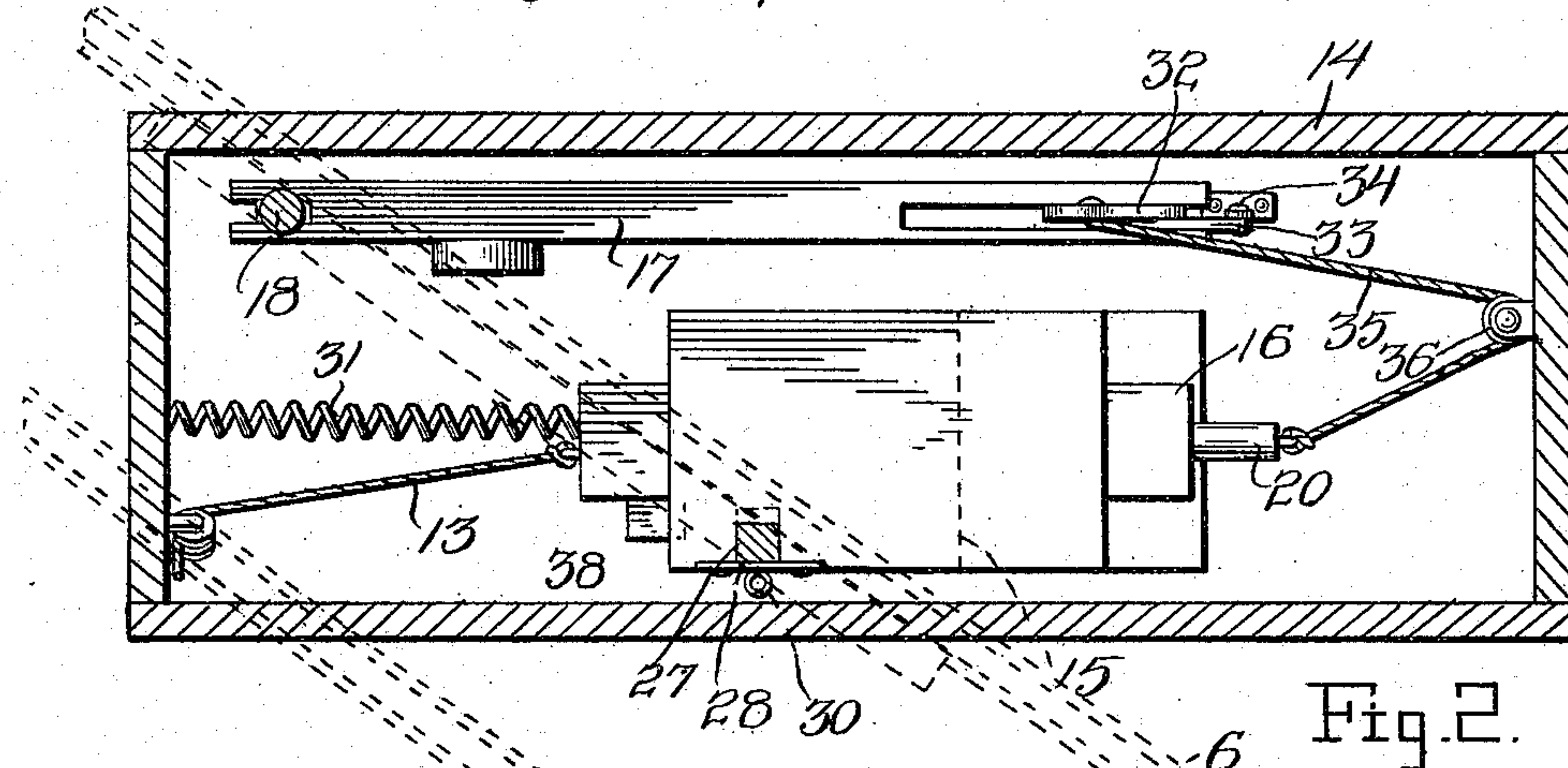
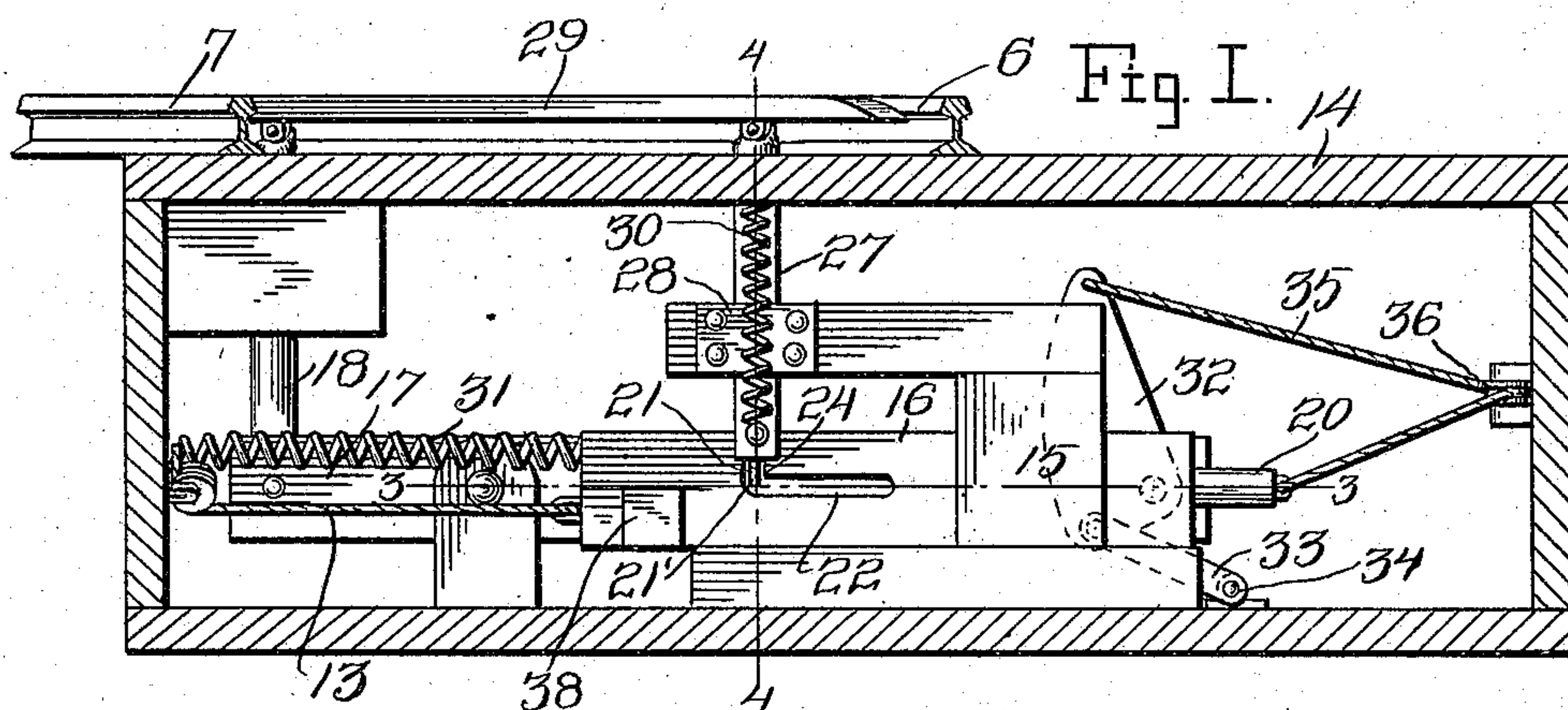


No. 840,683.

PATENTED JAN. 8, 1907.

W. BENGTON.
AUTOMATIC RAILWAY GATE.
APPLICATION FILED AUG. 3, 1906.

3 SHEETS—SHEET 1.



Witnesses

C. H. Reichenbach.
A. B. Mac Nab

Inventor.

W. Bengtson.

By

Chas. A. Chas. A.

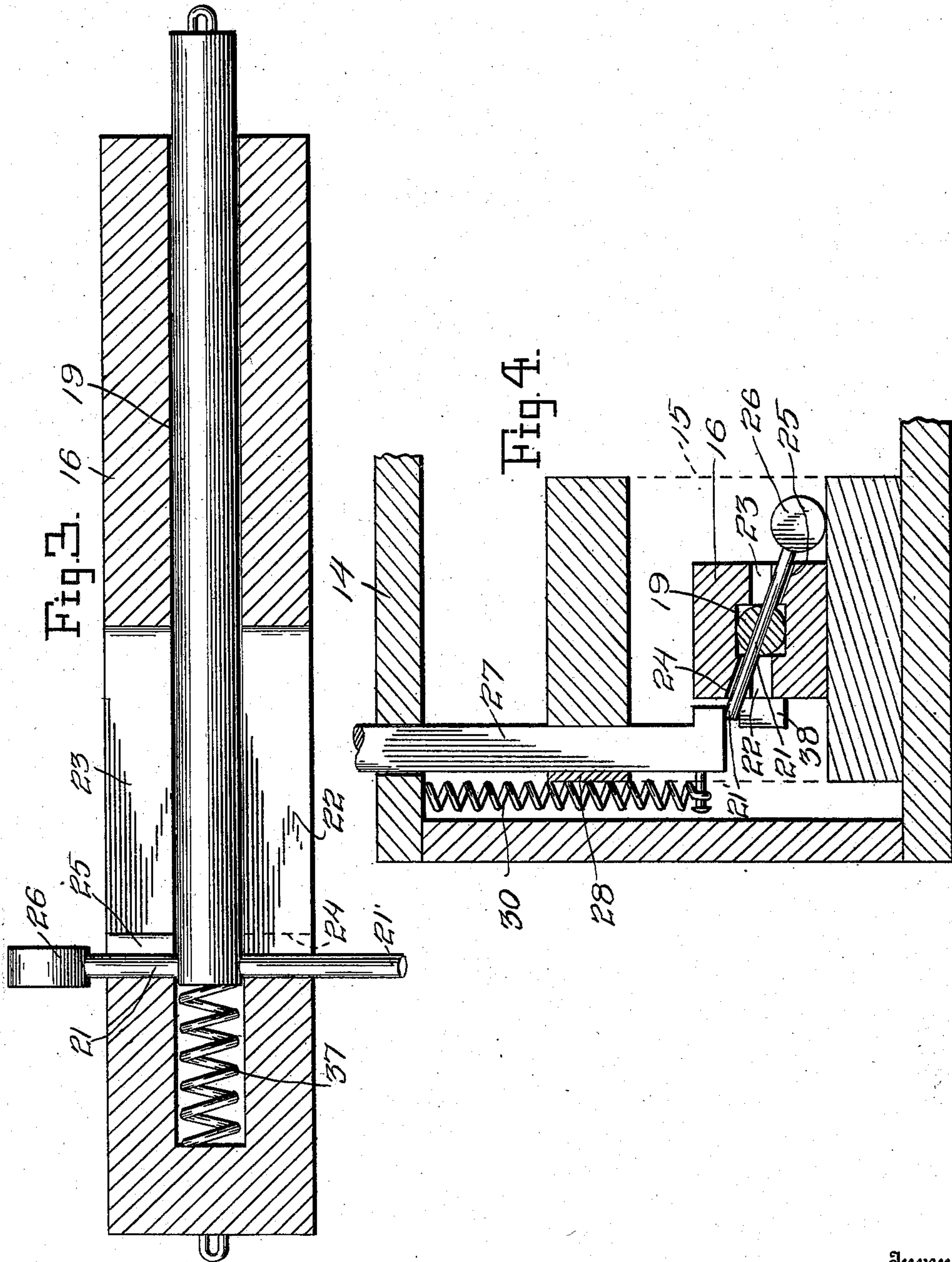
Attorneys

No. 840,683.

PATENTED JAN. 8, 1907.

W. BENGTON.
AUTOMATIC RAILWAY GATE.
APPLICATION FILED AUG. 3, 1906.

3 SHEETS—SHEET 2.



Witnesses

O. K. Reichenbach.
F. B. MacNeil

Inventor

W. Bengtson.

By

Charles Charles.

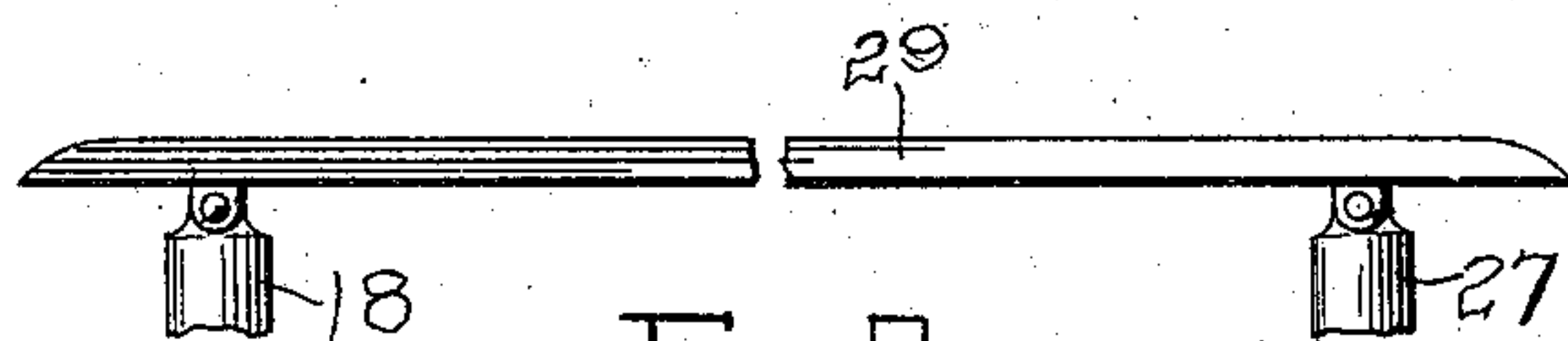
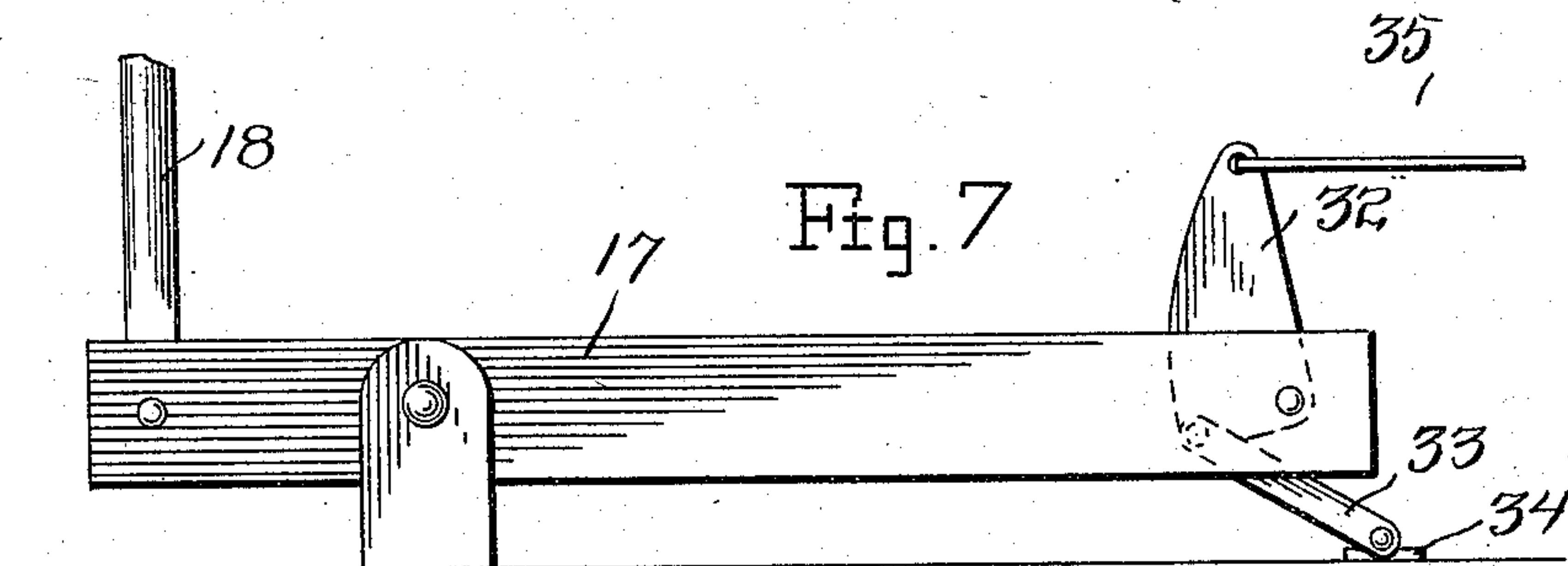
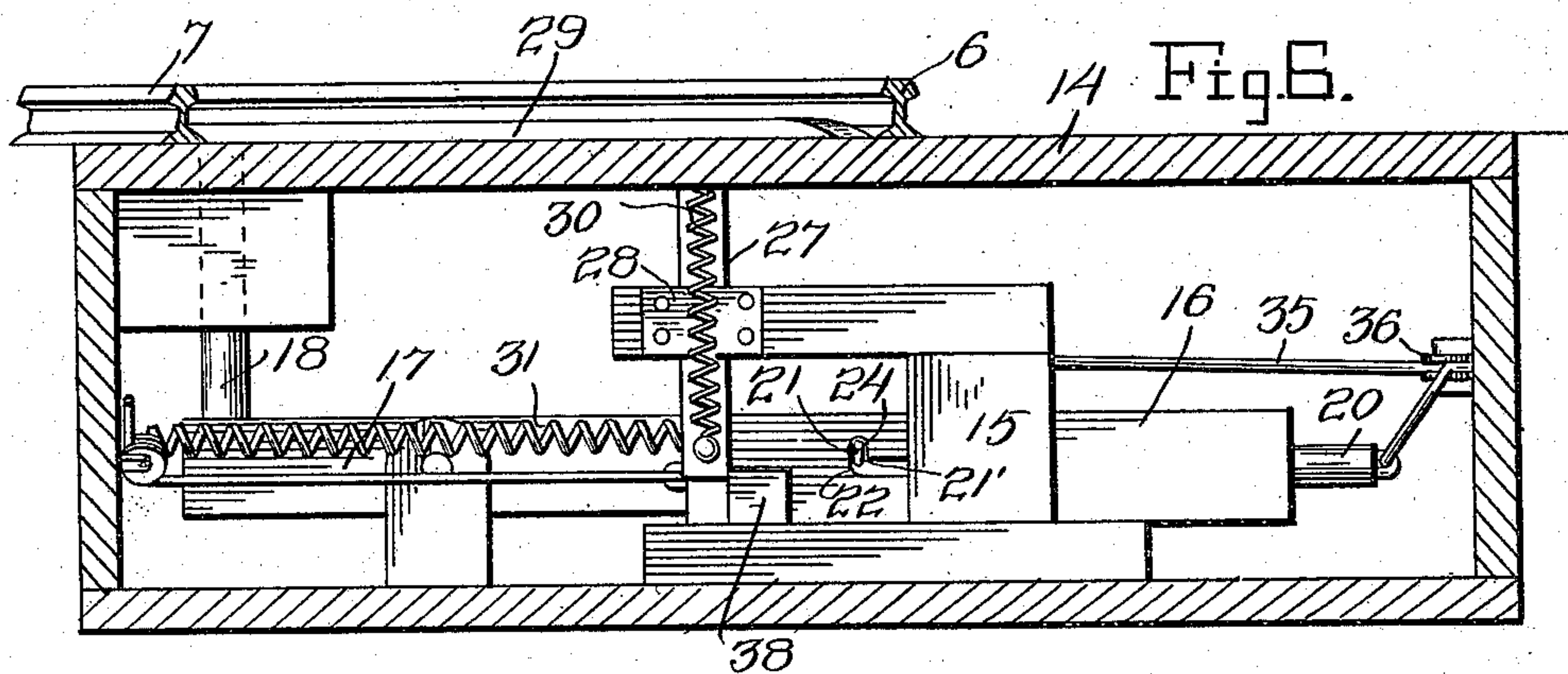
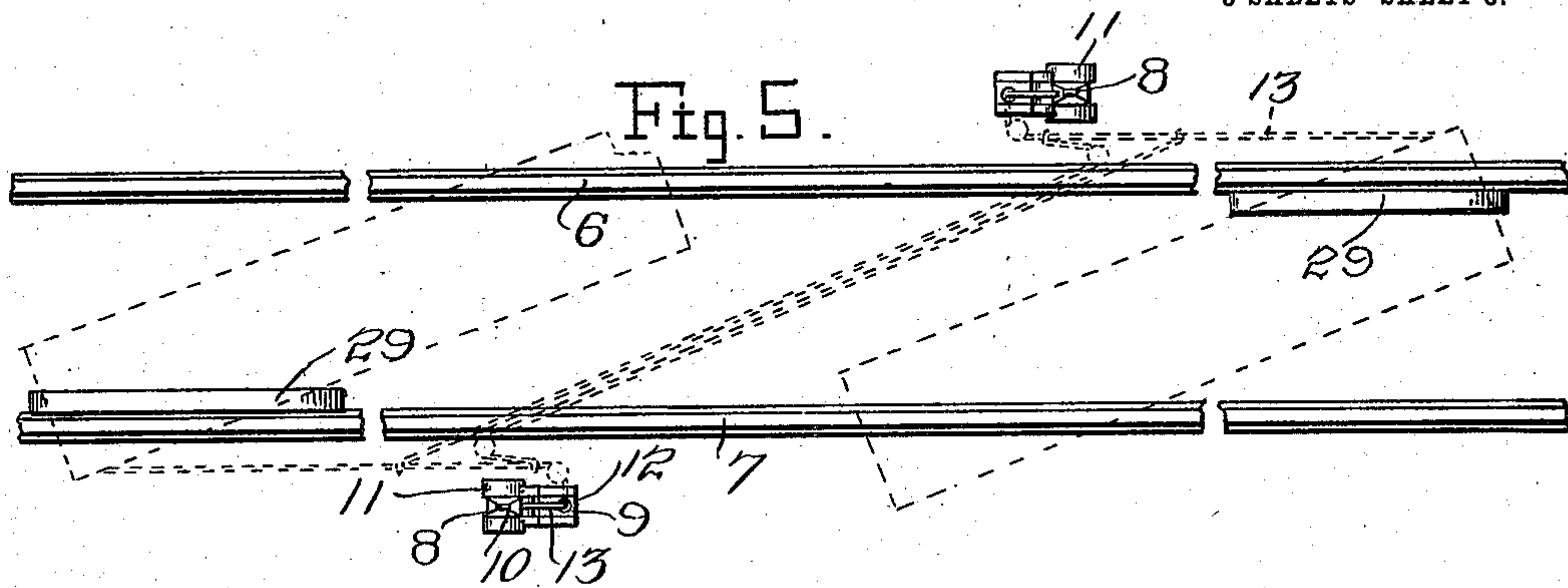
Attorneys

No. 840,683.

PATENTED JAN. 8, 1907.

W. BENGTON.
AUTOMATIC RAILWAY GATE.
APPLICATION FILED AUG. 3, 1906.

3 SHEETS—SHEET 3.



Witnesses

G. K. Reichenbach
H. B. Mac Nab

Inventor

W. Bengtson.

By

Chas. A. Chas. A.

Attorneys

UNITED STATES PATENT OFFICE.

WALTER BENGTON, OF PORTER, MINNESOTA.

AUTOMATIC RAILWAY-GATE.

No. 840,683.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed August 3, 1906. Serial No. 329,133.

To all whom it may concern:

Be it known that I, WALTER BENGTON, a citizen of the United States, residing at Porter, in the county of Yellow Medicine, State of Minnesota, have invented certain new and useful Improvements in Automatic Railway-Gates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to railway-gates, and more particularly to train-operated gates, and has for its object to provide a gate so arranged that it will be moved into closed position by a train approaching the crossing and will be automatically opened after the train has passed.

Another object is to provide a gate so arranged that the passage of a train over the actuating means after leaving the crossing will not close the gate.

It is to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is an elevational view of the present invention, showing the casing in section to illustrate the mechanism within it. Fig. 2 is a top plan view of the mechanism within the casing, the plunger and vertical link being shown in section and the rails and flange-plate being shown in dotted lines. Fig. 3 is a longitudinal section of the slide, showing the arrangement of the movable rod therewithin, the section being taken on line 3 3 of Fig. 1. Fig. 4 is a section on line 4 4 of Fig. 1, taken vertically in the plane of the plunger and the latch-rod. Fig. 5 is a plan view showing the relative position of the gate and flange-plate, portions of the rail between the crossing and the flange-plate being broken away. Fig. 6 is a view similar to Fig. 1, showing the parts when the gate is in closed position. Fig. 7 is a detail section of the lever, showing the arrangement of the plate and links. Fig. 8 is a detail view showing the mounting of the flange-plate.

Referring now to the drawings, there are shown rails 6 and 7 and a crossing which is provided with a gate 8, it being understood

that in practice two gates are used, one at each side of the rails. The gate includes a support 9 and a gate-arm 10, which is pivoted in the support between its ends and is held normally in open position by a weight 11. A vertical passage 12 is formed through the support and receives a cable 13, which is secured at its upper end to the gate 10 at the opposite side of the pivot-point thereof from the weight 11, so that downward movement of the cable closes the gate, as will be readily understood.

A casing 14 is located beneath the rail at one side of the crossing, and the cable 13 passes into this casing, as shown. Within the casing there is located a guide 15, in which there is mounted for horizontal movement a slide 16, and pivoted within the casing for vertical movement there is a lever 17, the pivot-point of which is located adjacent to one end thereof, and to this end there is pivoted the lower end of a vertical link 18, which extends upwardly through the casing adjacent to the rail.

Within the slide 16 is a longitudinally-extending chamber 19, opening through one of its ends, and to the other end of this slide the cable 13 is attached. A rod 20 is revolvably and slidably engaged in the chamber 19 and has a cross-latch bar 21 engaged in its inner end which extends outwardly through laterally-formed horizontally-extending slots 22 and 23, which communicate with the chamber 19 and open through the side faces of the slide 16. At their ends opposite to the open end of the passage 19 these slots 22 and 23 are provided with upwardly and downwardly extending notches 24 and 25, respectively, which occupy a common vertical plane for the reception of the opposite end portions of the latch-arm 21, and it will be understood that the rod 20 may be operated in the chamber 19 to bring the latch-arm into and out of the notches. In the drawings it will be seen that when the latch-arm is in the notches the rod 20 is held against movement with respect to the slide, and the end portion which is adapted to enter the notch 25 is weighted, as shown at 26, to hold the latch-arm normally in the notches. The opposite end of the latch-arm 21 from the weight 26 is indicated at 21' and extends laterally beyond the slide, and the normal position of the slide is such that this end 21' of the latch-arm lies below the lower end of the

vertically-movable plunger 27, which is parallel to the link 18 and which is slidably engaged in the bracket 28, extending horizontally from the guide 15. This plunger 27 also lies adjacent to the rail 6 and nearer the crossing than the link 18, the link and the plunger being connected at their upper ends by a flange-plate 29, which is pivoted to the side of the rail 6 for engagement and depression by the wheel-flanges of a train, and the flange-plate is of such a length that it remains depressed at all times while the train is passing thereover.

A spring 30 is secured to the plunger 27 and is arranged to hold the latter yieldably against downward movement and with the flange-plate in raised position, and a spring 31 is secured to the slide 16 and to the casing and is arranged to hold the slide yieldably in its normal position and with the cable 13 slack, so that the gate-arm 10 is normally raised. At its opposite end from the link 18 the lever 17 is bifurcated and has pivoted in the bifurcations an upwardly-extending plate 32, which is movable upon its pivot in a vertical plane, and inwardly of its pivot-point and below said point this plate 32 is pivoted to a link 33, which extends downwardly to a fixed pivot 34 at its lower end, and it will thus be seen that when the plunger 18 is moved downwardly the upper portion of the plate 32 will be moved rearwardly toward the plunger. Connected to the upper end of the plate 32 there is a cable 35, which is passed around a pulley 36 and secured to the outer or forward end of the rod 20. The spring 31 thus holds the rearward ends of the lever 17 and plunger 18 raised.

It will be understood that a gate-operating mechanism such as that just described is located at each side of the crossing diagonally of the rails, with the plungers 27 nearer to the crossing than the links 18. A train passing over the track in the direction of the crossing will depress the link 18 of the adjacent mechanism first, operating the lever and drawing upon the cable 35 to move the slide against the action of the spring 21 and pull upon the cable 13 to lower the gate-arm 10, the plunger remaining raised because of the pivotal connection of the flange-plate therewith until after the depression of the link takes place. A train passing over the tracks in the opposite direction and which has passed the crossing will of course initially depress the opposite end of the flange-plate 29, moving the plunger 27 downwardly independently of the link 18 to engage the end 21' of the latch-arm 21, which is thus moved out of the notches 24 and 25 and into position to pass into the slots 22 and 23. The further passage of the flanges on to the plate 29 depresses the link 18 and operates the lever 27 to pull the cable 35; but in this case

the rod 20 moves independently of the slide 16 and the gate-arm 10 is allowed to remain in raised position. A spring 37 is secured to the rearward end of the rod 20 and to the slide and holds the rod yieldably in position for engagement of its latch-arm in the notches.

A block 38 is secured to the side face of the slide 16 adjacent to the plunger 27, and the plunger when at the downward limit of its movement lies in the path of this block, the arrangement being such that the slide through downward movement of the link 18 is moved to bring the block 38 beyond the plunger 27, so that when the latter is subsequently depressed it is brought into position for engagement by the block to act as a positive lock against return of the slide under the action of the spring 31 until the train has finally passed beyond the flange-plates in the direction of the crossing.

What is claimed is—

1. The combination with a railway-gate, of an operating mechanism comprising a pivoted lever, a slide, connections between the slide and gate for operation of the latter when the slide is moved, connections between the slide and lever for movement of the slide with the lever, said connections being movable into and out of operative position, means for holding the connections normally in operative position, an actuating member arranged for independent downward movement of its ends, and connections between said actuating member and the lever for movement of the lever when one end of the member is depressed, and means carried by the opposite end of the lever for movement of the connections between the slide and lever into inoperative position when said end of the member is depressed.

2. The combination with a gate, of a slide connected therewith for movement of the gate when the slide is moved, a rod slidable with respect to the slide, means for holding the rod normally against movement with respect to the slide, means connected with the rod for moving it and the slide, and means for moving the rod-holding means out of operative position.

3. The combination with a railway-gate, of a slide, operative connections between the slide and gate, a rod slidable with respect to the slide, means for connecting the rod with the slide for simultaneous movement thereof, a lever, connections between said lever and the rod for movement of the latter when the lever is moved, means for moving the lever, means for moving the rod and slide-connecting means out of operative position, and means for actuating the third-named means and the lever-moving means, said actuating means being arranged for operation by a train passing in one direction over the tracks to inwardly move the lever, and by a train

passing in the opposite direction to inwardly move the connecting means into inoperative position.

4. A gate-operating mechanism comprising a slide, a rod slidable with respect to the slide, means for holding the rod at times against movement independently of the slide, a plunger arranged for downward movement to move the rod-holding means into inoperative position, a pivoted lever, connections between the rod and the lever for simultaneous movement thereof, an op-

erating-link connected with the lever, a flange-plate connected to the plunger and link for independent downward movement thereof, and means for holding the plunger and link yieldably in raised position. 15

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

WALTER BENGTON.

Witnesses:

SAMUEL LEWISON,
J. P. LANGMACK.