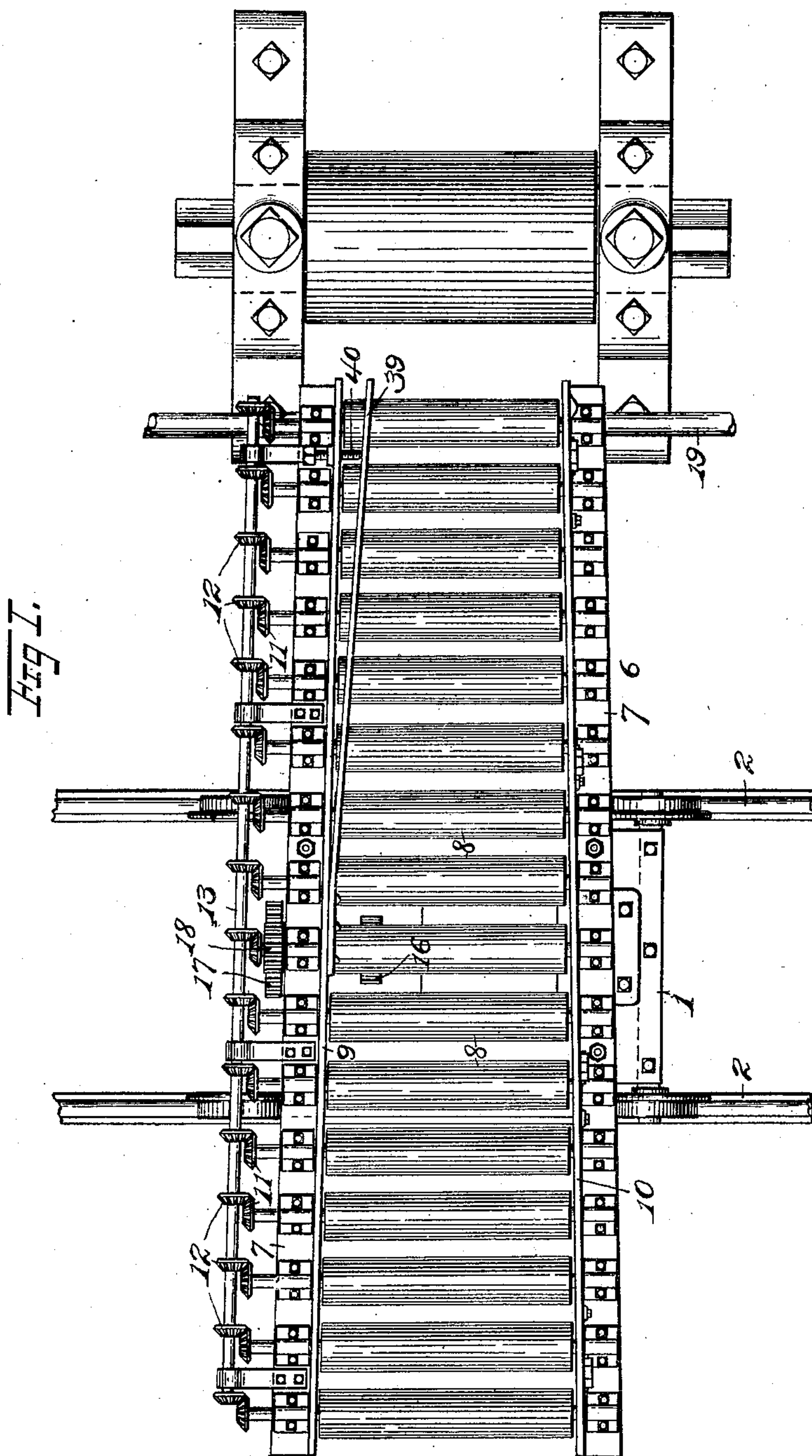


916,853.

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APPLICATION FILED OCT. 9, 1907.

Patented Mar. 30, 1909.

4 SHEETS—SHEET 1.



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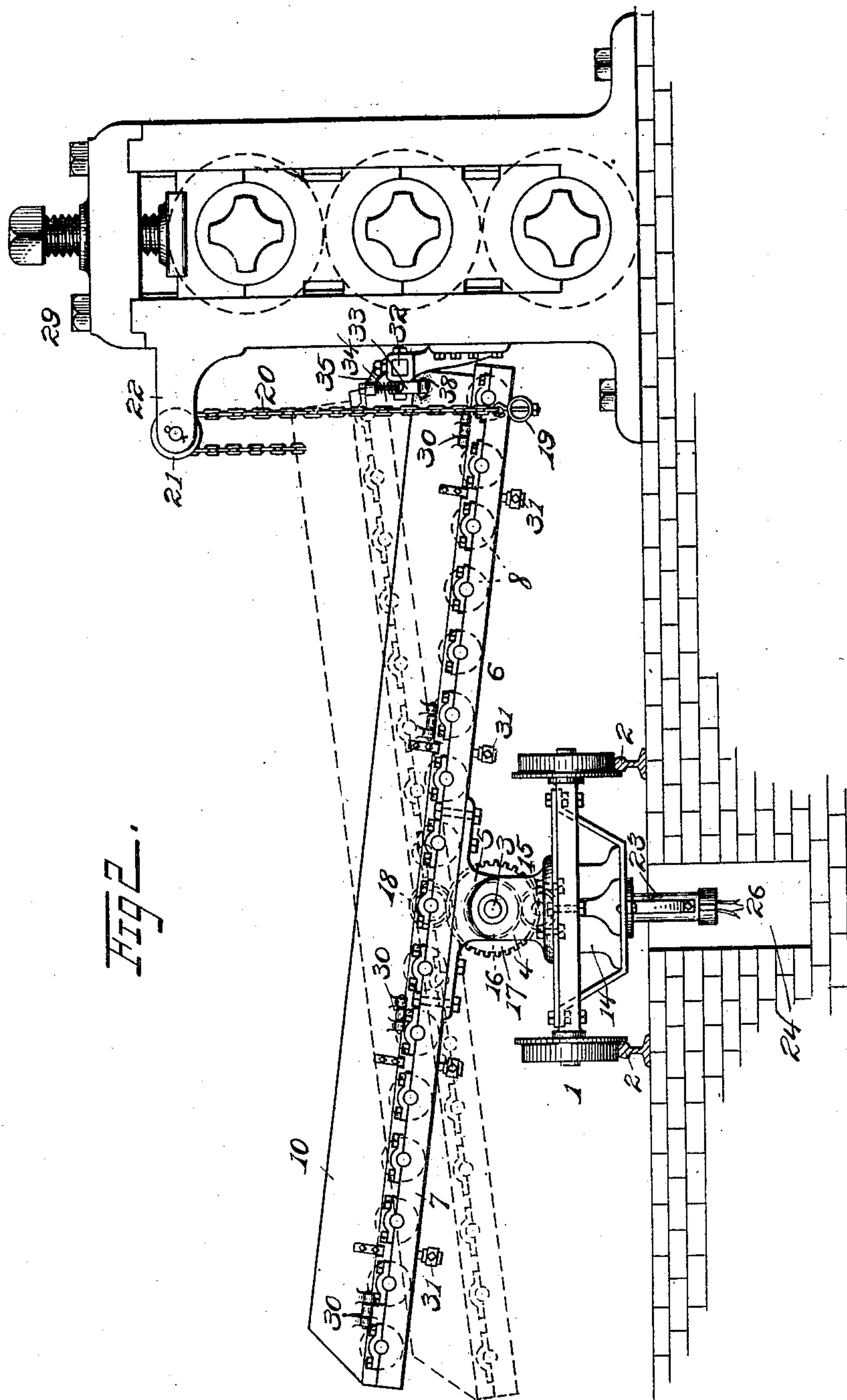


Fig. 2.

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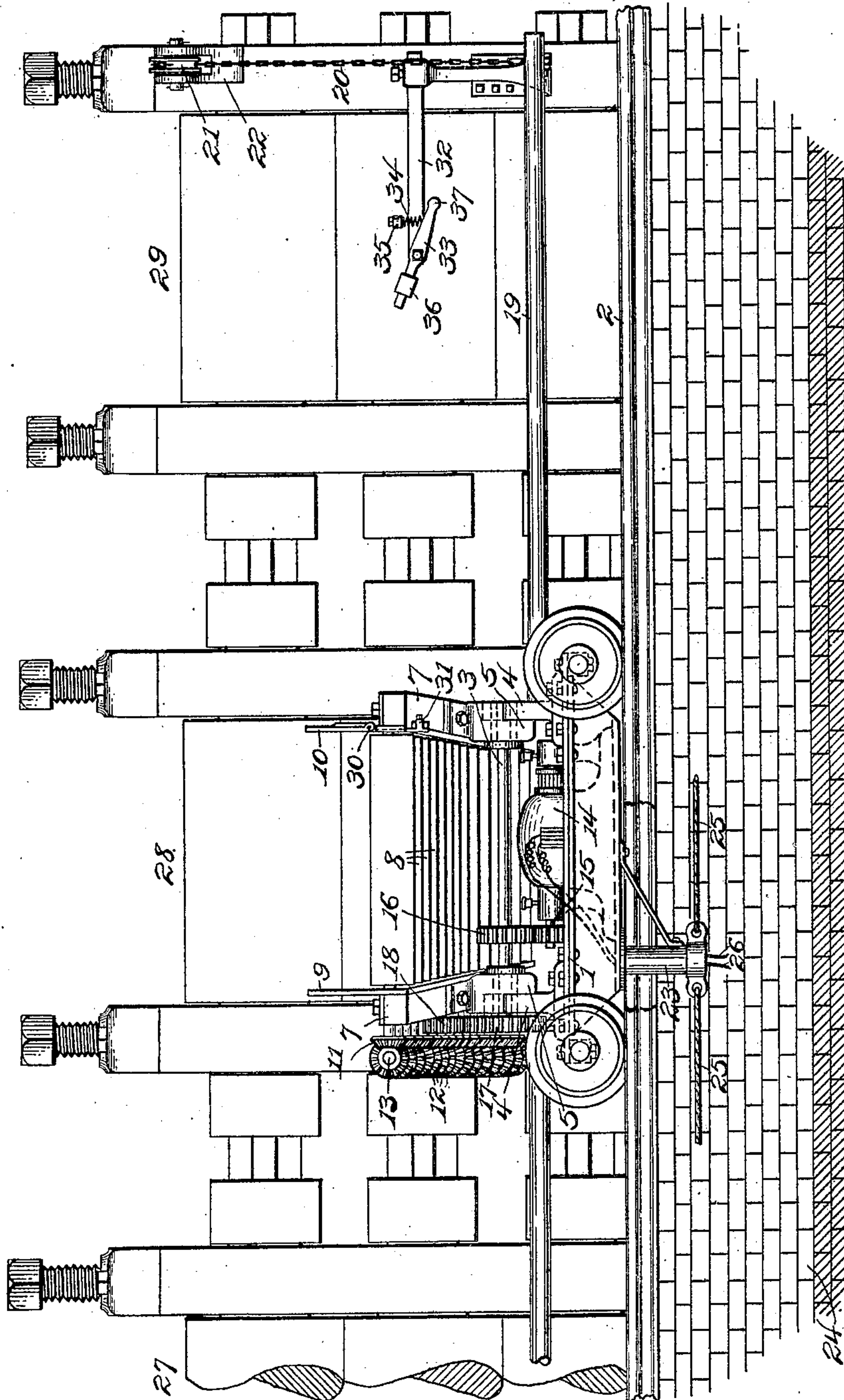
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4 SHEETS—SHEET 3.

Fig 3.



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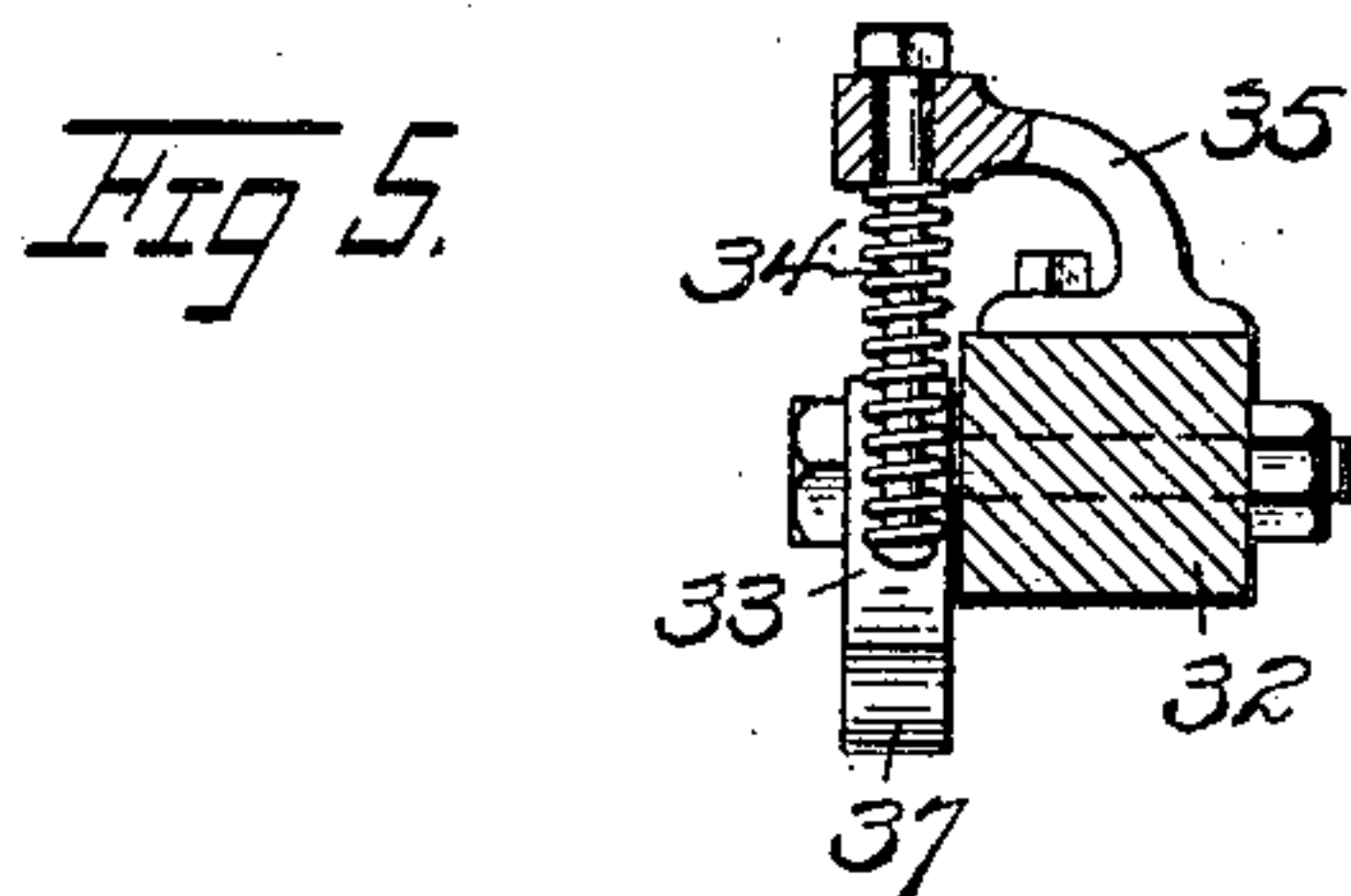
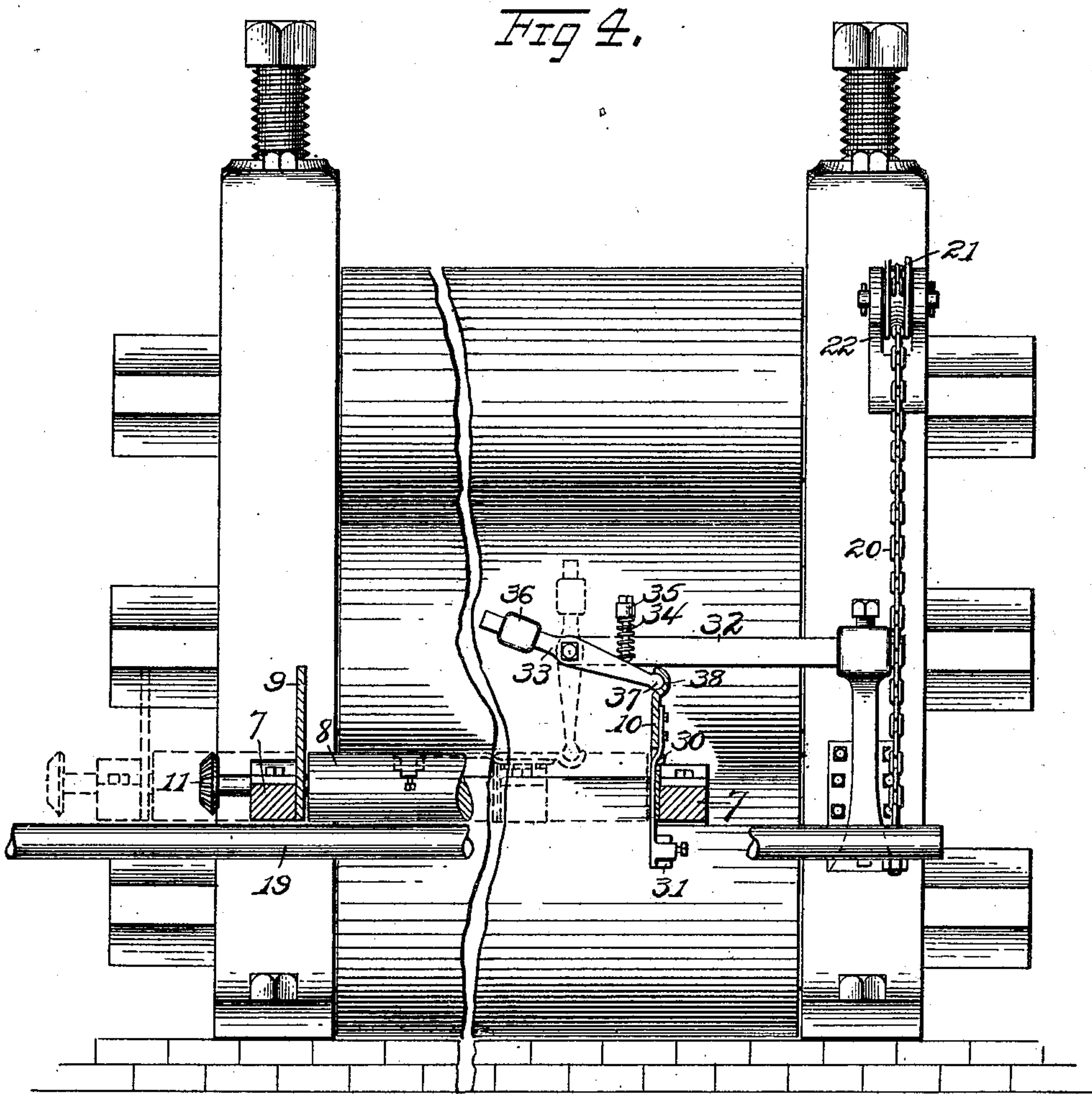
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UNITED STATES PATENT OFFICE.

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AUTOMATIC TRAVELING TILT-TABLE.

No. 916,853.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed October 9, 1907. Serial No. 396,593.

To all whom it may concern:

Be it known that I, JOHN W. FONNER, a citizen of the United States of America, and resident of Wheeling, county of Ohio, and State of West Virginia, have invented certain new and useful Improvements in Automatic Traveling Tilt-Tables, of which the following is a specification.

This invention relates to new and useful improvements in tilt-tables, and more particularly to a traveling tilt-table; and it has for its object to provide a device for rolling-mill use for automatically feeding metal plates or sheets to the rolls and for receiving said plates as they are returned through the rolls; to provide a tilting table particularly adapted for use on "three-high" rolls; and to provide a traveling device whereby the plates or sheets are carried from one set of rolls to another in a series.

With these and other objects in view, all of which will hereinafter be made apparent, the invention finally consists in the particular construction, arrangement and combination of parts which will hereinafter be fully described, reference being herein had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a top plan view of the table, showing it located in operative position in front of a set of rolls; Fig. 2 is a side elevation of the same; Fig. 3 is an end elevation of the same, showing three sets of rolls arranged in series; Fig. 4 is an enlarged front elevation of the last set of the series of rolls, showing in section the front end of the table, and illustrating the guard-tilting mechanism; and—Fig. 5 is an enlarged cross section of the bar carrying the guard-tilting mechanism.

Referring to said drawings, in which like reference characters designate like parts throughout the several views—1 indicates a truck mounted for traveling upon a suitable track or track-rails 2 arranged in front of and in parallel alinement with the rolls. A shaft 3 extending longitudinally of said truck has its ends journaled in suitable bearings 4 carried by said truck, and loosely, or pivotally, mounted upon said shaft are the supports 5 of a tilt-table 6. Said table comprises in its construction a frame 7, a plural-

ity of rollers 8 journaled in said frame, and side-guards 9 and 10. Said rollers 8 are suitably connected by bevel-gears 11 and 12 with a shaft 13 which extends longitudinally of said table. For driving said shaft 13, a motor 14 mounted upon the truck 1 beneath the table 6 has its drive-shaft 15 geared to a gear-wheel 16 fixed upon said shaft 3, and a second gear-wheel 17 carried by said shaft 3 meshes with a gear-wheel 18 carried by one of said rollers 8 at a point outside the frame 7.

Located in front of the rolls and in parallel alinement therewith is a longitudinal rod 19 adapted to serve as a support for the front end of the table 6. Said rod 19 extends the whole length of the series of rolls and is supported at each end by a chain or cable 20 which is carried over a pulley 21 mounted in an arm or extension 22 of the roll housing. The opposite end of said chain is connected to any suitable mechanical power device, such as a hydraulic piston (not shown), for raising and lowering said rod 19, and, consequently, for effecting the raising and lowering of the said front end of the table.

An appropriate tube-like cable-haul 23 depends from the under side of the truck 1 into a longitudinal pit 24 arranged between the track-rails 2 in parallel alinement therewith, cables 25 connected to said cable-haul extending therefrom in opposite directions to suitable drums (not shown) whereby said truck may be moved along said track. The feed-wires 26 leading to the motor 14 are passed upward from the pit through said cable-haul, as shown.

In operation, a metal sheet or plate placed upon the table 6 is carried forward on the forwardly-rotating rollers 8 to the upper pair of the first set 27 of the three-high rolls. When said sheet has passed from the table, the direction of travel of said rollers is reversed and the front end of the table is lowered for receiving said sheet as it is returned through the lower pair of rolls of said set. Said sheet having been rolled to the proper thickness in said first set 27, the direction of travel of the rollers and the position of the front end of the table being changed in effecting each pass, it is received

upon the table and the rollers are stopped. The truck is then moved forward along the track to a point directly in front of the second set 28 of the series of sets of rolls, where the foregoing operation of passing the sheet through the rolls is repeated, and from which the truck carrying said sheet is moved forward to the third and last set 29 of said series of rolls, which set is preferably but two rolls high. When the sheet has been delivered to said set of rolls, the truck is returned along the track to the first set 27 for receiving a new sheet and for a repetition of the foregoing operation. It is desirable, however, to start the return of said truck before the sheet has wholly passed from the table in its last pass through the set 29; and, in order to admit of this, the guard 10 is hinged to the frame 7 at or below the level of the tops of the rollers, as shown at 30, so that it may be lowered to a point where it will not engage with the sheet when the truck is moved rearwardly from beneath said sheet. Weights 31 depending from said guard 10 normally hold it in an upright position. For effecting the lowering of said guard from its said normal position, automatic means are provided, said means comprising a bar 32 adjustably supported in front of and in parallel alinement with the last set 29 of the rolls, and a lever 33 pivotally carried on the end of said bar. Said lever is pivoted intermediate its ends, as shown, and a spring-bolt 34 carried by an arm 35 mounted upon the bar 32 bears against the upper edge of the front end of said lever, while a weight 36 carried by the rear end of said lever normally holds the latter in substantially the position shown in full lines in Fig. 4. When the truck is moved from the second set 28 of rolls to the third set 29, the upper edge of the guard 10 engages the under side of the front end of said lever, elevating the latter against the tension of the spring-bolt 34. The guard 10 having passed from beneath said lever, the latter drops back to its normal position. After delivering the front end of the sheet to the set 29 of rolls, and before the sheet has wholly passed from the table, the truck is moved rearwardly with the view of withdrawing it from beneath said sheet. As the truck is so moved, the rounded end 37 of said lever engages a pocket 38 provided at a suitable point in the inner face of said guard 10, and said guard is thereby swung back on its hinges 30, while the said lever is swung downward to substantially the position indicated in dotted lines in said Fig. 4, the said guard being thus caused to assume a substantially horizontal position, allowing said truck to pass from beneath the sheet without interference. Having reached said horizontal position, the said guard slips from beneath the rounded

end of the lever, and the former, actuated by the weights 31, assumes its normal upright position, while the latter, actuated by the weight 36, swings back to its normal position.

As a guide for the sheets as they pass from the table to the rolls, a spring-guard 39 is attached at its rear end to the guard 9 at a suitable point, the inner end of said spring-guard being rendered adjustable by the employment of an adjusting-screw 40, as shown in Fig. 1.

As is obvious, various alterations may be made within the scope of the appended claims without departing from the spirit or scope of the invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device of the character described, the combination with a series of alined sets of rolls, of a truck arranged to travel from one set of rolls to another, a table mounted upon said truck, side-guards carried by said table, one of said side-guards being hinged, and weights whereby said side-guard is normally maintained in an upright position.

2. In a device of the character described, the combination with a series of alined sets of rolls, of a truck arranged to travel from one set of rolls to another, a table mounted upon said truck, side-guards carried by said table, one of said side-guards being hinged, weights whereby said side-guard is normally maintained in upright position, and means arranged at the last set of rolls in the series whereby said side-guard is automatically lowered when said truck is moved rearwardly, the last mentioned means comprising a pivoted lever supported in front of said last set of rolls, said lever being adapted to be engaged by said side-guard and to swing the latter to a horizontal position as the table is moved from beneath it.

3. The combination with a set of rolls and a movable feed-table having a hinged normally-upright side-guard, of a lever pivotally mounted in front of said rolls, means for normally maintaining said lever in a slightly inclined position, and a pocket in said side-guard adapted to be engaged by the end of said lever whereby the latter is caused to swing upon its pivot and the lowering of said side-guard is effected when said table is moved away from said rolls.

4. The combination with a set of rolls and a movable feed-table, of a side-guard hinged to one side of said table, means for normally maintaining said side-guard in an upright position, a lever pivotally mounted intermediate its ends in front of said rolls, a weight carried by one end of said lever, said weight tending to cause the other end of the latter to assume an upraised position, flexible means for holding the last men-

tioned end depressed below the horizontal
position of said lever, said means allowing
said last mentioned end to be upraised by
said side-guard when the latter passes there-
5 under in one direction, and a pocket in said
side-guard adapted to be engaged by said
last mentioned end of the lever when the
truck is moved in the opposite direction,
said lever coöperating with said pocket for

effecting the lowering of said side-guard to 10
a horizontal position.

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

JOHN W. FONNER.

Witnesses:

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E. A. LENKARD.