

No. 829,815.

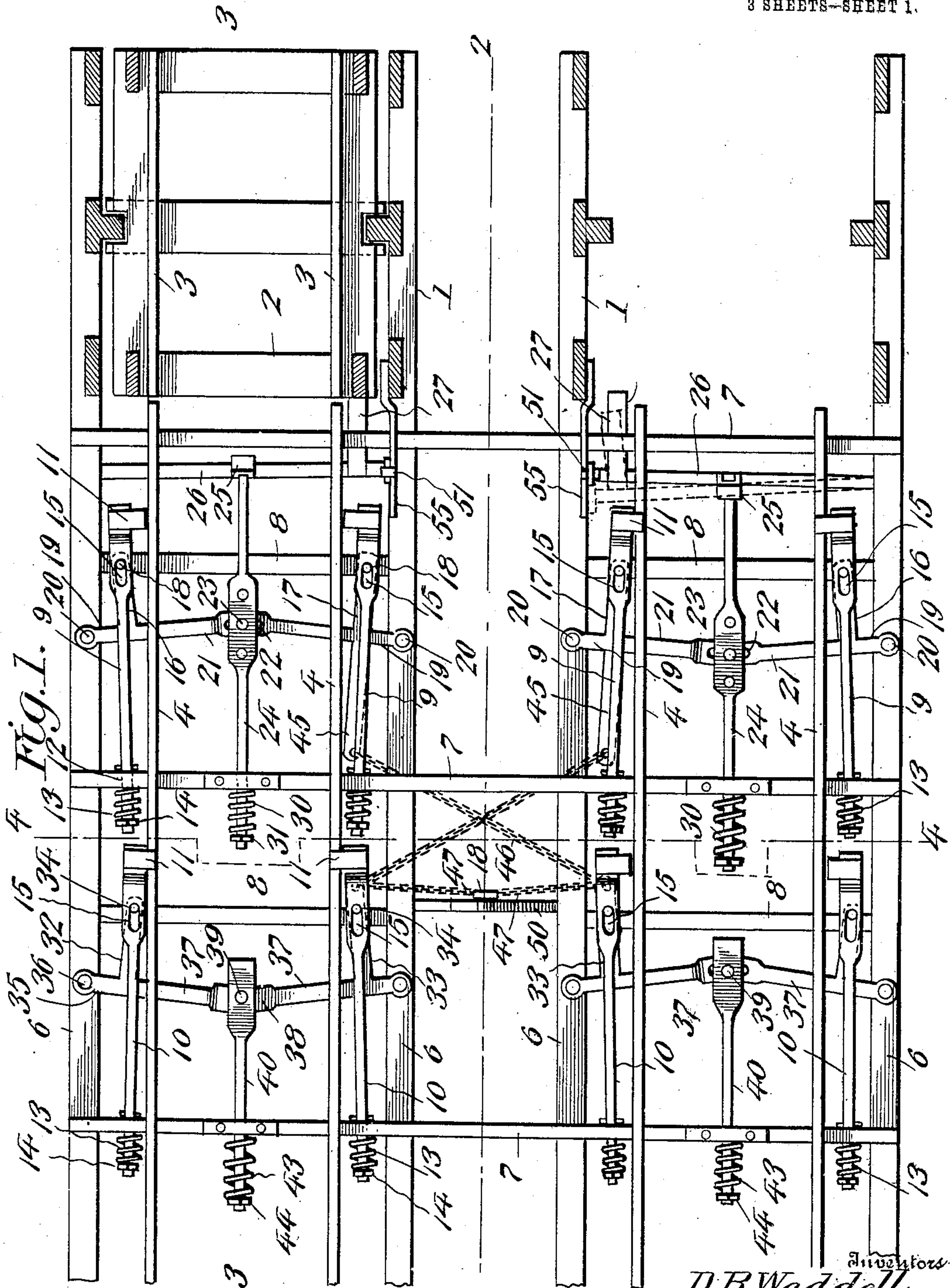
PATENTED AUG. 28, 1906.

D. B. WADDELL, F. M. GIESEY & R. E. GLASS.

CAR TRANSMITTING MECHANISM.

APPLICATION FILED JAN. 10, 1906.

3 SHEETS--SHEET 1.



Witnesses

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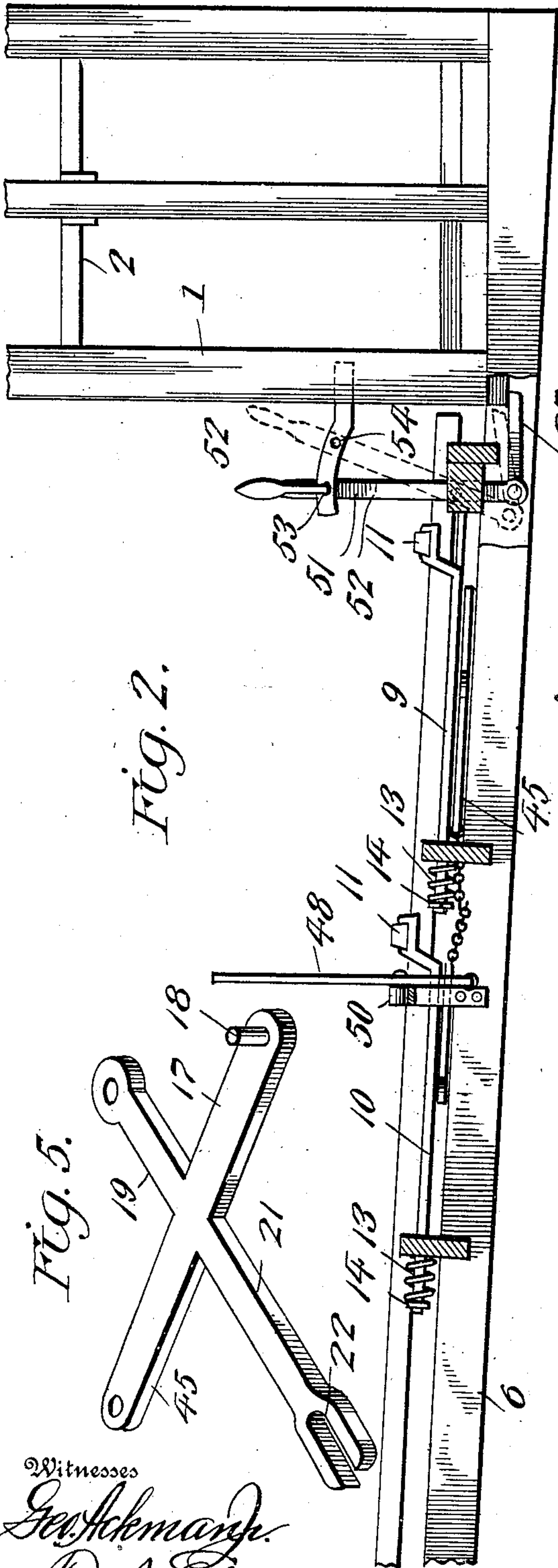


Fig. 2.

Fig. 5.

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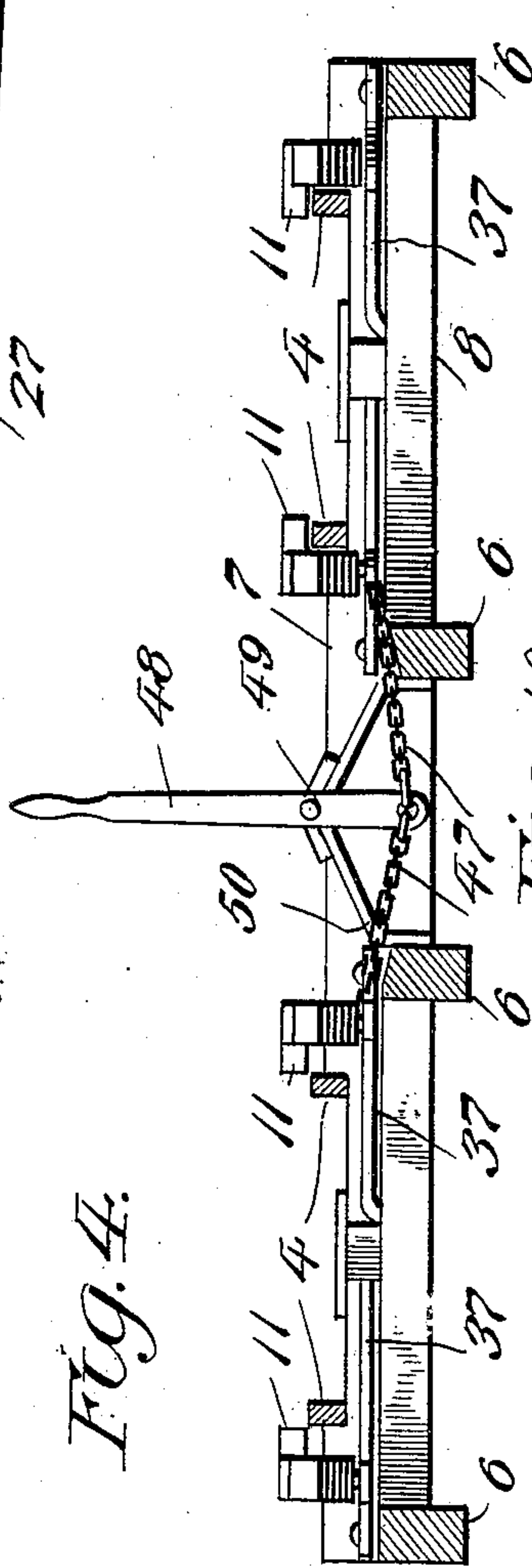
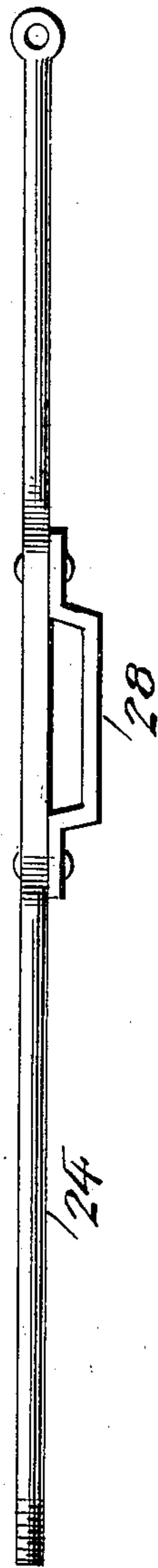


Fig. 4.

Fig. 10.



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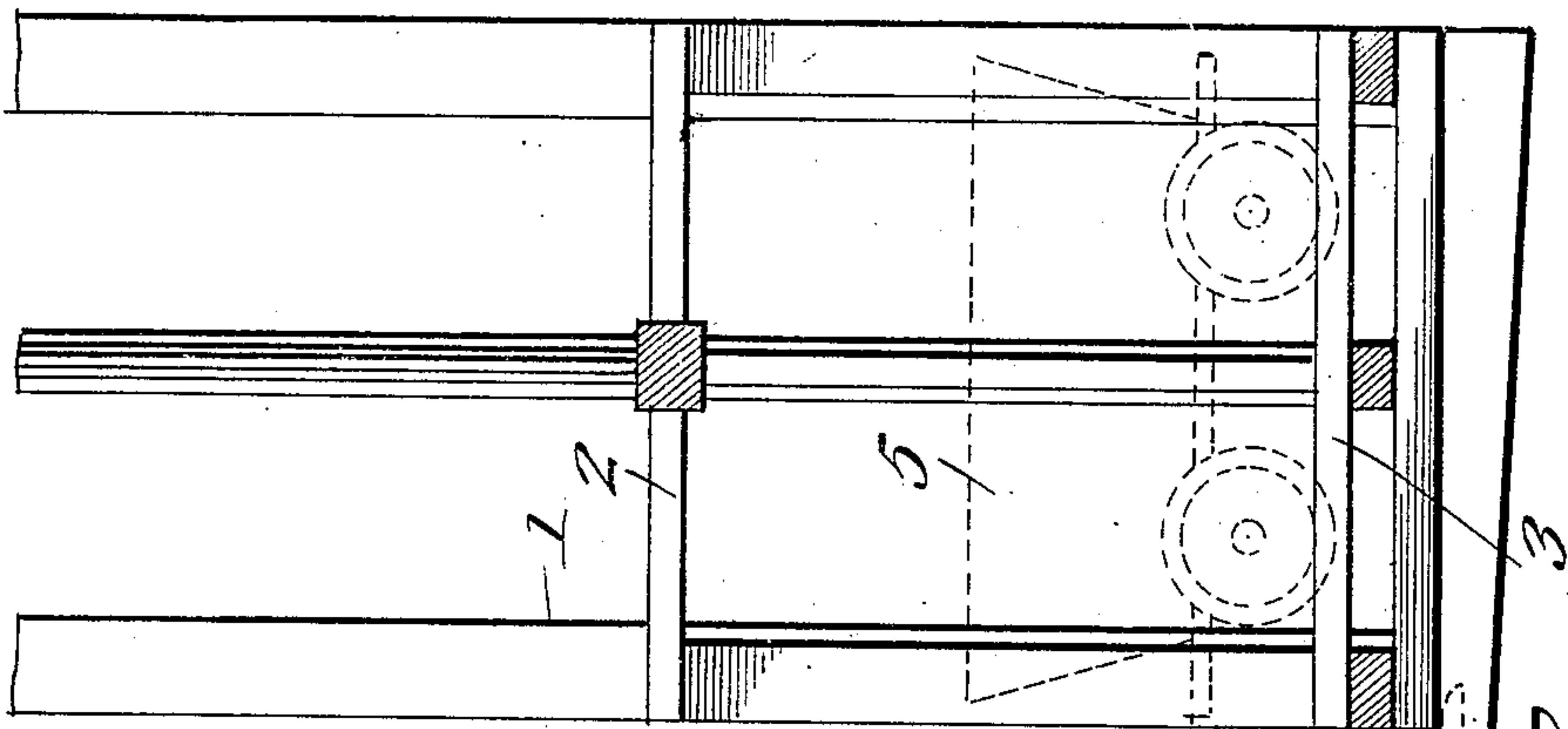


Fig. 8.

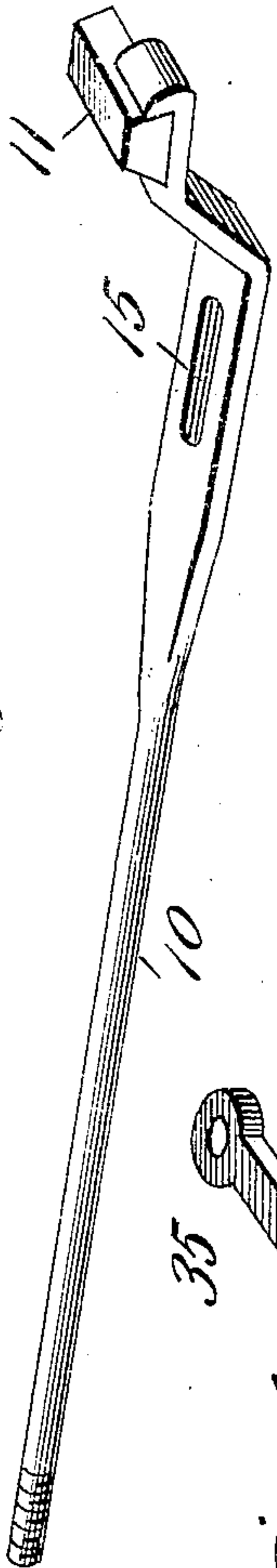


Fig. 6.

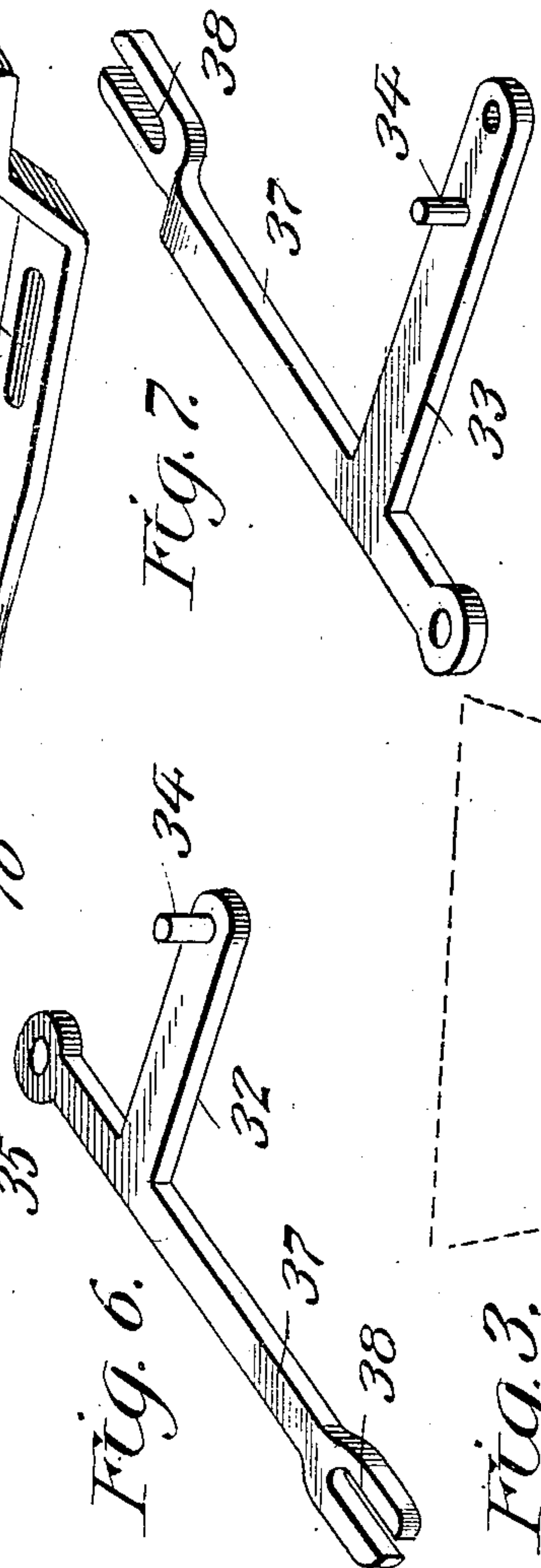


Fig. 7.

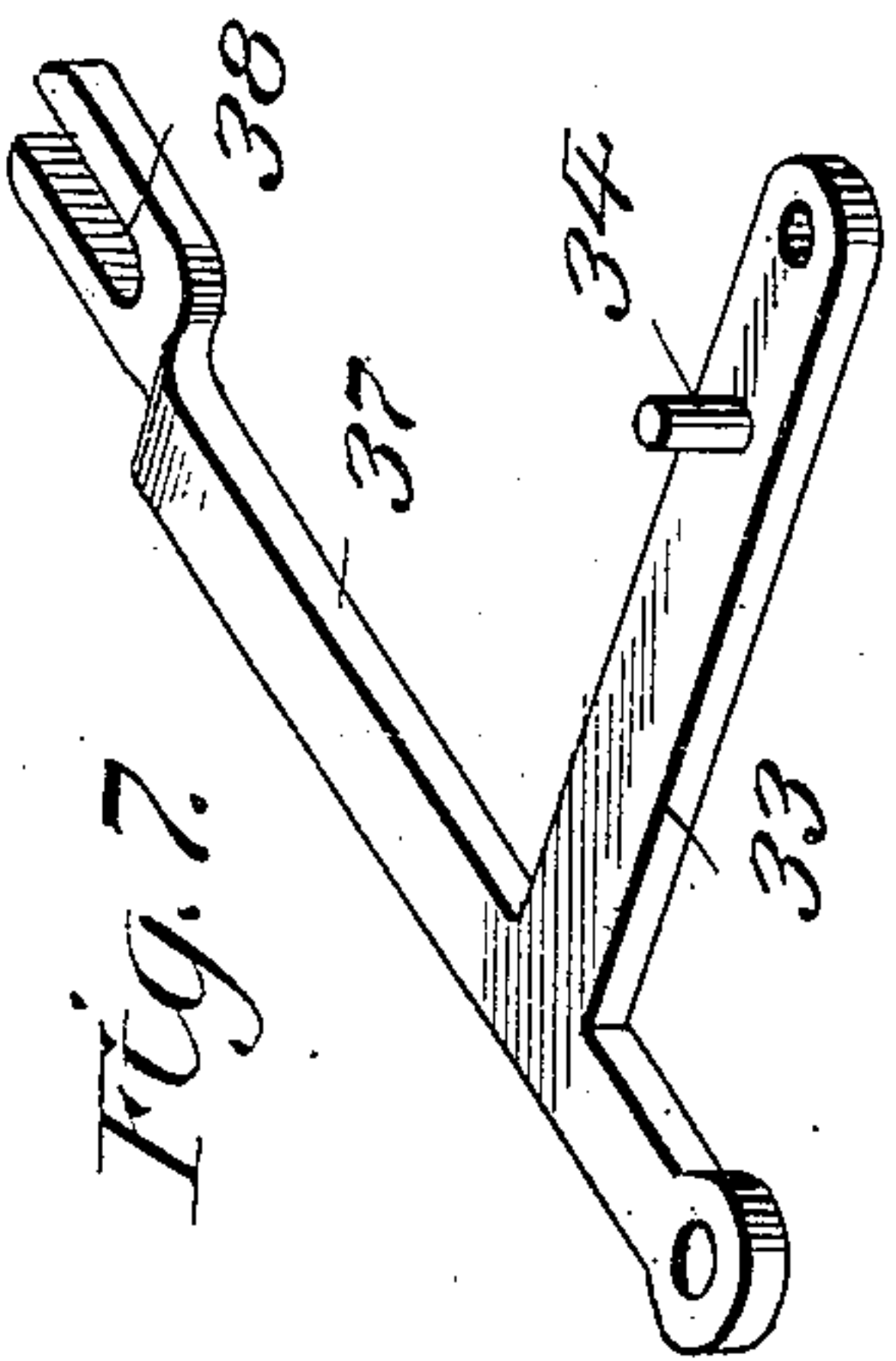


Fig. 3.

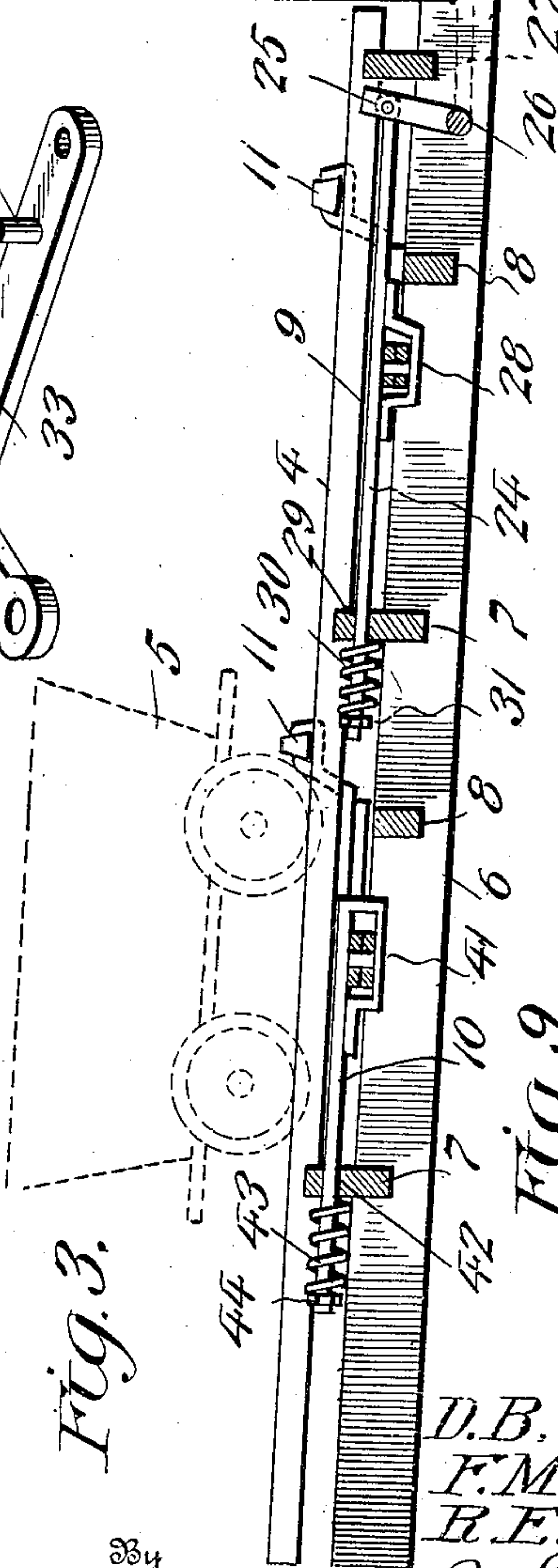
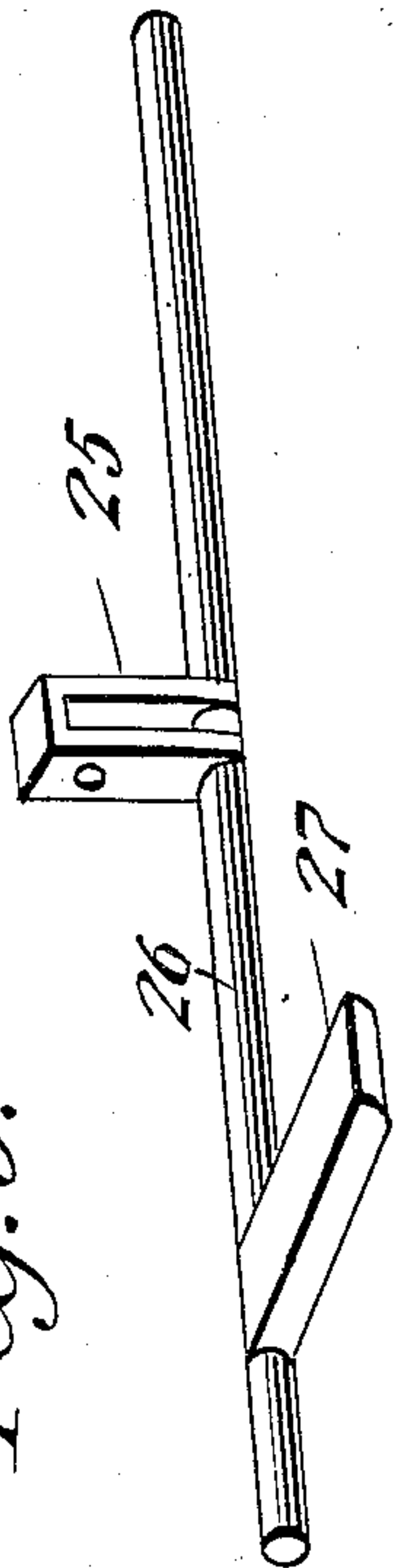


Fig. 9.



Witnesses

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UNITED STATES PATENT OFFICE.

DOCK B. WADDELL, FRANCIS M. GIESEY, AND ROBERT E. GLASS, OF
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CAR-TRANSMITTING MECHANISM.

No. 829,815.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed January 10, 1906. Serial No. 295,491.

To all whom it may concern:

Be it known that we, DOCK B. WADDELL, FRANCIS M. GIESEY, and ROBERT E. GLASS, citizens of the United States, residing at Senecaville, in the county of Guernsey and State of Ohio, have invented new and useful Improvements in Car-Transferring Mechanism, of which the following is a specification.

This invention relates to mechanism for automatically transferring mine-cars from the tracks or rails to the elevating hoists or cages, and has for its objects to produce a comparatively simple inexpensive device of this character which may be readily installed for use, one wherein the cars will be initially locked in position on the rails for passage into the hoist or cage, and one in which the car-locking members will be automatically tripped through the medium of the hoist to release the car and permit its passage into the latter.

A further object of the invention is to provide a mechanism of this class embodying a pair of tracks and coöperating hoists or cages in which two sets of car-holding devices are arranged for operation on each track, one wherein either of the cages will on reaching the limit of its descent operate the forward car-locking members on the adjacent track and the rear locking members on the other track for simultaneously releasing the corresponding cars, and one wherein the corresponding locking members on the respective tracks will be moved simultaneously in relatively reverse directions for alternately locking and releasing the corresponding cars.

With these and other objects in view the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a top plan view, partly in section, of a car-shifting mechanism embodying the invention. Fig. 2 is a side elevation, partly in vertical longitudinal section, the section being taken on the line 2 2 of Fig. 1. Fig. 3 is a similar view taken on the line 3 3 of Fig. 1. Fig. 4 is a detail cross-section taken on the line 4 4 of Fig. 1. Fig. 5 is a perspective view of one of the operating-levers for the front locking members. Fig. 6 is a similar view of one of the operative levers for the rear locking members. Fig. 7 is a similar view of the com-

panion operating member for the rear locking members. Fig. 8 is a perspective view of one of the locking members. Fig. 9 is a perspective view of one of the rock-shafts. Fig. 10 is an elevation of one of the connecting-rods.

Referring to the drawings, 1 1 designate a pair of elevator-shafts, in each of which there is arranged for travel a hoisting-cage 2, equipped with rails 3, designed to aline with and form a continuation of the forward ends of track-rails 4, on which the mine-cars 5 are arranged for travel, these parts, except as hereinafter explained, being of the usual construction and operation and adapted in practice to perform their ordinary functions. It may be observed at this point that there are two sets of the track-rails 4, presenting a pair of parallel tracks leading, respectively, to the elevator-shafts 1, whereby the cars 5, which move over the tracks, pass onto the rails 3 of the companion hoisting-cages to be raised by the latter upward through the shafts 1 from the mine.

The track-rails are sustained adjacent the shafts 1 upon the supporting frame or structure comprising longitudinal members or beams 6, transverse bars or members 7, and intermediate cross-pieces 8, extended between the pairs of beams 6 at points between the transverse bars 7.

Arranged for operation on each of the tracks 4 is a pair of front car-locking members 9 and a pair of rear locking members 10, the members 9 and 10, which are identical in construction, consisting, preferably, of elongated bars provided at their forward ends with inwardly-extending transverse blocks 11, which override and extend transversely across the track-rails 4, the rear ends of the bars or members 9 being extended through suitable bearing-openings 12 in the transverse beams 7 and projected in rear of the latter for the reception of rearwardly-expanded buffer-springs 13, retained in place by nuts 14 and adapted to bear at their forward ends against the beams 7, while formed in each of the locking members or bars at a point adjacent its forward end is a slot 15 for a purpose which will presently appear.

For actuating the front pairs of locking members 9 there is provided pairs of operating members or levers 16 17, provided at their for-

ward ends with uprising engaging members or pins 18, operatively disposed in the slots 15, said levers having at points in rear of and suitably remote from the pins 18 outwardly-
 5 projecting transverse arms or portions 19, pivoted at 20 to the adjacent frame member 6, and inwardly-extending transverse arms or portions 21, provided at their inner ends with slots 22, designed to receive a pivoting mem-
 10 ber or pintle 23 for connecting said arms in pairs to a longitudinally-movable connecting element or rod 24, disposed between the rails and in turn pivotally engaged at its forward end with an uprising crank-arm 25, fixedly
 15 carried by a rock-shaft 26, having a forwardly-projecting substantially horizontal trip-arm 27 disposed at its forward end in the path of the adjacent hoisting-cage 2. The connecting element or bar 24, which is
 20 provided at its longitudinal center with a U-shaped bearing 28 to receive the inner ends of the arms 21, is movably disposed adjacent its rear end in a bearing-opening 29, formed in one of the transverse frame-bars 7, in rear
 25 of which the element 24 extends for the reception of a normally expanded actuating-spring 30, retained in place by a removable nut 31, the function of said spring being to maintain the parts in normal position with
 30 the blocks 11 disposed across the rails 4.

The pairs of rear locking members 10 are actuated by means of operating members or levers 32 and 33, arranged in pairs and having at their forward ends vertically-uprising
 35 engaging portions or pins 34, operatively disposed in the slots 15 of the adjacent locking members, the operating-levers, which are similar in shape to the lever 16, being provided at points in rear of and suitably remote
 40 from the points 34 with outwardly-extending transverse portions 35, pivoted at 36 to the frame-beams 6, and with inwardly-extending transverse arms 37, having slots 38 for the reception of a pivoting member or
 45 pintle 39, by which the arms are operatively engaged with a longitudinally-movable connecting element or bar 40, having at its front end a U-shaped bearing 41 to receive the ends of the arms 37 and disposed between its
 50 ends in a bearing-opening 42, provided in the adjacent frame-bar 7, in reach of which the element extends for the reception of a normally expanded actuating-spring 48, secured by a nut 44 and serving, as in the instance of
 55 the springs 30, for holding the pair of levers 32 33 in normal position with the blocks 11 lying across the rails.

The inner forward levers 17 are provided with rearwardly-extending portions or arms
 60 45, each connected by a cross-chain 46 with the forward end of the rear operating-lever 33 of the opposite track, whereby movement of the forward operating-levers 17 in one direction will impart a reverse movement to
 65 the rear operating-levers 33, which latter are

in turn connected at their forward ends and by means of flexible elements or chains 47 with the lower end of a manually-operable lever 48, pivoted between its ends, as at 49, to a frame member or bar 50, extended be-
 70 tween the inner frame members, whereby the rear operating-levers may be manually operated.

Each of the rock-shafts 26 has fixed upon its inner end a controlling-lever 51, having a
 75 pawl 52, adapted for locking engagement with either of a pair of openings or seats 53 54, provided in a rack-arm 55, attached to and projecting from the framework of the adjacent elevator-shaft 1, the levers 51 serving
 80 to permit manual operation of the rock-shafts for moving the tripping-arms 27 out of the path of their respective cages 2, as illustrated by dotted lines in Figs. 1 and 2.

In practice when one of the hoisting-cages
 85 descends it comes in contact with the adjacent tripping-lever 27, thereby rocking the shaft 26 and exerting forward traction on the corresponding element 24, thus operating the levers 16 17 to move the corresponding pair
 90 of front locking members to position for releasing a car on the rails 4 and permitting the same to travel onto the rails 3 within the cage, while at the same time the rear locking members 10 on the other track are likewise
 95 moved to releasing position for permitting the car which was held thereby to travel downward to a position preparatory to its passage onto the other hoisting-cage, in which position it will be retained by the front lock-
 100 ing members 9, which remain in closed engaging position, as do also the rear locking members 10 on the first-named track. Hence it will be seen that when the front car on one of the tracks is released for passage into the
 105 adjacent cage the next succeeding car on said track will be retained against movement by the rear locking members on said track, while at the same time the rear locking members on the other track will be opened to per-
 110 mit the car which was engaged thereby to pass downward to and be held by the front locking members 9 in position preparatory to entrance into the adjacent cage, which upon its descent will operate the adjacent forward
 115 locking members to release the car and at the same time impart a reverse movement to the front members on the other track, also a relatively reverse movement to the rear locking members on the pair of tracks. When it be-
 120 comes necessary or desirable to operate but a single hoisting-cage, the controlling-lever 51 on the other track is set for moving the adjacent rock-shaft 26 to position with its trip-
 125 ping-arm 27 out of the path of the cage, under which conditions the rear locking members 10 on the other track will be manipulated through the medium of the lever 48 for releasing the cars and permitting them to travel
 130 downward to the front locking members,

which will be automatically operated, as heretofore explained, by the hoisting-cage. When the cars move downward into contact with the locking members, the springs 13 exert a buffing action to relieve the parts of shock and undue straining, while the springs 30 and 43 serve, as before explained, for automatically returning the locking members to normal position after they have been operated through the medium of the respective rock-shafts 26.

From the foregoing it is apparent that we produce a simple device admirably adapted for the attainment of the ends in view, it being understood that in attaining these ends minor changes in the details herein set forth may be resorted to without departing from the spirit of the invention.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a device of the class described, a pair of hoists, tracks leading thereto, car-locking members associated with the tracks and movable to locking or releasing position, and devices operable by the hoists for automatically moving the members in relatively reverse directions.

2. In a device of the class described, a pair of hoists, tracks leading thereto, car-locking members associated with the tracks and movable to locking or releasing position, and devices operable by one of the hoists for moving the locking members on one track to one position and simultaneously moving the mem-

bers on the other track to the reverse position.

3. In a device of the class described, a pair of hoists, tracks leading thereto, car-locking means associated with the tracks and operable for locking or releasing cars on the respective tracks, and devices adapted for operation by either hoist for actuating said means to lock a car on one track and simultaneously release a car on the other track.

4. In a device of the class described, a pair of hoists, tracks leading thereto, a car-locking member associated with each track and movable to locking or releasing position, operative connections between the members for movement in relatively reverse directions, and devices operable by the hoists for operating the members.

5. In a device of the class described, a pair of hoists, tracks leading thereto, front and rear car-locking members associated with each track, connections between the members for movement in relatively reverse directions to locking or releasing positions, and means operable by the hoists for operating the members.

In testimony whereof we affix our signatures in presence of two witnesses.

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FRANCIS M. GIESEY.
ROBT. E. GLASS.

Witnesses:

W. W. OLIVER,
JUSTUS RIGGS.