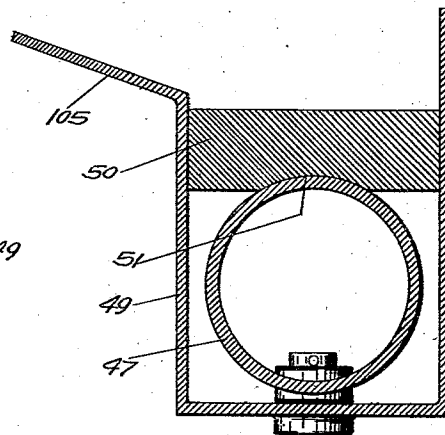


Fig. 13.

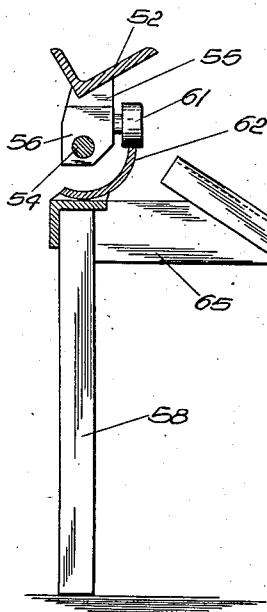


Fig. 16.

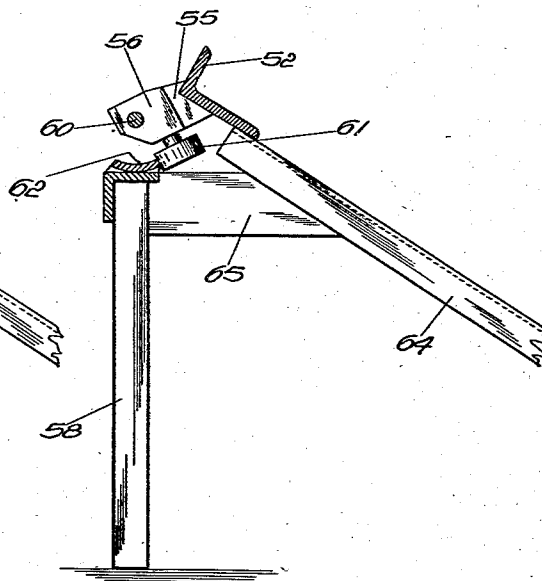


Fig. 17.

INVENTOR.
Max Meyerbach
BY *Attorney*
ATTORNEY.

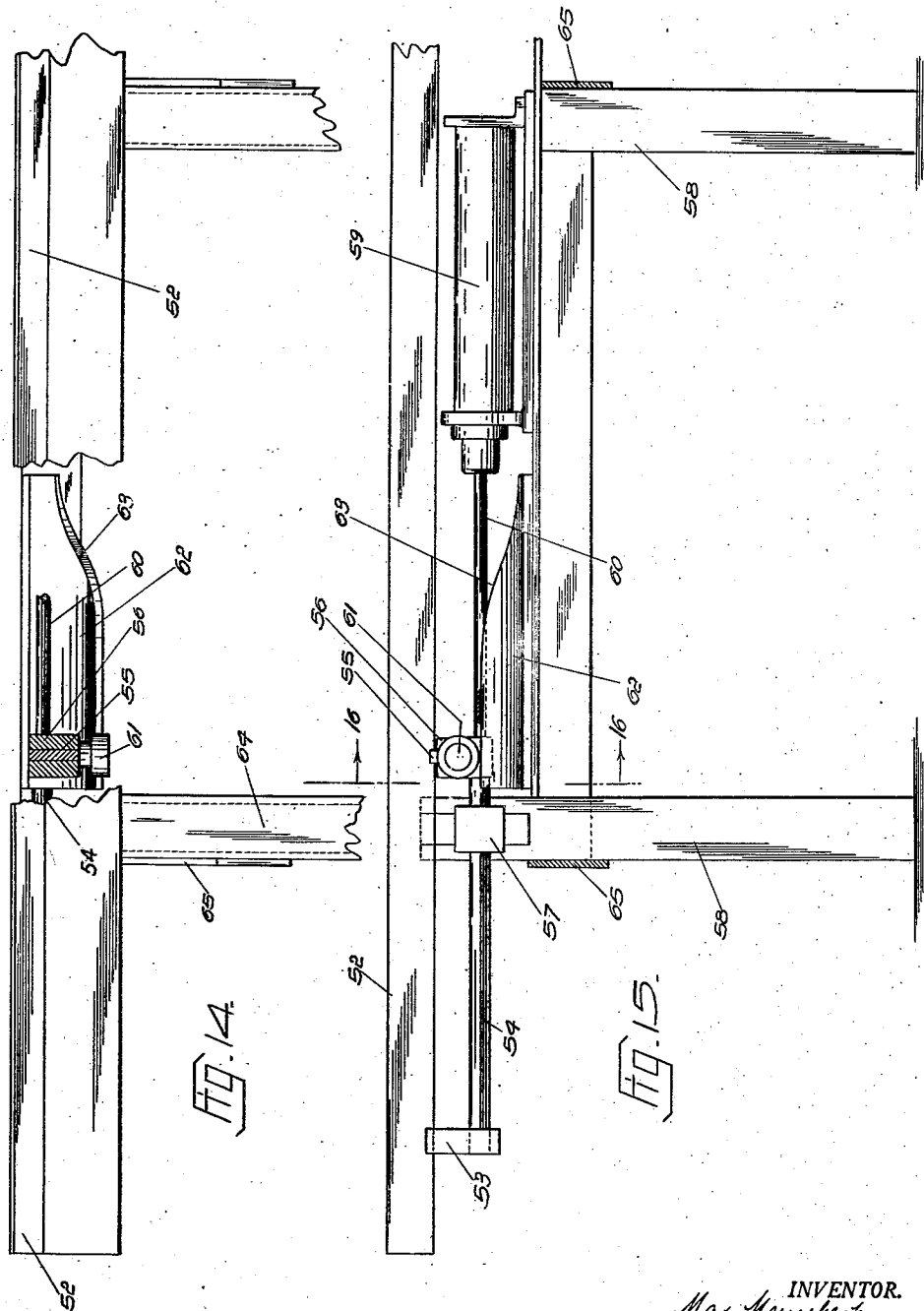
March 26, 1946.

M. MEYERBACH
DISCHARGING APPARATUS

2,397,192

Filed Jan. 28, 1944.

8 Sheets-Sheet 8



INVENTOR.
Max Meyerbach
BY *W. H. Green*

ATTORNEY.

UNITED STATES PATENT OFFICE

2,397,192

DISCHARGING APPARATUS

Max Meyerbach, New York, N. Y.

Application January 28, 1944, Serial No. 520,131

14 Claims. (Cl. 29—69)

The invention relates to a discharging apparatus, and particularly to an apparatus for discharging stock from machine tools, for instance cutters and saws, from which continuously or intermittently fed and treated articles, for instance rods, bars, billets, tubes and the like, are to be removed in conformity with the feed.

The invention is more particularly concerned with apparatus which upon delivery of the stock from the working machine are lengthwise displaced for the final discharge.

It is an object of the invention to combine the lengthwise displacement of the discharge apparatus with a movement resulting in the final removal of the treated stock.

It is a further object of the invention to automatically control the discharging procedure.

It is another object of the invention to direct the discharge of the treated stock in such a manner that its removal is effected in a substantially perpendicular direction to the lengthwise displacement of the discharge conveyor.

It is also an object of the invention to effect the entire discharging operation by means of a single power source.

It is another object of the invention to simplify the discharging procedure whereby an exceedingly quick and unobstructed removal is accomplished.

With these and further objects in view which will become apparent as this specification proceeds, the invention will be hereinafter described with reference to the accompanying drawings which illustrate certain preferred embodiments of the same, without, however, limiting its construction or application.

The discharging apparatus is by way of example illustrated in the drawings in cooperation with a rotary saw; however, it is understood that the apparatus may be associated with any other working machine, such as a machine tool, to receive stock therefrom and to finally discharge the same.

In the drawings,

Fig. 1 and Fig. 1a are a top view of a first embodiment of the discharging apparatus according to my invention,

Fig. 2 and Fig. 2a are a sectional side elevation of the apparatus shown in Fig. 1,

Fig. 3 is a sectional elevation taken on line 3—3 of Fig. 2,

Fig. 4 is a sectional view similar to that of Fig. 3 showing the parts illustrated thereby in a different operating position,

Figs. 5 and 6 are vertical and horizontal sec-

tional part elevations on an enlarged scale of the means for tilting the discharging apparatus during its longitudinal displacement,

Fig. 7 is a vertical sectional elevation on an enlarged scale taken on line 7—7 of Fig. 2a,

Fig. 8 is a vertical sectional elevation on an enlarged scale taken on line 8—8 of Fig. 1a,

Fig. 9 is a vertical sectional elevation similar to that of Fig. 8, showing the parts thereof in a different operating position,

Fig. 10 is a vertical sectional view of the discharge apparatus showing a modified form of the discharging rollers,

Fig. 11 is a top view of a part of a modified discharging apparatus,

Fig. 12 and 13 are vertical sectional elevations taken on lines 12—12 and 13—13 of Fig. 11,

Fig. 14 is partly a top view and partly a sectional elevation of a further modification of a part of the discharging apparatus,

Fig. 15 is a side elevation of the discharging apparatus shown in Fig. 14,

Fig. 16 is a vertical sectional elevation taken on line 16—16 of Fig. 15,

Fig. 17 is a similar elevation but showing the parts of Fig. 16 in a discharging position, and

Fig. 18 is a part sectional elevation on a reduced scale, showing two operating positions of the discharge conveyor.

In the embodiment shown in Figs. 1 to 8 the discharging apparatus is functionally combined with a rotary cutter A.

The cutter A is provided with a roller conveyor 103, Fig. 2, to conduct billet 6 into the cutter. The cutter is also provided with a rotary saw blade 2, a clamp or vise 101 and a support 102 for the billet, the latter being firmly held by the vise during the severing operation.

The discharging apparatus mainly comprises a supporting body 3 preferably of tubular cross section, a movable frame 5 surrounding support 3, a plurality of conveyor rollers 4 mounted in movable frame 5 to form a conveyor race receiving the cut stock 6, and a device to longitudinally displace frame 5 including a fluid operated cylinder 7. The supporting body is rigidly mounted on supports 8 (Figs. 3, 4, 7) in a manner which will be described hereinafter.

The conveyor rollers 4 having, for instance, a concave shape are rotatably supported in the vertical opposite walls of frame 5 which is shown as having a U-shaped cross section.

A lateral extension 105 is fastened to the one upper edge 106, Fig. 2, of frame 5; the purpose of this extension will be explained as this speci-

fication proceeds. Recesses 9 are provided in the lower part of frame 5, see Fig. 2, to permit longitudinal displacement of the frame relatively to the supporting body 3 and to stationary vertical supports 8 which carry body 3.

The tubular body 3 is provided with lateral projections 11, Fig. 3; these projections may, for instance, consist of end sections of a pin mounted in tubular body 3.

Rollers 10 are rotatably located in the walls of frame 5 above projections 11 and carried on these projections. In the initial position of the discharging apparatus shown in Figs. 1, 2 and 3, frame 5 is suspended on tubular body 3 by means of rollers 10 and projections 11.

As apparent from Figs. 1 to 3, the rollers 10 and the projections 11 are arranged in such a manner that in the initial position of frame 5, which is the position closest to saw A the rollers 10 are supported on top of projections 11, thus bringing rolls 4 out of contact with body 3; in this position the rolls 4 rotate freely in frame 5.

The cylinder 7 is preferably arranged coaxially with the tubular body 3 and is provided with a double acting piston 117, the pressure medium being admitted at opposite ends of the cylinder through tubes 33, 34, Figs. 1, 2. A rod 12 rigidly connected with piston 117 extends into the hollow interior of tubular body 3.

As particularly shown in Figs. 5 and 6, piston rod 12 has a reduced portion 13 which is engaged by the forked end 14 of a guide element 15. Guide element 15 is rigidly fixed to the movable frame 5; the middle portion thereof is provided with a rotatable ring 16 held in position by the wall of frame 5 and by a collar 116.

Ring 16 engages a slot 17 located in the tubular body 3. The slot 17 is composed of a straight front portion parallel to the longitudinal axis of body 3 and a curved rear portion nearer to the driving cylinder 7.

In the embodiment illustrated in Fig. 2, a second guide element 18 is located in a part of frame 5 situated closer to saw A engaging a slot similar to slot 17 of body 3 and having the same configuration as slot 17. Additional guide elements and slots may be provided if desired. When the movable frame is displaced in the longitudinal direction, the guide pin 15 rotates the frame about the longitudinal centroid of tubular body 3.

A longitudinally adjustable device 20 is provided in order to interrupt the feed of billet 6 into the saw at a predetermined length; this stop device is illustrated in detail in Figs. 8 and 9, Fig. 8 illustrating the normal position of the stop and Fig. 9 showing its position when the frame 5 has been rotated during its longitudinal displacement; the stop consists of a housing 21 which is slidable on one side wall of frame 5, portion 22 of the housing engaging the inner face of this side wall. The outer face of the side wall is engaged by a wedge member 23 which contacts an inclined face 24 of housing 21. A screw 25 having a knob 26 extends through the housing into a threaded hole of wedge 23 in such a manner that by turning knob 26 the device may either be fixed to frame 5 or be releasable for lengthwise adjustment. A stop lever 27 is pivotally connected to housing 21 through a pin 28; it has a projecting portion 29 which is contacted by the end of a piston 30 movable in a cylinder portion 31 of housing 21.

The lever 27 is lifted upon advancement of piston 30 under the action of a pressure fluid introduced into cylinder 31 through a fixable hose 32.

When the pressure is released, the lever 27 will move downwardly by gravity.

The movement of piston 30 is initiated immediately upon the admission of a pressure medium, whereas the movement of piston 107 is commenced only after the pressure has been released through pipe 34 and control valve 36.

As shown in Figs. 1 and 2, pipes 33 and 34 are arranged to introduce a pressure medium into cylinder 7 at opposite sides of piston 107. Hose 32 is connected to pipe 33 at 35. A preferably foot operated control valve 36 is provided to admit fluid under pressure either into pipe 33 and hose 32 or into pipe 34. When the pipes 32, 33 are charged with fluid under pressure, the pipe 34 is automatically connected through control valve 36 to the exhaust and vice versa.

The tubular body 3 is preferably resiliently mounted on supports 8 as illustrated in detail in Fig. 7.

For each support a cylindrical sleeve 37 is arranged in body 3 to receive the tubular extension 38 of support 8. A spring 39 is positioned within cylindrical sleeve 37 and extension 38 so as to resiliently carry body 3. A stud 40 is screwed into body 3 and extends downwardly through a hole 41 into support 8. Nuts 42, 43 are screwed unto the lower threaded end of stud 40 to limit upward movement of body 3 under the action of spring 39.

From this description it will be apparent that tubular body 3 as well as cylinder 5 suspended thereon are resiliently carried upon supports 8 by springs 39 and may be pressed down on the supports 8, the latter being located within the range of recesses 9 of the frame.

Instead of using a spring other resilient means may be provided, e. g. a rubber cushion or fluid charged resilient systems. If clamp 101 is actuated by a fluid or gas pressure medium, the arrangement is preferably such that the clamp and the downward movement of the roller conveyor is effected simultaneously.

A suitable receptacle, such as a truck, may be provided to receive the discharged stock from the conveyor.

The operation of the above described apparatus is, as follows:

Billet 6 is introduced into saw A from the left side of Figs. 1 and 2 and is transported by conveyor 103 and discharge conveyor rollers 4 until the billet engages stop lever 27 of the stop device 20.

The stop has been adjusted lengthwise of frame 5 in such a manner that a work-piece of a desired length will be severed from the stock upon operation of the saw.

Nuts 42, 43 have been adjusted so that springs 39 lift the discharge conveyor to a position in which the upper faces of rollers 4 contacting the work-piece are slightly higher than the upper face of the supporting block 102. The clamp is now actuated; the actuation of the clamp causes the discharge conveyor to be moved downwards against the action of springs 39.

The resilient mounting of the discharge conveyor thus permits, within predetermined limits, an automatic adjustment of the level of the conveyor relatively to support 102; this may be helpful in handling stock of different shape or diameter. The retraction of the discharge conveyor from the initial position may be also effected by connecting the pressure source actuating the clamp with a device such as the differential piston 115 which pulls the conveyor downward.

against the action of springs 39, see Fig. 7; the tube 106 is in this case connected with the pressure source of the clamp. Cylinder 107 is located inside of column 8 in any suitable manner.

As soon as the stock 6 has been gripped tightly by the clamp the cut will be performed, the rotating circular saw being advanced relatively to the work-piece 6 in the customary manner. In the embodiment shown in Figs. 1 and 2, the saw blade 2 exerts a downwardly directed pressure upon the stock which is carried on support 102 of the clamp.

As soon as the desired length has been severed from the billet and the saw has been retracted, the cut-off length is lifted together with the conveyor by the action of springs 39 as the clamping device 101 no longer acts upon the cut-off length which is now ready to be discharged from the conveyor.

It should be noted that while the above recited steps take place, the rollers 4 of the conveyor are freely rotatable, the frame 5 being suspended on projections 11 by means of roller 10, as shown in Figs. 1 to 3. This arrangement, therefore, provides for an unobstructed easy feed of the stock until it contacts stop lever 27.

Control valve 35 is now actuated to admit pressure into pipe 33 and hose 32, while pipe 34 is connected to the exhaust. Piston 107 will be moved accordingly to the right in Figs. 1 and 2, the piston rod 12 simultaneously pulling along guide element 15 which displaces frame 5 in the same direction.

This movement causes rollers 10 to roll off from projections 11 so that the frame 5 will slide downwards until the concave rollers 4 contact body 3; during the displacement of piston 107 the concave rollers 4 will roll upon tubular body 3, their peripheral speed being substantially twice the linear speed of frame 5.

From the previously given description of the stop mechanism it will be clear that when piston 107 is actuated, pressure is simultaneously introduced through hose 32 into cylinder 31 to advance piston 30 and lift stop lever 27. The release of the stop which occurs before piston 107 commences to move allows a movement of the cut length of stock relatively to and faster than frame 5 due to the greater peripheral speed of the rolls 4.

As will be particularly apparent from Figs. 5 and 6, cylinder 7 will first cause a linear movement of frame 5, that is during the period of time in which the guide 15 and ring 16 are within the straight portion of slot 17. When guide means 15, 16 move along the curved portion of said slot, rotational movement is superimposed upon the linear movement of frame 5 so as to swing the frame into the tilted position shown in Figs. 4 and 9.

Due to this tilting movement, the cut length of stock 6 will be caused to roll or slide laterally off the concave rollers 4 and to be discharged over extension 105 of frame 5 into a suitable receptacle. By additional guide means 18 which are not connected to the piston rod 12 a guarantee is created that the end of frame 5 facing the machine 1 properly participates in the angular movement.

After the discharge of the cut length of stock, control valve 36 is actuated to introduce pressure into pipe 34 and to connect pipes 32 and 33 with the exhaust.

Piston 107 will now affect the return stroke,

frame 5 being returned into the initial position shown in Figs. 1 to 3.

While the guide elements 15, 18 slide in their slots the frame is retitled so that the axes of the concave rollers 4 are again horizontally disposed. The rollers 10 are returned to the position where they will again engage projections 11 bringing the concave rollers 4 out of contact with body 3.

The stop lever 27 has been returned to its lower position due to the action of gravity upon release of pressure in cylinder 31. The discharging apparatus is now ready for renewed operation.

It will be clear from the above that in the discharge conveyor according to the invention a single valve controls all necessary steps; a single driving means is required to cause the linear and angular movements of the frame; the cut length of stock is rapidly and efficiently discharged, while friction is reduced to a minimum.

Referring now to Fig. 10 which is generally similar to Fig. 3, it may be desirable under certain conditions to adapt the shape of the conveyor rollers to that of supporting means 102 of the saw. Such modified roller shape is illustrated in Fig. 10 wherein roller 45 comprises two conical portions, the sides of the conical portions forming approximately right angles with one another.

The second modification of the discharge conveyor is illustrated in Figs. 11, 12, 13, 18, in which rolls 46 of cylindrical shape are provided; such straight rollers are inexpensive to manufacture.

The means for disengaging the conveyor rollers from the tubular body in the initial position of the conveyor frame have also been modified.

The tubular body 47 replacing body 3 of the first embodiment is provided with recessed portions 48 on its top. These recessed portions are spaced in such a manner on tubular body 46 that in the initial position of frame 5, e. g. in the position closest to the saw, each roll 46 is disposed above one of said portions 48.

Frame 49 is similarly constructed as frame 5 of the first embodiment with the one exception that it is provided with webs 50 rigidly connected thereto and arranged at certain distances intermediate adjacent rolls 46. The lower face of each web has a curved recess 51 corresponding to the cylindrical periphery of tubular body 47.

The webs 50 and their recesses 51 are arranged in such a manner that in the initial position shown in Fig. 12 the webs contact the cylindrical surface of the tubular body 47, the frame 49 being suspended from said body by means of the webs 50. The rolls 46 are in this position out of contact with body 47 as they are disposed above the recessed portions 48. The rolls are thus freely rotatable. When the frame is displaced lengthwise by the driving cylinder as previously described, the rolls 46 move from the full line position to the dotted line position, as shown in Fig. 18, so as to engage the cylindrical surface of tubular body 47 and to lift frame 49 somewhat, the webs 50 being simultaneously brought out of contact with body 47; the frame is now in the position to be tilted in the inclined position in which the cut length of stock is discharged from the conveyor.

When during the return stroke frame 49 again approaches its initial position, the conveyor rolls 47 will enter the recessed portions 48 and the frame will be lowered correspondingly. However, this downward movement will be limited by engagement of webs 50 with body 47 in such a manner that rollers 47 are prevented from contacting the recessed portions 48.

Figs. 14 to 17 illustrate another simplified embodiment of the invention.

The discharge conveyor comprises a trough shaped member 52 of angular shape which near its front end (left end of Fig. 15) is provided with a downwardly extending rib 53 rigidly connected thereto; one end of a rod 54 is rigidly fastened to this rib 53. Trough 52 is by means of rib 55 rigidly connected with a coupling housing 56 mounted on the other end of rod 54, the latter being freely movable in a bearing 57 connected with a frame structure 58.

A driving device 59 similar to cylinder 7 of the first embodiment is carried by frame 58 and is provided with a piston rod 60 disposed coaxially with rod 54 and connected with coupling housing 56.

Rod 54 is connected with the coupling housing 56 in such a manner that rod 54 and trough 52 follow all longitudinal movements of the piston rod while the latter does not participate in tilting movements imposed upon rod 54 and trough 52.

In order to produce the tilting of the trough a guide roller 61 is rotatably supported in coupling housing 56 so as to engage a stationary guide member 62 carried by frame 58. Guide member 62 is provided with a guide face 63 which includes a straight front portion and a portion inclined towards the driving cylinder 59.

It is to be noted that trough 52 is somewhat eccentrically disposed relatively to rod 54 so that, due to the action of gravity, the trough 52 will rotate about the axis of rod 54 in clockwise direction as seen in Figs. 16 and 17. This will keep guide roller 61 in contact with guide face 63. Slide members 64 fastened by supports 65 to frame 58 are provided to receive the material thrown off from trough 52.

The rear end of trough 52 will be supported and guided by a rod similar to rod 54 and guiding means similar to those indicated at 61, 62, 63.

Since the structure at the rear end substantially corresponds to that illustrated in Figs. 14 to 17 except for the fact that it is not connected to a driving cylinder, it is not considered necessary to show the rear end in the drawings.

A stop device (not shown) for determining the length of stock may be attached to trough 52 and is preferably adjustable lengthwise thereof. This stop device would have a function similar to that of stop device 20 mentioned with reference to the first embodiment of the invention shown in Figs. 1 to 4.

The apparatus illustrated in Figs. 14 to 17 operates as follows:

The stock to be cut is advanced in trough 52; if a stop device is provided, the stock will be moved until it contacts the stop. The cutting operation will then be performed and hereafter piston rod 60 will be moved to the right side of Figs. 14 and 15, pulling rod 54 and trough 52 along.

When guide roller 61 travels on the inclined portion of guide face 63, the trough 62 will be tilted downwardly into the position shown in Fig. 17 so that a severed length of stock will be discharged onto the slide members 64.

It will be clear that in this embodiment of the invention displacement of a stop device is not required during the discharge operation as the stock will not be advanced beyond the position of the stop.

During the return stroke trough 52 is returned into its initial position, guide roller 56 travelling upwardly on guide face 63. The apparatus is then ready to receive the next length of stock.

The modification shown in Figs. 14 to 17 has the advantage of great simplicity and is particularly suitable in cases where conveyor rollers for supporting the stock are not required.

While certain preferred embodiments of the invention have been described hereinabove and illustrated in the accompanying drawings, it is to be understood that the invention is not limited to the precise details so illustrated and described, but that various changes may be resorted to without departing from the scope of the appended claims.

What I claim is:

1. An apparatus for the discharge of stock from a working machine comprising a stationary support extending in the longitudinal transporting direction of the stock, means above the said support to transport the stock from the said machine, a frame encasing the said stationary support to carry the said transporting means, means to displaceably suspend the said frame on the said stationary support, means to displace the said frame from and towards the said machine in a longitudinal direction and to tilt the same simultaneously with its longitudinal displacement from the said machine at an angle relative to the direction of its longitudinal displacement for the discharge of the stock.

2. An apparatus for the discharge of stock from a working machine comprising a tubular stationary supporting body extending in the longitudinal transporting direction of the stock, a plurality of concave conveyor rollers above the said supporting body to transport the stock, a frame encasing the said supporting body to carry the said conveyor rollers, rollers supporting the said conveyor rollers located in the said frame in such a manner as to be displaceably supported by the said stationary supporting body, means to displace the said frame from and towards the said machine in a longitudinal direction, and means to tilt the frame and the conveyor rollers at an angle relative to the direction of its longitudinal displacement for the discharge of the stock.

3. An apparatus for the discharge of stock from a working machine comprising a stationary tubular supporting body extending in the longitudinal transporting direction of the stock, means above the said body to transport the stock, a frame encasing the said supporting body carrying the said transporting means, means to displaceably suspend the said frame on the said supporting body, a guide pin connected to the said frame, a slot in the wall of said supporting body to guide the said frame during its displacement, the said slot being linear in its front portion and curved in its rear portion, and means connected with the said guide pin to displace the said frame from and towards the said machine and to tilt the same by the passage of the said guide pin through the curved position of the said slot at an angle relative to the direction of its longitudinal displacement for the discharge of the stock.

4. In a combined apparatus for cutting stock and for the discharge thereof a conveyor to transport the stock and to discharge the cut off sections, means to clamp the stock during the cutting operation, a cutting mechanism including a cutter, means to raise the conveyor for the transport of the stock above the clamping level and to lower the same to the clamping level for the clamping and cutting action, means to displace the discharge conveyor in a substantially longitudinal direction from and towards the said cutting mechanism and means to superimpose upon the

said conveyor a tilting movement at an angle relative to said longitudinal discharge direction.

5. In a combined apparatus for cutting stock and for the discharge thereof a conveyor to transport the stock and to discharge the cut off section, means to clamp the stock during the cutting operation, a cutting mechanism including a cutter, resilient means to raise the conveyor during the transport of the stock above the clamping level, and means to lower the same to the clamping level for the clamping and cutting action, means to displace the discharge conveyor in a substantially longitudinal direction from and towards the said cutting mechanism and means to superimpose upon the said conveyor a tilting movement at an angle relative to said longitudinal discharge direction.

6. In a combined apparatus for cutting stock and for the discharge thereof a conveyor to transport the stock and to discharge the cut off sections, means to clamp the stock during the cutting operation, a pressure medium to actuate the clamp, a cutting mechanism including a cutter, means connected with the clamp actuating pressure medium to raise the conveyor for the transport of the stock above the clamping level and to lower the same to the clamping level for the clamping and cutting action, means to displace the discharge conveyor in a substantially longitudinal direction from and towards the said cutting mechanism and means to superimpose upon the said conveyor a tilting movement at an angle relative to said longitudinal discharge direction.

7. In a combined apparatus for cutting stock and for the discharge thereof a conveyor to transport the stock and to discharge the cut off sections, means to clamp the stock during the cutting operation, a pressure medium to actuate the clamp, a cutting mechanism including a cutter, resilient means to raise the conveyor for the transport of the stock above the clamping level, means connected with the clamp actuating pressure medium to lower the conveyor to the clamping level for the clamping and cutting action, means to displace the discharge conveyor in a substantially longitudinal direction from and towards the said cutting mechanism and means to superimpose upon the said conveyor a tilting movement at an angle relative to said longitudinal discharge direction.

8. In a combined apparatus for cutting stock and for the discharge thereof a conveyor to transport the stock and to discharge the cut off sections, means to clamp the stock during the cutting operation, a cutting mechanism including a cutter, means to raise the conveyor for the transport of the stock above the clamping level and to lower the same to the clamping level for the clamping and cutting action, an adjustable stop mechanism to limit the transport of the stock, means to release the stop, means operative after the release of said stop to displace the discharge conveyor in a substantially longitudinal direction from and towards the said cutting mechanism and means to superimpose upon the said conveyor a tilting movement at an angle relative to said longitudinal discharge direction.

9. In a combined apparatus for cutting stock and for the discharge thereof a conveyor to transport the stock and to discharge the cut off sections, means to clamp the stock during the cutting operation, a cutting mechanism including a cutter, means to raise the conveyor for the transport of the stock above the clamping level and to lower

the same to the clamping level for the clamping and cutting action, an adjustable stop mechanism to limit the transport of the stock, means to release the stop, means operative after the release of said stop to displace the discharge conveyor in a substantially longitudinal direction from and towards the said cutting mechanism and means to superimpose upon the said conveyor a tilting movement at an angle relative to said longitudinal discharge direction, and a single power source to effect the longitudinal displacement of the conveyor, the tilting of the same and the action of the stop.

10. In a combined apparatus for cutting stock and for discharging the cut off sections a stationary tubular supporting body extending in the longitudinal transporting direction of the stock, conveyor means above the said body to transport the stock, a frame encasing the said supporting body to carry the said conveyor means, means to displaceably suspend the said frame on the said supporting body, means to clamp the stock during the cutting operation, a mechanism to cut the clamped stock, means to raise the conveyor for the transport of the stock above the clamping level and to lower the same to the clamping level for the clamping and cutting action, an adjustable stop means to limit the transport of the stock, means to release the stop, means operative upon the release of the stop to displace the discharge conveyor in a substantially longitudinal direction from and towards the said cutting mechanism and to superimpose upon the conveyor a tiltable movement at an angle relative to said longitudinal discharge direction said means including a guide pin connected to the said frame, a slot in the wall of the said supporting body to receive the said pin and to thereby guide the said frame during its displacement, the said slot being linear in its front portion and curved in its rear portion, and a single power source to effect the longitudinal displacement of the said conveyor, the tilting of the same and the actuation of the stop mechanism.

11. In a combined apparatus according to claim 8 a clamping support for the stock and a plurality of rollers forming the conveyor, the said support and the said conveyor rollers having the same cross-sectional configuration.

12. An apparatus for discharging stock from a working machine comprising a stationary support, a plurality of conveyor rollers above the said support to transport the stock from the said machine, a frame encasing the said support to carry the said conveyor rollers, means carried by the said frame to displaceably suspend the same from the said tubular support, recesses in the said support to locate the said rollers on top of the said support out of contact with the latter, and means to displace the said frame from and towards the said machine in a longitudinal direction, and means to tilt the same simultaneously with its longitudinal displacement at an angle relative to the direction of its longitudinal displacement for the discharge of the stock.

13. An apparatus for the discharge of stock from a working machine, comprising freely roll-off means to transport the stock, means to displace the said transporting means in a direction from and towards said working machine, a stationary support for the said transporting means extending in the stock transporting direction, means to tiltably mount the said transporting means upon said transport, a slot in the said stationary support, said slot being straight in its

front portion and curved in its rear portion, a pin attached to the said transporting means adapted to be guided in said slot during the displacement of said transporting means to superimpose upon the said transporting means during their displacement from the working machine a tilting movement into the discharging position and during their displacement towards the working machine a tilting movement into the initial position.

14. An apparatus for the discharge of stock from a working machine, comprising freely roll-off means to transport the stock, a hydraulically driven power source to displace the said transporting means in a direction from and towards said working machine, a stationary support for

the said transporting means extending in the stock transporting direction, means to tiltably mount the said transporting means upon said support, a slot in the said stationary support, said slot being straight in its front portion and curved in its rear portion, a pin associated with the said transporting means adapted to be guided in said slot during the displacement of said transporting means to superimpose upon the said transporting means during their displacement from the working machine a tilting movement into the discharging position and during their displacement towards the working machine a tilting movement into the initial position.

MAX MEYERBACH.