

No. 837,371.

PATENTED DEC. 4, 1906.

R. A. ABBOTT.
RAILROAD CROSSING.
APPLICATION FILED OCT. 11, 1906.

2 SHEETS—SHEET 1.

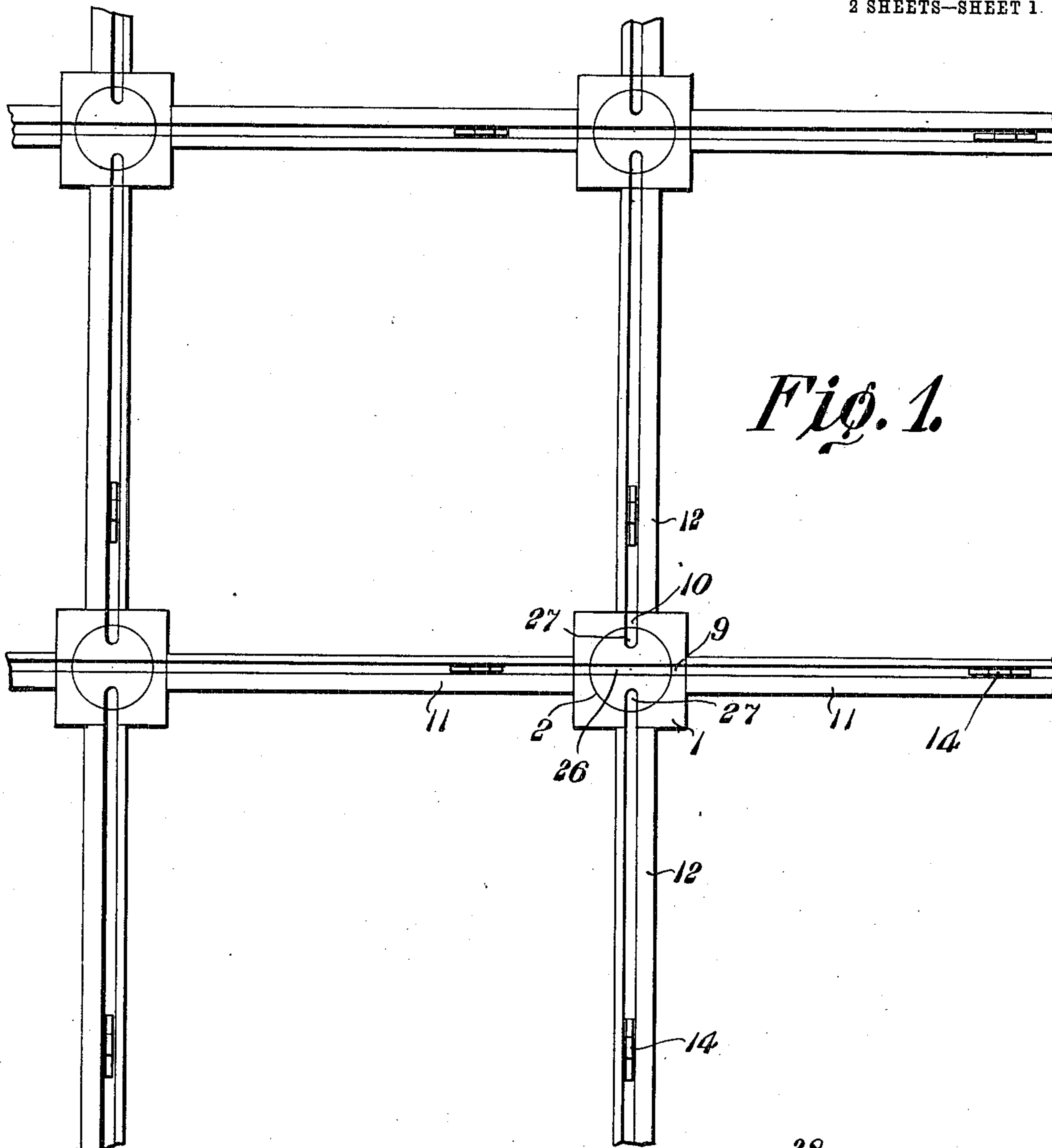
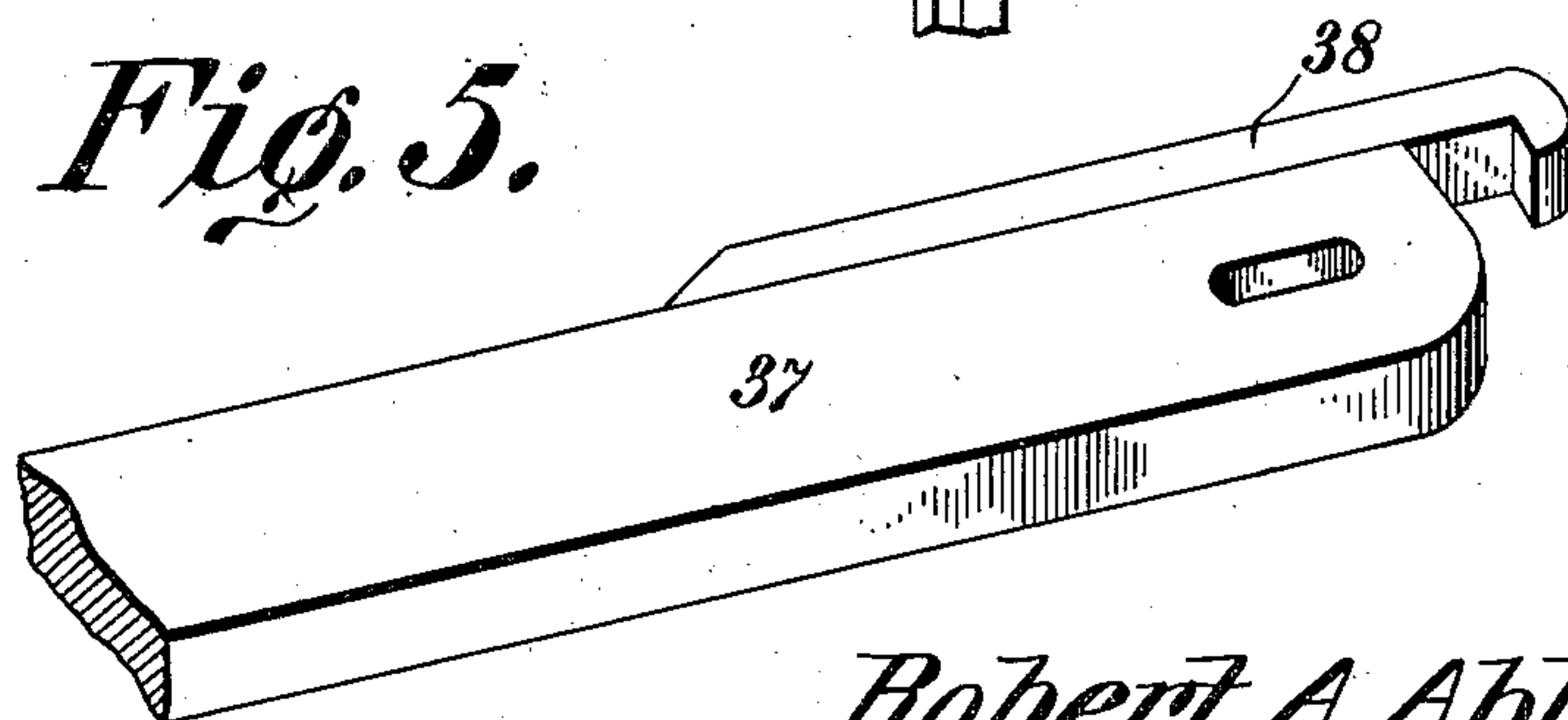


Fig. 1.

Fig. 5.



WITNESSES:

E. J. Stewart
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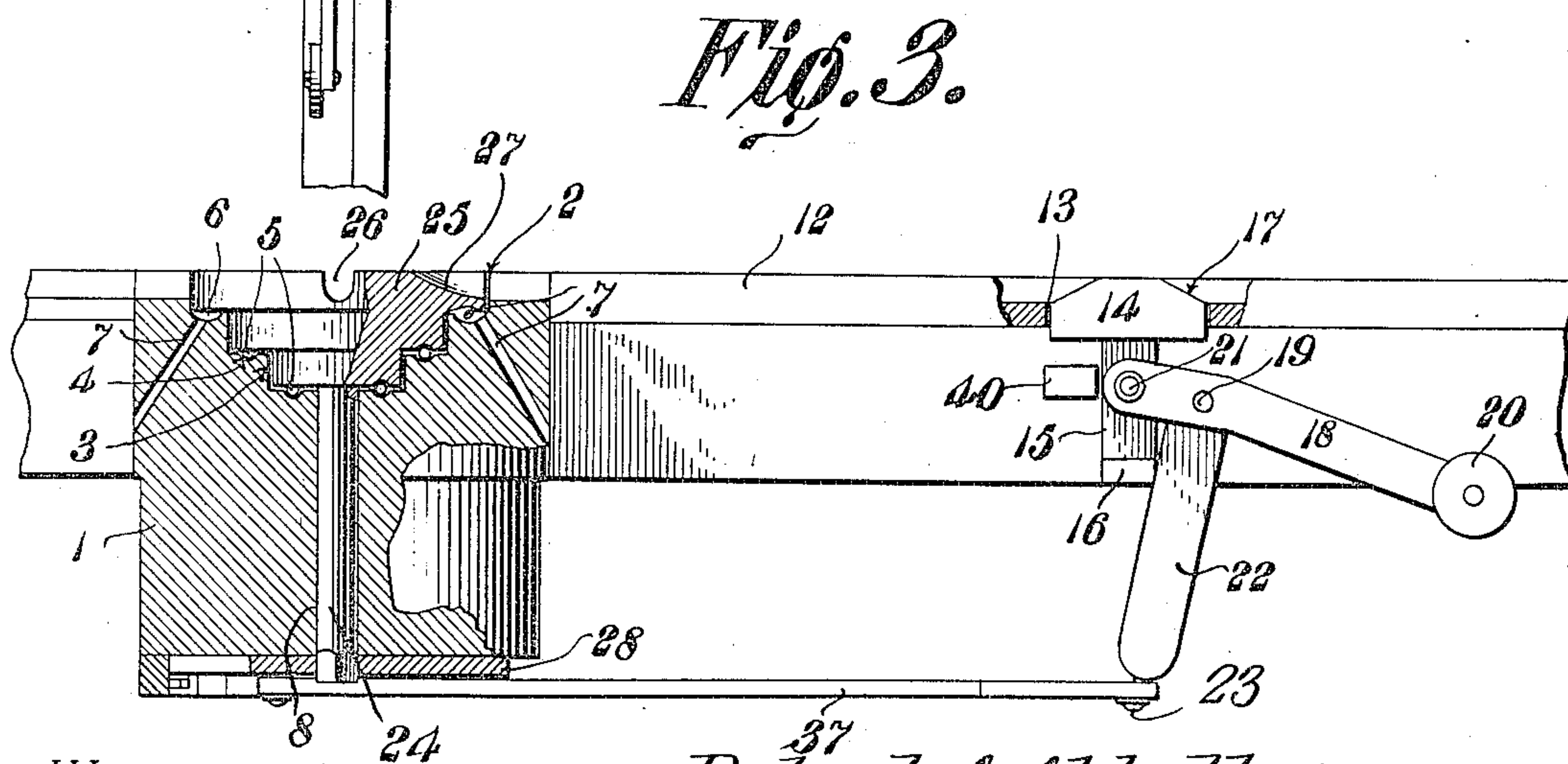
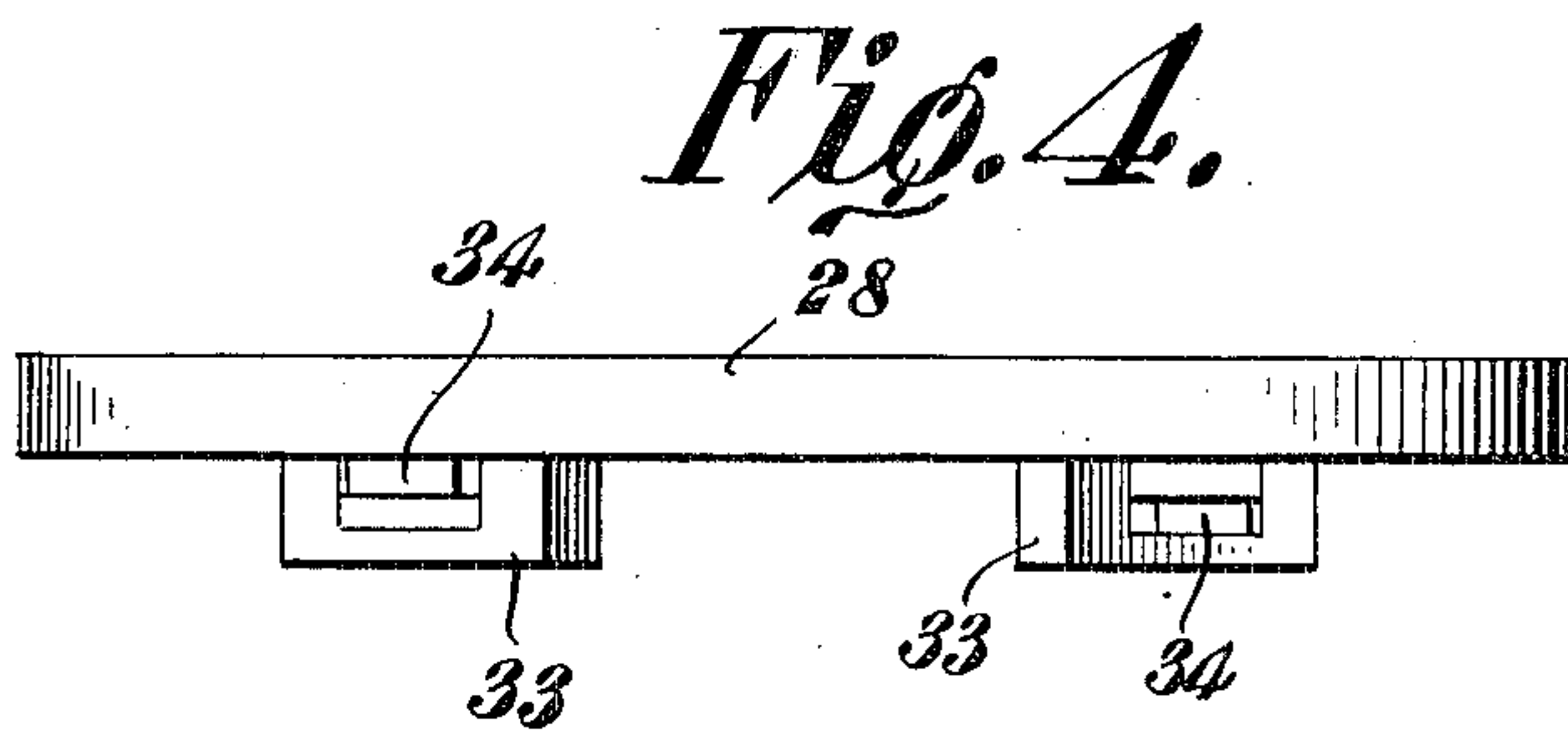
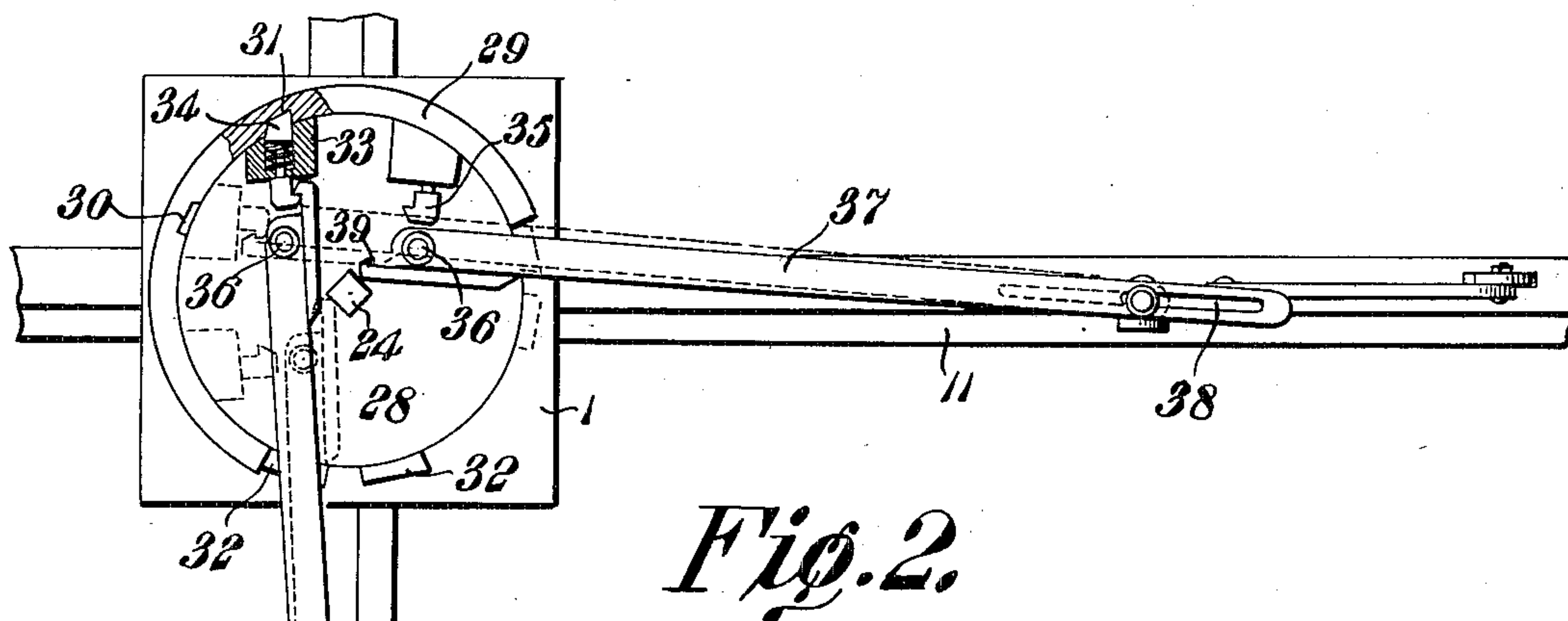
By *C. A. Snow & Co.*
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2 SHEETS—SHEET 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ROBERT A. ABBOTT, OF PHILADELPHIA, PENNSYLVANIA.

RAILROAD-CROSSING.

No. 837,371.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed October 11, 1906. Serial No. 338,462.

To all whom it may concern:

Be it known that I, ROBERT A. ABBOTT, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Railroad-Crossing, of which the following is a specification.

This invention relates to railroad-crossings, and is designed for use at the points of intersection of the rails, so as to prevent pounding by car-wheels passing thereover in any direction.

Heretofore in the construction of railroad crossings it has been customary to space the rails apart at the crossing-points, so as to allow the wheel-flanges to pass between them. As a result of this arrangement the wheels pound to a considerable extent while passing thereover and are often injured.

The object of the present invention is to provide a simple bridge attachment at each point of intersection, the same being operated automatically by a car approaching from either direction.

Another object is to provide a lock for securing each bridge attachment in the position to which it may be adjusted.

A still further object is to provide a bridge attachment which will easily operate and which will not be interfered with by the admission of water, &c., to the interior of the mechanism.

With the above and other objects in view the invention consists of certain novel features of construction and combinations of parts, which will be hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings, Figure 1 is a plan view of a crossing embodying the present improvements. Fig. 2 is a bottom view of one of the bridges and showing the operating mechanism, one of the latch-casings being shown in section. Fig. 3 is a section through the bridge and showing the operating mechanism in elevation. Fig. 4 is an edge view of the base-plate of the bridge, and Fig. 5 is a detail view of one of the draw-bars.

Referring to the figures by characters of reference, 1 is a bridge block or body, preferably rectangular in form, having a circular recess 2 in the center of the top thereof, the bottom of said recess being stepped, as shown at 3, each of the lower steps being provided with a circular groove 4, constituting a race

for a plurality of balls 5. A circular groove 6 is formed in the upper step and constitutes a drain, from which extend outlet-passages 7. An opening 8 extends downward through the center of the body 1. The upper face of the body has grooves 9 and 10 formed therein at right angles to each other, both of these grooves being intersected by the recess 2. Rail-sections 11 and 12 extend at right angles from the body 1, and the grooves of these rails register with the grooves 9 and 10. An opening 13 is formed in the bottom of each groove in the rails 11 and 12, and mounted within said openings is the head 14 of a plunger 15, which is slidably mounted within a groove 16. The ends of the head are beveled, as at 17. A lever 18 is fulcrumed, as at 19, upon the rail under and close to the opening 13, and a weight 20 is connected to one end of this lever, while the other end is fastened by a pivot-pin 21 with the plunger 15. An arm 22 is rigidly connected to and extends downward from lever 18 and has a pin 23 extending from the end thereof.

Rotatably mounted within the opening 8 is a stem 24, having a stepped head 25, which fits snugly within the circular opening 2 and bears upon the series of balls therein. This head constitutes the bridge proper and has a groove 26 therein adapted to swing into register with the groove in either rail 11 or 12. Short alining grooves 27 extend into the head from the periphery thereof and at right angles to the grooves 26 and are adapted to register with the groove in the rail out of register with groove 26. The inner ends of the grooves 27 are inclined, as shown particularly in Fig. 3, so that should a wheel-flange inadvertently pass into said groove, as when the device should for some reason not work, said wheel will be deflected upward and over the groove without becoming derailed. It is to be understood that this construction is only provided for an emergency, which will rarely, if ever, occur.

The lower end of the stem 24 is angular and fits within the center of a base-plate 28, which is partly surrounded by a curved flange 29, extending downward in the body 1. This flange has two notches 30 and 31 formed in its inner face and out of horizontal alinement, and stops 32 extend from the periphery of said plate and are adapted to contact with the ends of flange 29, so as to cause the head 25 to stop as soon as the groove 26 is brought into register with the

groove in one of the rails. Two casings 33 are carried by the plate 28, and within each is mounted a spring-pressed latch 34. These latches are out of horizontal alinement, so that only one of the notches 31 and 30 will be engaged by each latch. The notches and latches are so disposed that whenever the groove 26 registers with a rail-groove one of the latches will spring into a notch and lock the head 25 against rotation. Each latch 34 has a hooked head 35, which is for the purpose hereinafter set forth.

Extending downward from the plate 28 at about forty-five degrees from each other are wrist-pins 36, each of which is engaged by one end of a draw-bar 37. These draw-bars extend under the rails 11 and 12 and have longitudinal slots 38 therein, through which the pins 23 project. Extending from the pivoted ends of the draw-bars 37 are hooked arms 39, which are adapted to successively engage the hooked heads 35. The parts are so arranged that when the groove 26 registers with the groove in rail 11 the draw-bar 37 under the rail 12 engages one of the heads 35.

With the parts in the positions shown in Figs. 1 and 2 it will be understood that a car traveling on rail 11 can pass over the bridge without jolting. As the wheels pass over the head 14 no result will be obtained, because, as shown in Fig. 2, the pin 23 can travel backward within the slot 38 without pulling the draw-bar. If, however, a car approaches the crossing over the rail 12, the flange of the car-wheel will push downward on head 14, raise the weight 20, and swing arm 22 backward, so as to pull on draw-bar 37. The latch 34 will be promptly withdrawn from its notch, there being sufficient play at the pivot 36 to allow this result, and the plate 28 will then be turned forty-five degrees, bringing the other latch 34 into locking position and with its head 35 in engagement with the arm 39 of the other draw-bar, as shown by dotted lines in Fig. 2. The head 25 will of course be turned with the plate 28, and groove 26 will be brought into register with the groove in rail 12. As soon as the wheel passes over the head 14 the weight 20 will return it to its normal position, while the hooked arm 39 thereof will remain in the position shown by dotted lines in Fig. 2. The downward movement of the head 14 is limited by a stop 40.

It will be understood that the mechanism herein described only relates to one bridge, and where a plurality of bridges are employed each will have its individual actuating mechanism, such as herein described and as indicated in Fig. 1.

It will be noted that if for any reason the weight 20 should not return the head 14 to its raised position after the wheel passes over it the car coming in the opposite direction will operate the mechanism so as to promptly raise said head.

The preferred form of the invention has been set forth in the foregoing description; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of the claims.

What is claimed is—

1. A railroad-crossing comprising angularly-disposed rails, a rotatable bridge-piece interposed between the rails and having a flange-receiving groove adapted to register with either rail, means for locking the bridge-piece against movement, and means operated by a wheel passing over one of the rails for unlocking and partly rotating the bridge-piece.

2. A railroad-crossing comprising angularly-disposed rails, a rotatable bridge-piece interposed between the rails and having a flange-receiving groove adapted to register with either rail, means for locking the bridge-piece against movement, and depressible means upon each rail for successively unlocking and partly rotating the bridge-piece.

3. A railroad-crossing comprising angularly-disposed rails, a rotatable bridge-piece interposed between the rails and having a flange-receiving groove adapted to register with either rail, means for locking the bridge-piece against movement, depressible means upon each rail for successively unlocking and partly rotating the bridge-piece, means for holding said depressible means normally raised, and means for limiting the movement of the bridge-piece.

4. A railroad-crossing comprising angularly-disposed rails, a rotatable bridge-piece interposed between the rails and having a flange-receiving groove adapted to register with either rail, friction-reducing bearings for the bridge-piece, a drain below the bridge-piece to prevent the admission of moisture to the bearings, and depressible means upon each rail for partly rotating the bridge-piece.

5. A railroad-crossing comprising angularly-disposed rails, a rotatable bridge-piece interposed between the rails and having a flange-receiving groove adapted to register with either rail, friction-reducing bearings for the bridge-piece, a drain below the bridge-piece to prevent the admission of moisture to the bearings, means for locking the bridge-piece against movement, depressible means upon each rail for successively unlocking and partly rotating the bridge-piece.

6. A railroad-crossing comprising angularly-disposed rails, a bridge-piece interposed therebetween and adapted to partly rotate, said bridge-piece having a flange-receiving groove adapted to register with either rail, a base rotatable with the bridge-piece, draw-bars pivotally connected thereto and extending under the rails, and depressible actuating

devices upon the rails and engaging the draw-bars.

7. A railroad-crossing comprising angularly-disposed rails, a bridge-piece interposed
5 therebetween and adapted to partly rotate, said bridge-piece having a flange-receiving groove adapted to register with either rail, a base movable with the bridge-piece, latches thereon for holding the base-plate against
10 movement, draw-bars pivotally and slidably engaging the base-plate, arms upon the draw-

bars for engaging the latches, and depressible means upon the rails for actuating the draw-bars.

In testimony that I claim the foregoing as 15
my own I have hereto affixed my signature in the presence of two witnesses.

ROBERT A. ABBOTT.

Witnesses:

H. G. VAN COURT,
R. F. CHANNELL.