Dec. 19, 1933. W. E. KERR 1,940,354

BAR UNLOADING SKID

Filed Sept. 10, 1931 3 Sheets-Sheet 1

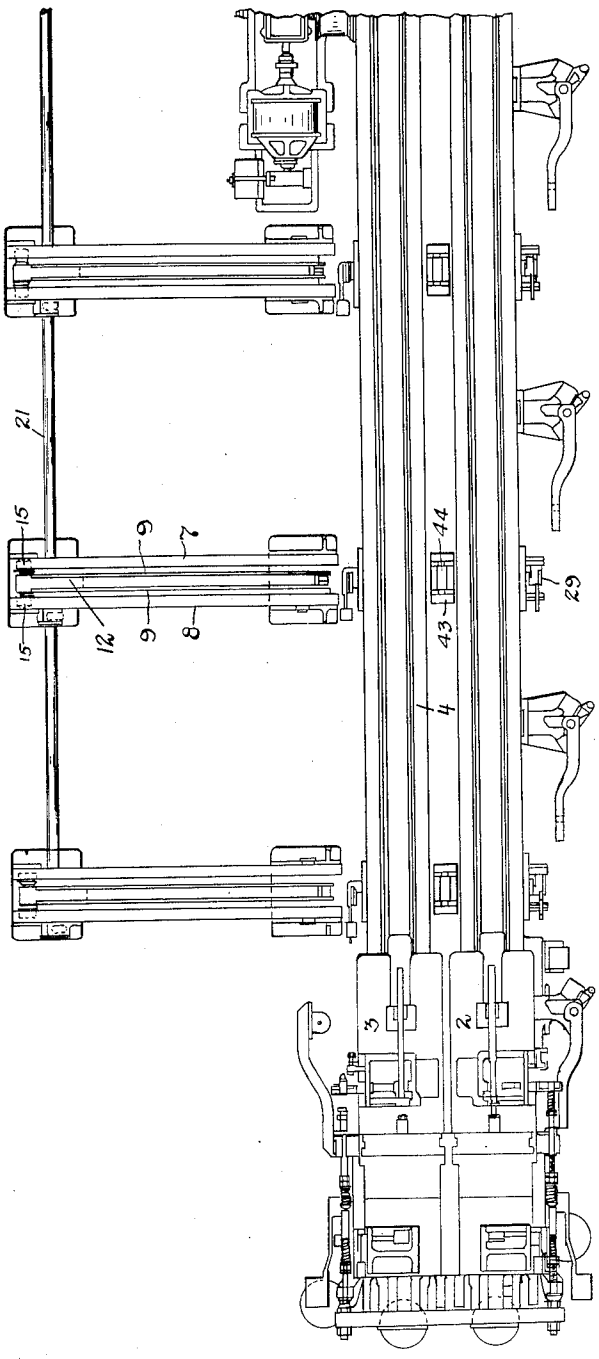


Fig. 1

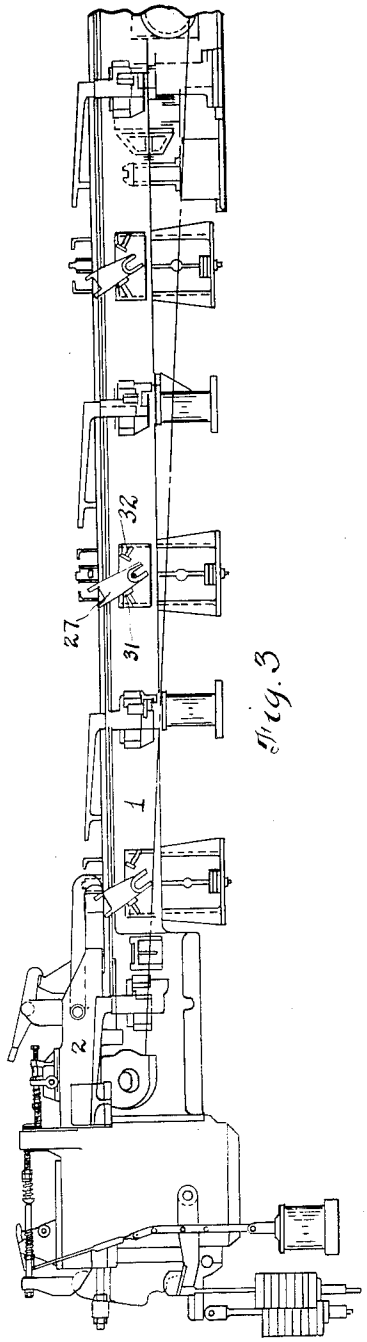


Fig. 3

INVENTOR.
Wallace E. Kerr

BY
Day, Oberlin & Day
ATTORNEYS.

Dec. 19, 1933. W. E. KERR 1,940,354

BAR UNLOADING SKID

Filed Sept. 10, 1931 3 Sheets-Sheet 2

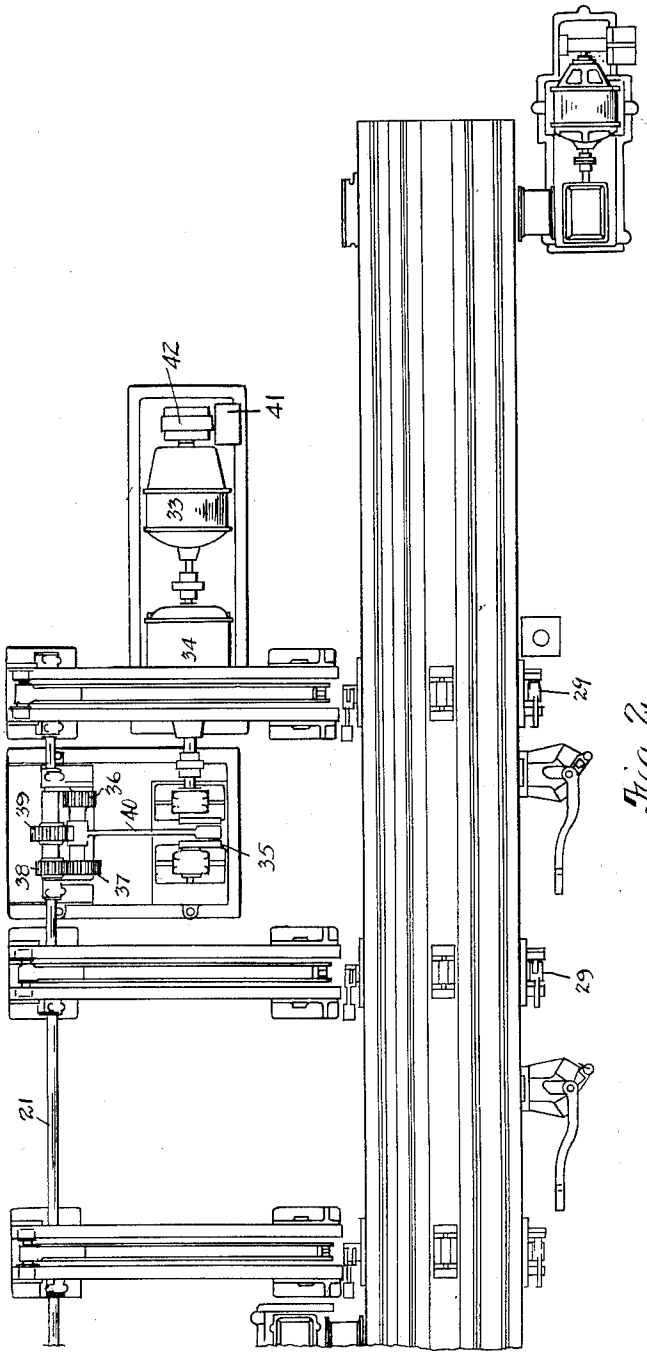


Fig. 2.

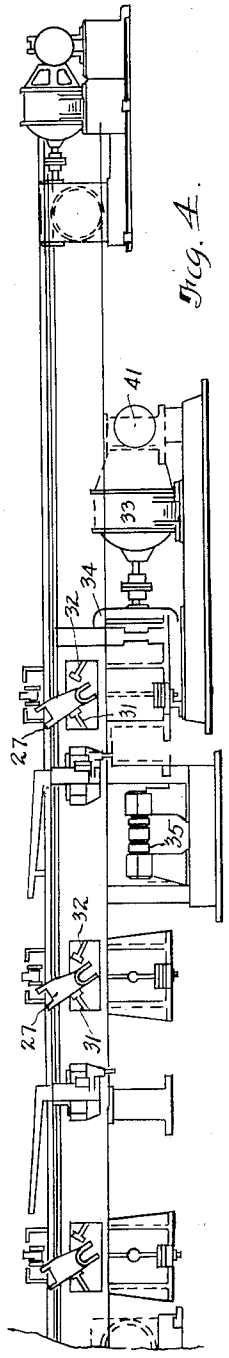


Fig. 4.

INVENTOR
Wallace E. Kerr
BY Fay, Oberlin & Fay, ATTORNEYS

Dec. 19, 1933. W. E. KERR 1,940,354

BAR UNLOADING SKID

Filed Sept. 10, 1931 3 Sheets-Sheet 3

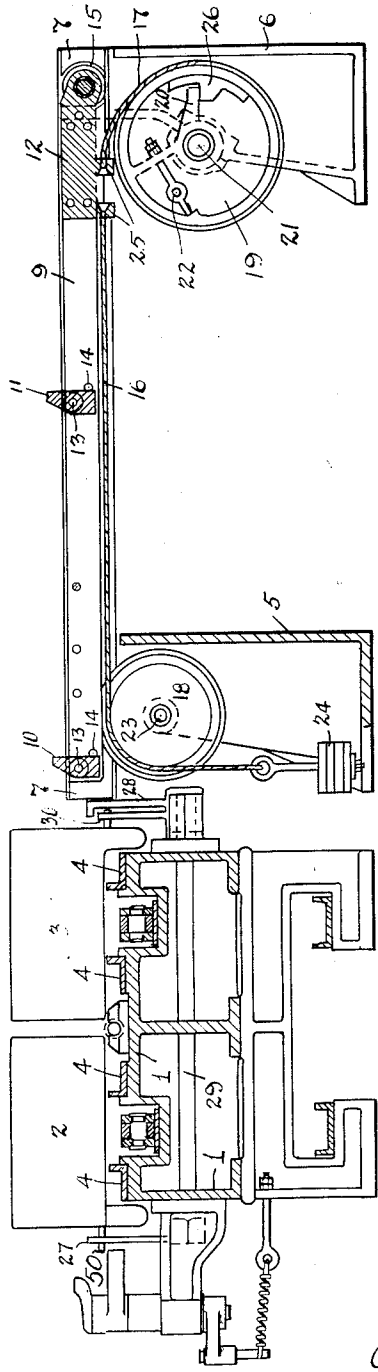


Fig. 5

INVENTOR.
Wallace E. Kerr
BY
Fay, Oberlin & Fay
ATTORNEYS.

Patented Dec. 19, 1933

1,940,354

UNITED STATES PATENT OFFICE

1,940,354

BAR UNLOADING SKID

Wallace E. Kerr, Youngstown, Ohio, assignor to The Aetna Standard Engineering Company, Youngstown, Ohio, a corporation of Ohio

Application September 10, 1931
Serial No. 562,131

2 Claims. (Cl. 205—1)

My invention relates to mechanical skids for removing bars or similar material from a drawing bench as work thereon is finished. This I accomplish with a plurality of members which pass under the bars as drawn, receive them as finished and are then withdrawn carrying the bars with them. The operation of a drawbench is such that these members must be clear of the bench until after the drawing carriage has passed. Also provision must be made to handle any length material without needless moving of the drawing carriage. These requirements are met in the machine I have invented, the construction and operation of which will be clear from the following description and drawings attached hereto.

In the annexed drawings:—

Figs. 1 and 2 show a plan view of a drawbench equipped with my invention; Figs. 3 and 4 show a view of same in elevation; and Fig. 5 is a cross-sectional view of same through one of the skid members.

Referring to the drawings, carriages 2 and 3 for drawing the bars are movable over the bed 1 of a double chain drawbench. Spaced at intervals alongside the drawbench are a number of bar unloading skids operated by the common shaft 21. The construction of each skid unit is shown in Figs. 1 and 5, wherein stands 5 and 6 support channels 7 and 8, between which is a movable unit consisting of bars 9 held together by means of bolts and separators and carrying dogs 10 and 11 and a casting 12. The dogs are mounted on pins 13 and are free to rotate in a clockwise direction from their vertical positions shown, but are kept from rotating in the opposite direction by means of stops 14. Mounted at the end of casting 12 are wheels 15 which run on the inner flanges of channels 7 and 8. The other end of bars 9 is supported by the idler sheave 18 which is carried by the stand 5 rotatably mounted on the pin 23. On the under side of casting 12 are downwardly projecting lugs 25, to which are secured cables 16 and 17. Cable 16 passes over idler sheave 18 and has a counterweight 24 secured to its end. Cable 17 is wrapped around sheave 19 and has its end secured thereto by means of eyebolt 22. Sheave 19 is rotatably mounted on shaft 21 which is rotatably mounted in bearings carried by stands 6. Fixedly attached to shaft 21 an arm 20 is so located that its outer end will engage a lug 26 projecting from the side of the sheave 19.

Shaft 21, upon which are mounted the sheaves 19 of all the skid members, is actuated through an arc sufficient to cause the arm 20 to engage the lug 26 and rotate the sheave 19 enough to impart through cable 17 the desired movement to the movable unit composed of bars 9 and their appurtenances.

This rocking or oscillating movement of shaft 21 through a predetermined arc is secured by means of a motor 33, speed reducer 34, crankshaft 35, connecting rod 40 and gear segments 36 or 37, which mesh with sliding gears 38 and 39. Sliding gears 38 and 39 are mounted on shaft 21, and are keyed thereto by means of a feather-key, which permits their movement sideways to allow either to engage with its mating gear segment 36 or 37. A limit switch 41 and magnetic brake 42 are provided to stop motor 33 after it has caused crankshaft 35 to make one complete revolution.

Mounted transversely in the draw-bed, in line with the movable members composed of bars 9 and their appurtenances, are shafts 29, on the ends of which are keyed latches 27 and 30. Latch 27 is so mounted as to be engaged by a projection on the drawing carriage 2 in its movement over the draw bed. Latch 28, which moves freely on shaft 29, is so located that when held in position by a counterweight, it intercepts the ends of bars 9 and holds them inoperative. Fixed on shaft 29, between the bed and latch 28 is a latch 30. Stops 31 and 32 allow latch 27 and its associated latch 30, to move through a predetermined arc. Similar stops are provided for latch 28.

Operation of the apparatus will be understood by noting that Fig. 5 shows the position of parts when the crankshaft 35 has completed half of a revolution. The movable member composed of the bars 9 has been drawn back against the force of the counterweight 24 by the arm 20 moving against the lug 26 and rotating the sheave 19 through an arc. A counterweight has caused latch 28 to take a position across the end of said movable member holding it in the position indicated. As the crankshaft 35 completes its revolution, the shaft 21 is oscillated backward, moving the arm 20 anticlockwise to a position determined by the gears 38 or 39. If gear 38 is in mesh with gear segment 37, the arm 20 is moved to a position such that it intercepts lug 26 when the movable member has moved far enough across the draw bed to remove bars from both carriages 2 and 3. When gear 39 is in mesh with gear segment 36, the arm 20 is moved to a position

such that it intercepts lug 26 when the movable member has moved far enough across the drawbed to remove bars from carriage 3 only.

The single revolution of the crankshaft 35 having been completed, the limit switch and magnetic brake stop the motor. The carriages 2 and 3 are returned to the operative end of the draw-bed and in passing, carriage 2 sets latch 30 in position to lock the movable member composed of bars 9, latch 28 having been already set in this locking position by its counterweight. As the carriages draw new bars they release latches 27, 28 and 30 on each skid unit. Carriage 2 releases latches 27 and associated latches 30, and carriage 3 releases latches 28. It will be observed that the order of release is not material as the said movable member cannot cross the draw bed until all latches associated therewith have been released. As the movable member is drawn across the draw bed by the counterweight 24 it is supported by roller 44 which is rotatably mounted in support 43. As the movable member of each skid unit is released by the passing carriages 2 and 3, they move across the draw bed under the bars being drawn. The dog 10, being pivoted, passes under the bars being drawn and the dog 11, being likewise pivoted, passes under bars already drawn and resting on channels 7 and 8. The drawing operation completed and the bars released, the motor 33 is started, the crankshaft 35 makes a revolution and the oscillation of shaft 21 causes arm 20 to rotate the sheave 19 sufficiently to draw the moving member back into locked position for a repetition of the operation. It will be noted that movable members of skid units which are not released, i. e., those which the drawing carriage do not pass, remain inoperative.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

1. In a mechanism as described for removing work from a draw-bench, a member movable transversely of said drawbench, means to lock said member in a non-operative position, means adapted to release said last-named means responsive to movement of the drawing carriage in said drawbench, means to return said member to a non-operative position comprising a rock shaft and a sheave wheel rotatably mounted thereon, a flexible element connecting said member to said sheave wheel, an axial projection on one side of said sheave wheel, an arm fixedly positioned on said shaft and adapted to engage said projection when the shaft is rocked, and means to rock said shaft, said last-named means comprising a power means with a limit switch, a crankshaft, a connecting rod, gear segments driven by said rod, and gears non-rotatably but slidably mounted on the shaft to be rocked in such a position that they may selectively engage mating gear segments.

2. In a mechanism as described, a material removing member adapted to pass beneath bars being drawn by a carriage on a drawbench, a latch adapted to hold said member in a locked inoperative position, means whereby said latch is released by the carriage when the drawing is ended, means to move said member under material on said drawbench, means carried by said member adapted to engage said material, and means adapted to return said member to a locked inoperative position comprising a rock shaft, a sheave wheel rotatably mounted thereupon, a flexible element connected to the said member and to said sheave wheel, an axial projection on said sheave wheel, an arm fixedly mounted on said rock shaft adapted to engage said projection, and means to rock said shaft.

WALLACE ED. KERR.