

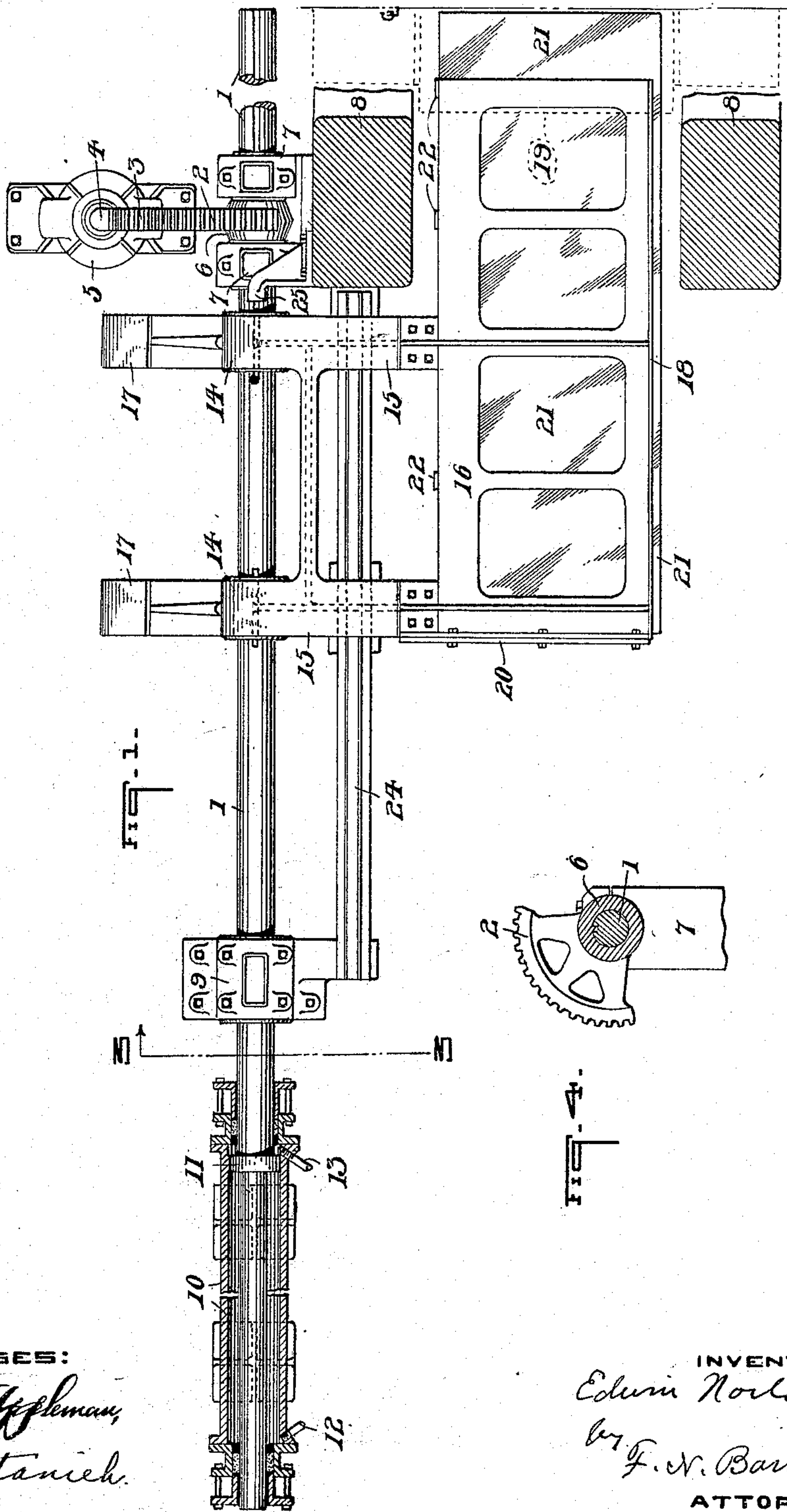
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CHARGING MACHINE.

APPLICATION FILED NOV. 18, 1907.

905,214.

Patented Dec. 1, 1908.

2 SHEETS—SHEET 1.



WITNESSES:

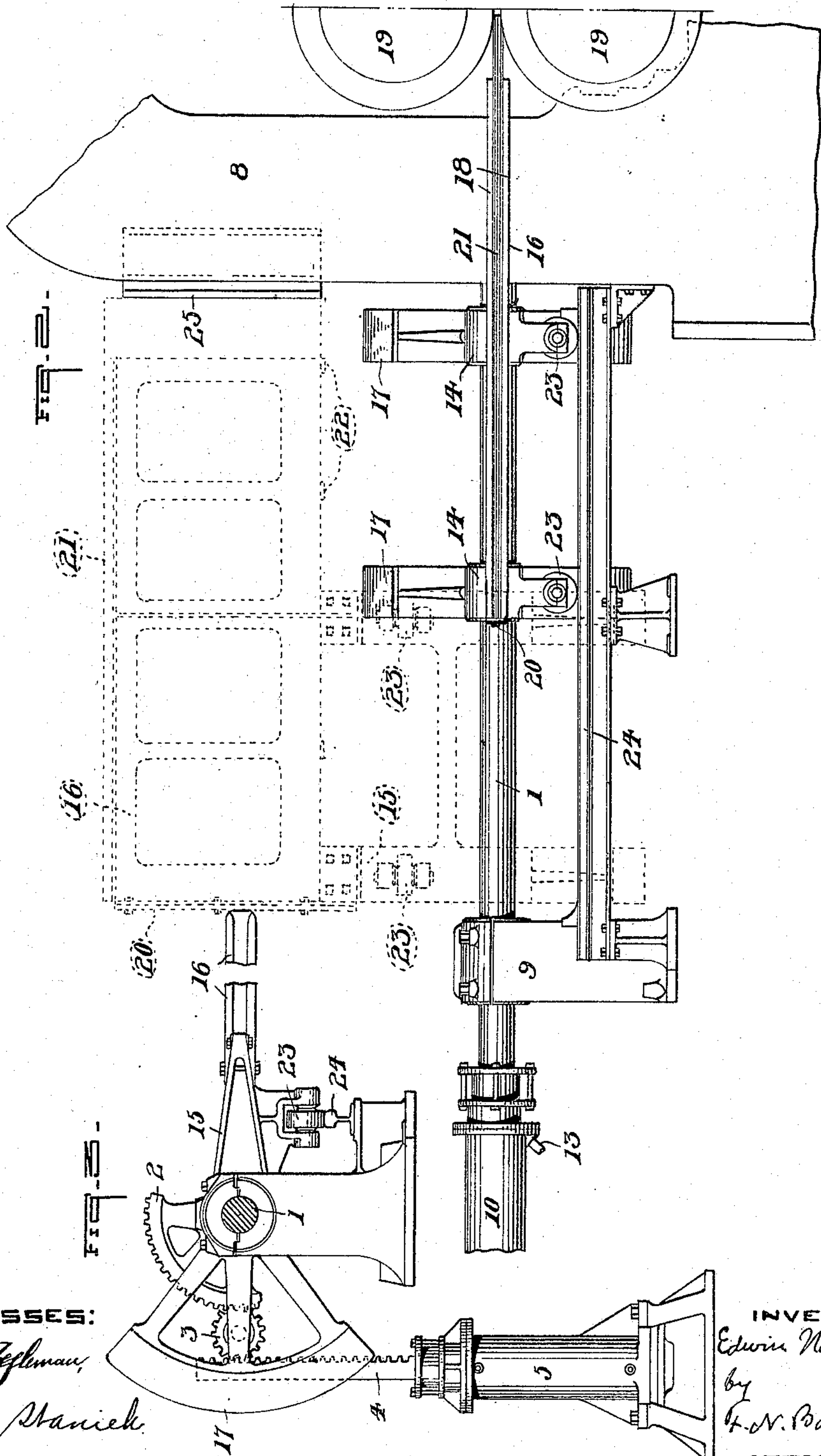
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INVENTOR  
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WITNESSES:

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# UNITED STATES PATENT OFFICE.

EDWIN NORTON, OF NEW YORK, N. Y.

## CHARGING-MACHINE.

No. 905,214.

Specification of Letters Patent.

Patented Dec. 1, 1908.

Application filed November 18, 1907. Serial No. 402,590.

*To all whom it may concern:*

Be it known that I, EDWIN NORTON, a citizen of the United States, residing at New York, in the county and State of New York, have invented or discovered new and useful Improvements in Charging-Machines, of which the following is a specification.

My invention relates to machines for receiving heated packs of sheet-metal from heating furnaces, and charging them in the pass of a suitable stand of rolls.

My invention contains means for receiving the packs on edge from an overhead crane or the like, for squaring the ends of the packs, for rotating the packs to a horizontal position, and for moving them endwise into the roll pass, but it is to be understood that variations may be made in the structure of the invention whereby a part only of these functions will be performed and whereby the functions may be secured.

Referring to the drawings, Figure 1 is a plan view of my invention, parts being shown in horizontal section; Fig. 2, a side elevation thereof; Fig. 3, a section on the line 3—3; of Fig. 1; Fig. 4, a section showing the connection between the shaft 1 and its rotating means.

On the drawings, 1 represents a horizontal shaft, having thereon the toothed segment 2 gearing with the pinion 3. The latter is driven by the vertical rack 4, actuated by the hydraulic or other type of cylinder 5.

The shaft 1 may slide horizontally in the hub 6 of the segment 2 and is caused to rotate with the segment by means of the groove and spline connection shown in Fig. 4. The housings for the hub 6 are secured to the outer side of one of the roll-housings 8.

The shaft 1 has one end in the bearing 9, the other end having its bearing in the hub 6, as explained. This shaft extends through the stationary hydraulic or other fluid operated cylinder 10 and is provided with the piston 11 working in the cylinder. 12 and 13 represent water or fluid connections to the cylinder.

Between the housings 7 and 9 the shaft 1 has keyed thereto the hubs 14, from which extend on one side the arms 15 supporting at their outer ends the pack holder 16, and on the opposite side the counter-weights 17. The pack holder consists of a pair of parallel spaced sides 18 between which the packs of plates are deposited and held. The end of the holder opposite the rolls 19 is closed by

the plate 20. The pack 21 of plates in the holder rest with their edges on the arms 15 and the strips 22, which bridge the space between the sides 18. The holder 16 extends at the end next the rolls considerably beyond the adjacent hub 14 so that the extension of the holder may pass between the roll housings 8 and feed the packs into the pass of the rolls 19.

The arms 15 carry the rolls or wheels 23 which engage on the track 24 when the holder 16 is in a horizontal, or charging, position, whereby torsion on the shaft 1 is eliminated.

The operation of the apparatus described is as follows: A pack 21 of plates having been heated in a suitable furnace, for example, such a furnace as is shown in my application, Serial Number 359,589, where the packs are heated on edge, it is preferably removed by means of an overhead crane and dropped edgewise into the holder 16, which has previously been drawn to its rear position and rotated to a vertical position, as shown in dotted lines in Fig. 2. When in the receiving position, the holder 16 is slightly to the rear of the position shown in said dotted lines. As soon as the pack has been deposited in the holder, the shaft 1 is moved horizontally so as to cause the forward edge of the pack to engage the vertical abutment 25 secured to the side of one of the roll-housings 8. By this action the sheets constituting the pack 21 are squared, or caused to have their forward ends even preparatory to being fed into the roll pass. After the pack has been squared the shaft 1 is rotated by the rack 4 and the connected mechanism to the horizontal position, shown in full lines, with the wheels 23 resting on the rail 24. The shaft 1 is then moved forward, whereby the forward end of the pack holder passes between the roll-housings and the forward end of the pack is forced into the pass of the rolls 19. As soon as a pack is withdrawn from the holder 16 by the rolls 19, the holder is retired and again rotated to its vertical position. The process outlined above is then repeated.

It is thus seen that I have provided an efficient apparatus by which the packs heated on edge, or in a vertical position may be received without rotating them from the vertical position they occupied in the furnace; that the packs may be perfectly squared and maintained in their squared position; that



the packs may after squaring be brought into the plane of the roll pass and fed there-into positively with all the sheets of the pack entering the pass simultaneously. It will  
 5 also be seen that to handle heated packs of plates, eight in a pack (four only being shown to prevent confusion of lines), each  $\frac{1}{10}$  of an inch thick, 8 feet long, and from 28 to 30 inches wide, to square the sheets in the  
 10 packs, and to feed them properly to the rolls requires some more positive means than the ordinary feed-rolls.

It will be readily seen that the holder 16 could be rotated 180° from the position  
 15 shown on Fig. 3 to receive the packs of sheets, the pack being then in a horizontal position preparatory to their insertion in the holder this position of the holder being 180° from its position when feeding the  
 20 packs into the roll pass. The abutment 25 will stand preferably opposite the end of the holder no matter what its pack-receiving position may be, but the holder could bring the pack from a horizontal position and  
 25 square the sheets against the abutment situated as shown. I have not illustrated the horizontal position of the holder when in its receiving position, as it merely involves a longer continued action of the hydraulic cyl-  
 30 inder 5.

I claim—

1. In a charging machine for metal sheets, a holder arranged to receive the sheets on edge, means for squaring the ends of the  
 35 sheets while in the holder, a stand of horizontal rolls, means for rotating the holder so that the sheets therein shall become horizontal and in line with the roll pass, and

means for moving the sheets, while in the holder, into the pass of the rolls. 40

2. In a charging machine for metal sheets, a shaft, means for rotating the shaft, means for moving the shaft lengthwise in the ro-  
 tating means, a sheet holder carried by the shaft and having spaced sides with an unob- 45  
 structed outer end and edge.

3. In a charging machine for metal sheets, a stand of rolls, a holder for the metal sheets, a stop, means for causing the holder and the  
 stop to have movement one toward the other 50  
 so that the stop and the leading ends of the sheets will contact with each other and square the sheets while in the holder, and for causing the sheets after being squared to be  
 fed into the pass of said rolls, and means for 55  
 causing relative lateral movement of the holder and the stop after the sheets have been squared and previous to the passing of the sheets through the rolls.

4. In a charging machine for metal sheets, 60  
 a stand of rolls, a fixed stop out of line with the roll pass, a holder for the metal sheets, means for rotating the holder from a posi-  
 tion in line with the stop into a position in line with the roll pass, and means for mov- 65  
 ing the holder with the metal sheets therein so as to cause the latter to engage the stop, and after rotation of the holder, so as to cause the metal sheets to be fed into the said  
 roll pass. 70

Signed at New York, this 9th day of Nov. 1907.

EDWIN NORTON.

Witnesses:

FREDK. V. HAAS,  
 THEODORE C. CORWIN.