

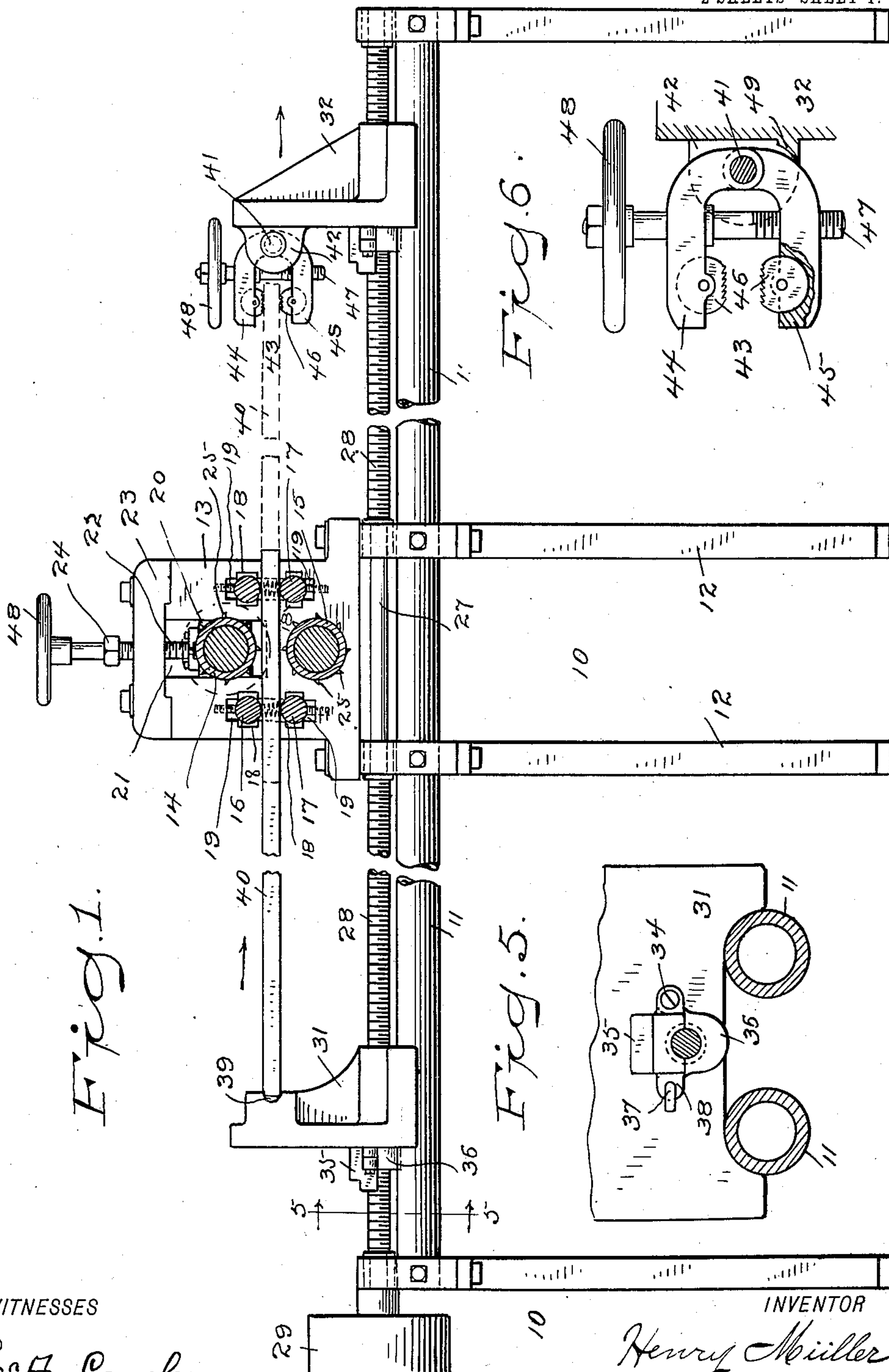
No. 860,760.

PATENTED JULY 23, 1907.

H. MÜLLER.
MACHINE FOR CLEARING METAL BARS.

APPLICATION FILED MAR. 5, 1907.

2 SHEETS—SHEET 1.



WITNESSES

H. A. Lamb.
S. W. Atherton.

INVENTOR

Henry Müller
BY
J. M. Wooster
ATTORNEY

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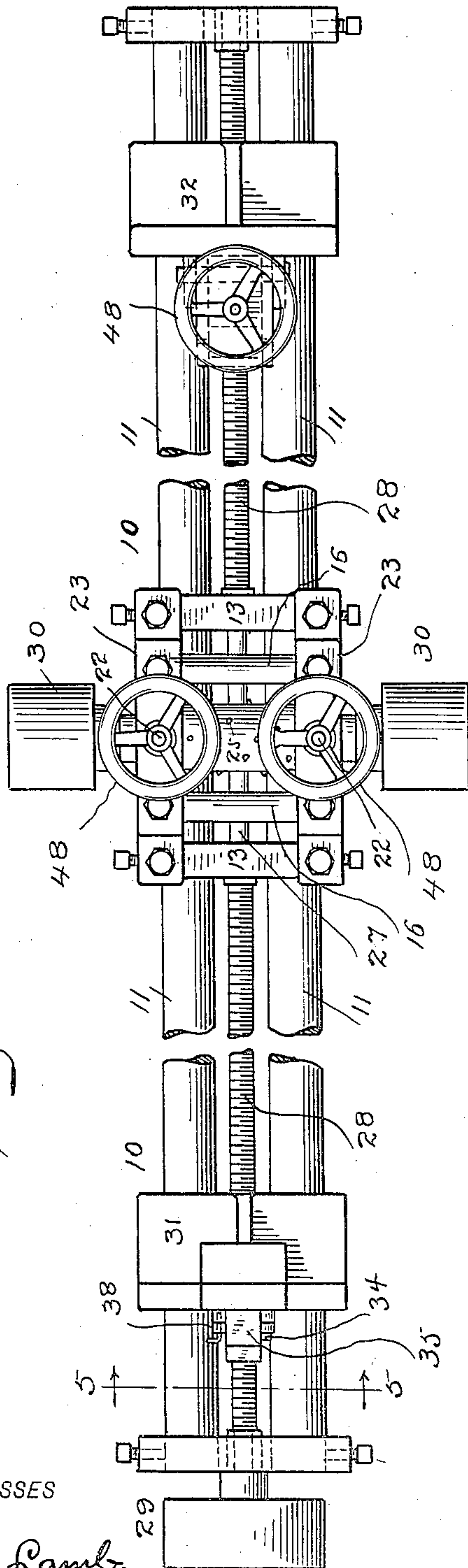
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Fig. 2.



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Fig. 3.

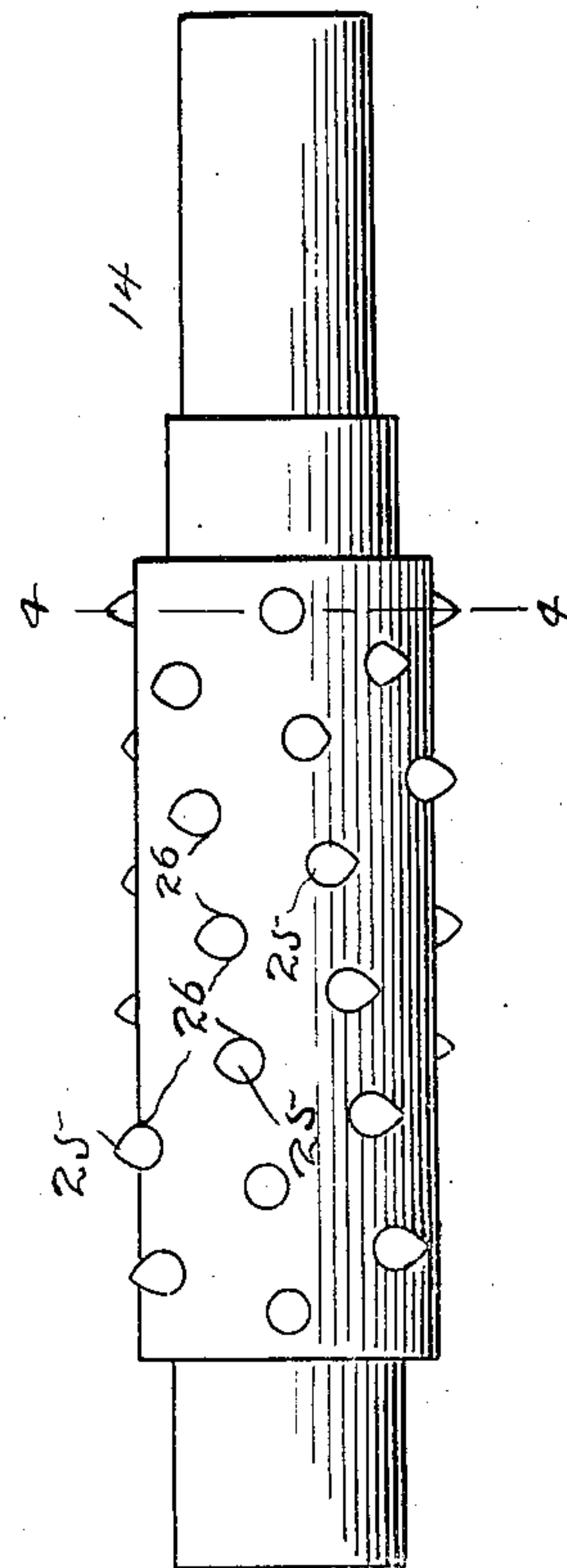
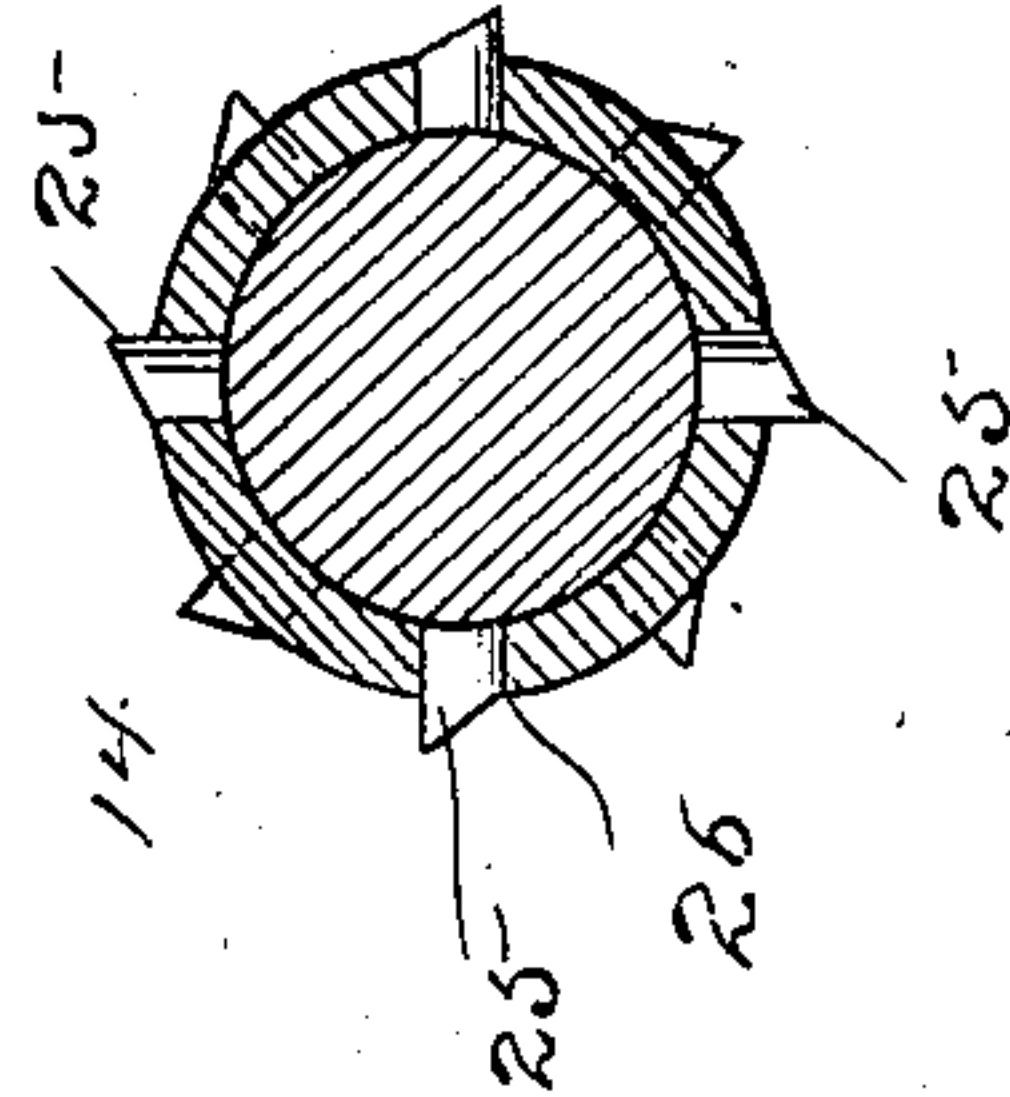


Fig. 4.



INVENTOR

Henry Müller

BY

A. M. Wooster

ATTORNEY

UNITED STATES PATENT OFFICE.

HENRY MÜLLER, OF WATERBURY, CONNECTICUT.

MACHINE FOR CLEARING METAL BARS.

No. 860,760.

Specification of Letters Patent.

Patented July 23, 1907.

Application filed March 5, 1907. Serial No. 360,779.

To all whom it may concern:

Be it known that I, HENRY MÜLLER, a citizen of the United States, residing at Waterbury, county of New Haven, State of Connecticut, have invented a new and useful Machine for Clearing Metal Bars, of which the following is a specification.

This invention has for its object to provide a machine for overhauling bars of metal, in which the bars to be operated upon shall be passed continuously between clearing or overhauling rollers, made adjustable to provide for bars of different thickness, which shall operate upon both sides of the bar simultaneously so that a single passage of a bar through the machine will effectually clear or overhaul both sides thereof.

The machine is adapted for use upon all kinds of bars of metal which require to have their surfaces scraped, cleared or overhauled for any purpose whatever and is especially adapted for use upon bars of metal which are to be rolled into sheets. In practice, bars of copper, brass and similar alloys that are to be rolled into sheets, are subjected to a preliminary rolling after they are taken from the molds and are then scraped, cleared or overhauled to remove from both sides thereof all scale and other impurities, leaving the surfaces of the bar clean and bright. This operation has heretofore usually been performed by hand and by machines which operated first on one side of the bar and then upon the other.

With these and other objects in view I have devised the simple and novel machine which I will now describe, referring to the accompanying drawings forming a part of this specification and using reference characters to indicate the several parts:

Figure 1 is an elevation of the machine complete, the clearing rolls and guide rolls being in section; Fig. 2 a plan view corresponding therewith; Fig. 3 a view of one of the clearing rolls detached; Fig. 4 a section of a clearing roll on the line 4—4 in Fig. 3; Fig. 5 an enlarged detail sectional view on the line 5—5 in Figs. 1 and 2; and Fig. 6 is an enlarged detail elevation of the drawing clamp detached.

10 denotes the frame as a whole, which may be of any ordinary or preferred construction. In the present instance, I have shown a frame consisting of stringers indicated by 11, which may be bars or tubes and which are supported by standards indicated by 12.

13 denotes a head at the center of the machine which is bolted or otherwise rigidly secured to central standards and which carries upper and lower clearing rolls indicated respectively by 14 and 15 and two pairs of guide rolls each pair comprising an upper roll indicated by 16 and a lower roll indicated by 17. The lower clearing roll may have a fixed bearing in the head. The guide rolls are journaled in boxes 18 which are adjustable vertically in slots 19 in the head. The upper clearing roll is journaled in boxes 20 which move verti-

cally in openings 21 in the head and are carried by adjusting screws 22 which engage cross-pieces 23 upon the head. After adjusting the upper clearing roll to operate upon a bar of metal by turning screws 22 forward or backward as required, the screws and with them boxes 20 and the upper clearing roll are locked in position by set nuts 24 on the adjusting screws which are turned down tightly upon the cross-pieces.

The clearing or overhauling of the opposite faces of a bar of metal is effected by means of cutters 25, any required number of which may be used, which are seated in sockets 26 in the clearing rolls.

27 denotes a central longitudinal shaft journaled in the standards and provided on each side of its mid length with screw threads indicated by 28. Rotation is imparted to this shaft by means of a belt (not shown) passing over a pulley 29. Motion may be imparted to the clearing rolls in any preferred manner. In the present instance, they are driven independently, one journal of each roll being provided outside of the head with a pulley 30 over which belts (not shown) pass.

31 and 32 denote travelers which rest upon the stringers of the frame and are provided with openings through which the threaded portions of the shaft pass freely. Each carrier has hinged thereto, as at 34, upper and lower half nuts indicated respectively by 35 and 36, each of which is provided with a female thread adapted to engage the thread of the screw. Each half nut is provided with an ear 38, and the half nuts of each pair are locked together, with the female threads in engagement with the thread of the screw, by means of a pin 37 passing through the ears on the respective half nuts. When either traveler is not in use, the pin is withdrawn, which permits the lower half nut to drop down out of engagement with the screw and the upper half nut is turned over backward out of engagement therewith. The traveler may then be moved in either direction on the stringers to place it in any required position. When the female threads of the half nuts are in engagement with the screw, the traveler will be carried forward thereby. Traveler 31 is provided with socket 39 to receive the end of a bar of metal, indicated by 40, as clearly shown in Fig. 1 and as will be more fully explained. The travelers face the opposite sides of the head, traveler 31 acting to push a bar of metal through the clearing rolls and traveler 32 acting to draw it through. Traveler 32 is provided with a drawing clamp 43 comprising arms 44 and 45 pivoted as at 41 to ears 42 each of said arms being provided with a pivoted gripping dog 46. The arms of the clamp are adjusted and locked in the gripping position by means of an operating screw 47, which passes freely through one of the arms and engages the other arm as clearly shown. By pivoting the gripping dogs in the arms of the clamp, they are made self-adjusting into parallel-

ism with bars of different thickness without regard to the position of the arms relatively to each other. And this feature, in connection with the pivotal mounting of the arms which carry said pivoted gripping dogs, enables the clamp as a whole to allow for some irregularities in the bar 40.

49 denotes a lug between ears 42, which is adapted to be engaged by arm 45 of the clamp to prevent the clamp from swinging downward too far. This lug may or may not be provided as preferred.

Screws 22 and 47 are shown as provided with hand wheels 48 for convenience in operation.

The operation will be readily understood from the drawings. In starting, the operator disengages the half nuts of traveler 31 from the screw thread on the shaft and moves said traveler toward the left as seen in the drawings. One end of the bar of metal to be operated upon is passed through the first pair of guide rolls, the left pair as seen in the drawings, and placed in proximity to the clearing rolls, the other end of the bar being placed in engagement with socket 39, as clearly shown. The half nuts are then placed in engagement with the thread of the shaft as shown and locked there by means of the pin. The engagement of the female threads of the half nuts with the thread on the shaft causes traveler 31 to be fed forward and act as a pusher to force the bar of metal between the clearing rolls which operate upon both sides thereof and, as it is variously termed, clear, scrape, scratch or overhaul the surface on both sides: After a portion of the bar has been passed through the clearing rolls, the movement of traveler 31 is stopped by disengaging the half nuts thereon from the thread on the shaft, traveler 32 is moved up to the bar the end of which is passed between the arms of the clamp and the gripping dogs, after which the gripping dogs are tightened upon the bar to grip it firmly by means of screw 47. The half nuts upon traveler 32 are then placed in operative position, the female threads therein being in engagement with the thread upon the shaft and are locked there by means of pin 37. The travelers may both be used together, or, if preferred, traveler 31 may be left disengaged from the shaft when the clamp of traveler 32 is placed in engagement with the bar and the traveler actuated to pull or draw the bar forward, it being obvious that the last portion of the feeding of the bar must be performed by traveler 32 which pulls or draws it through the clearing rolls. Having completed the drawing of the bar through the clearing rolls, the half nuts upon traveler 32 are disengaged from the thread upon the shaft, the traveler is moved backward out of the way and the cleared or overhauled bar is removed from the machine. The operation is then repeated as before upon another bar, the commencement of the feeding operation being performed by traveler 31 which forces the bar forward through the clearing rolls.

Having thus described my invention, I claim:

1. A machine of the character described comprising clearing rolls provided with cutters and means for feeding a bar of metal through said rolls to clear the opposite sides of the bar simultaneously, said means comprising a pusher and a puller for the bar and mechanism for operating the pusher and puller singly or together. 60
2. A machine of the character described comprising clearing rolls provided with cutters, guide rolls on opposite sides of the clearing rolls and means for feeding a bar of metal through the rolls, said means comprising a pusher and a puller for the bar and mechanism for operating the pusher and puller singly or together. 65
3. A machine of the character described comprising clearing rolls provided with cutters, means for adjusting one of said rolls toward and from the other, pairs of adjustable guide rolls on opposite sides of the feeding rolls, and means for feeding a bar of metal through the rolls, said means comprising a pusher and a puller for the bar and mechanism for operating the pusher and puller singly or together. 70
4. A machine of the character described comprising a frame, a head, clearing rolls journaled in the head, a shaft having a screw thread, a traveler resting on the frame and half nuts hinged to the traveler and adapted to engage the thread on the shaft, substantially as described, for the purpose specified. 75
5. A machine of the character described comprising a frame, a head, clearing rolls journaled in the head, a shaft having a screw thread, travelers resting on the frame and facing the opposite sides of the head, and half nuts hinged to the travelers and adapted to engage the thread on the shaft, whereby the travelers are fed forward, one toward the head, the other away from it. 80
6. In a machine of the character described the combination with clearing rolls adapted to act on opposite sides of a bar, of a shaft having a screw thread, and a traveler 31 having half nuts engaging said thread whereby a bar is forced forward through the clearing rolls. 85
7. In a machine of the character described the combination with clearing rolls adapted to act on opposite sides of a bar, of a shaft having a screw thread and a traveler 32 having half nuts engaging said thread and a clamp for engaging a bar whereby said bar is drawn through the clearing rolls. 90
8. In a machine of the character described the combination with clearing rolls adapted to act on opposite sides of a bar, of a shaft having screw threads, and travelers on opposite sides of the head, each provided with half nuts adapted to engage one of the threads, one of said travelers acting to force a bar through the clearing rolls and the other traveler being provided with a clamp adapted to engage the bar to draw it through the clearing rolls. 95
9. In a machine of the character described the combination with clearing rolls adapted to act on opposite sides of a bar, means for adjusting one of said rolls and guide rolls on opposite sides of the clearing rolls, of a shaft having screw threads, travelers on opposite sides of the rolls, half nuts on the travelers adapted to engage the threads whereby one traveler is moved toward and the other away from the rolls, one of said travelers being provided with a drawing clamp, substantially as described, for the purpose specified. 100

In testimony whereof I affix my signature, in presence of two witnesses. 120

HENRY MÜLLER.

Witnesses:

JOHN S. NEAGLE,
LOUIS C. ARCHAMBAULT.