

No. 637,618.

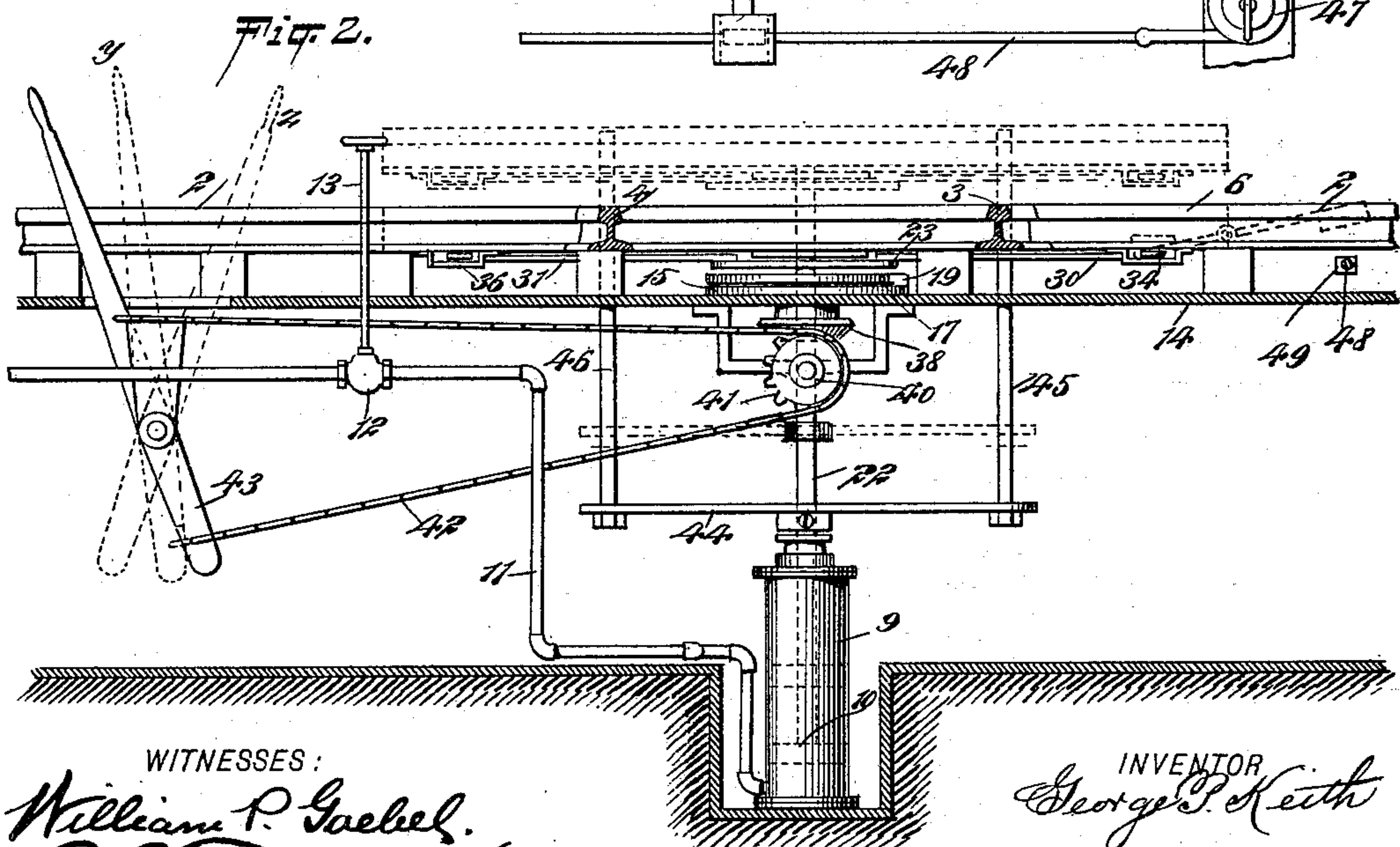
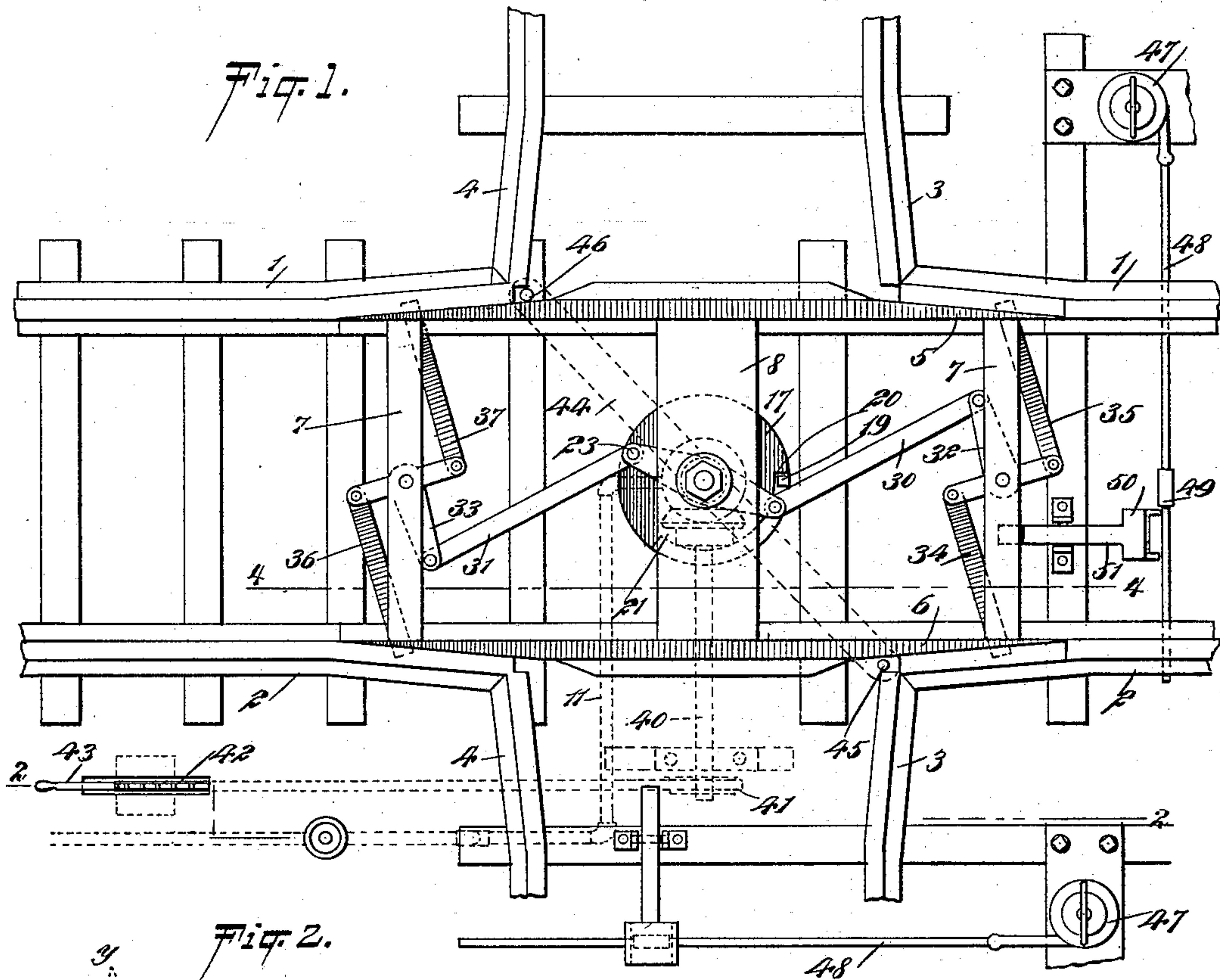
Patented Nov. 21, 1899.

G. P. KEITH.  
RAILWAY CROSSING.

(Application filed Apr. 8, 1899.)

(No Model.)

3 Sheets—Sheet 1.



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Fig. 3.

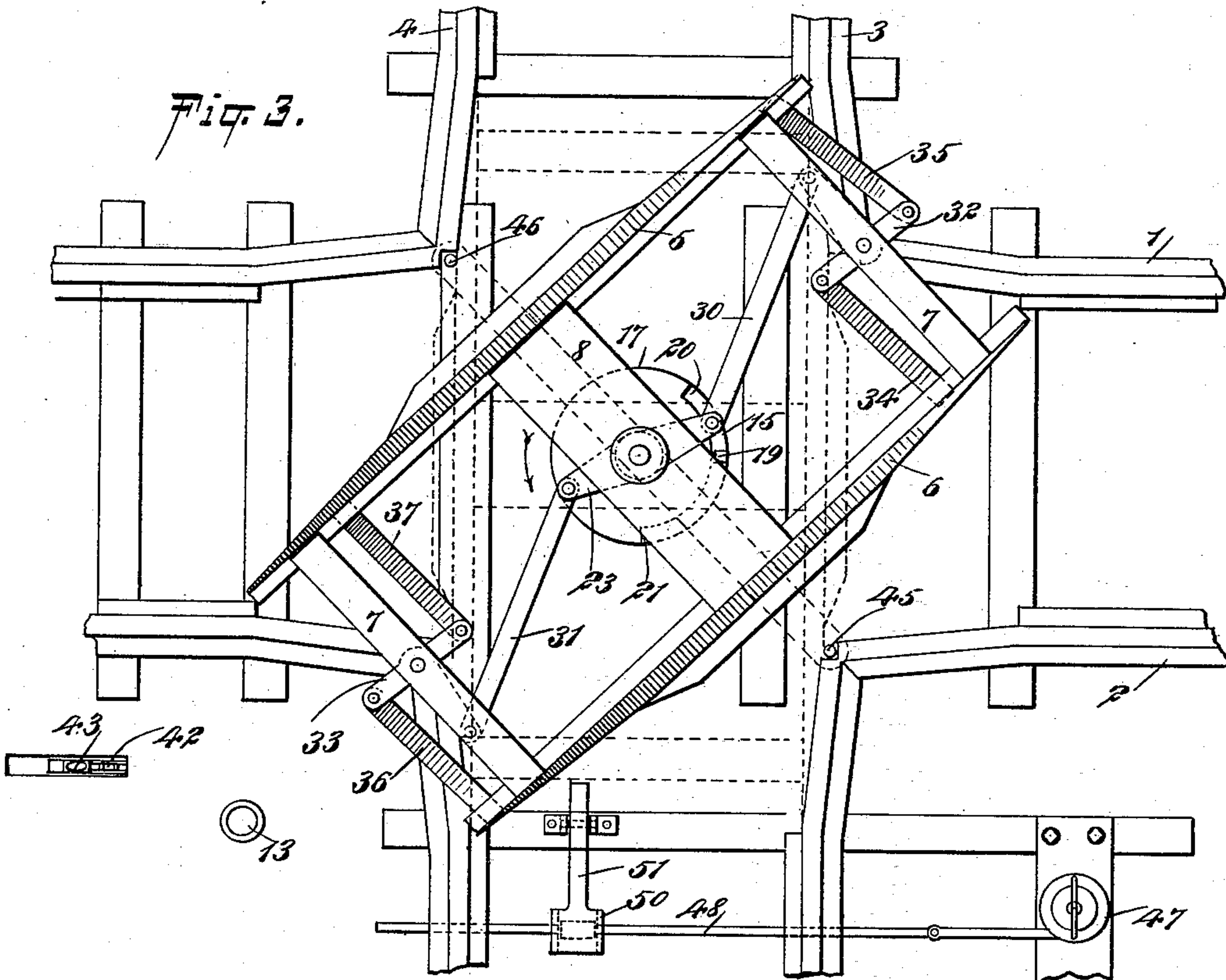


Fig. 4.

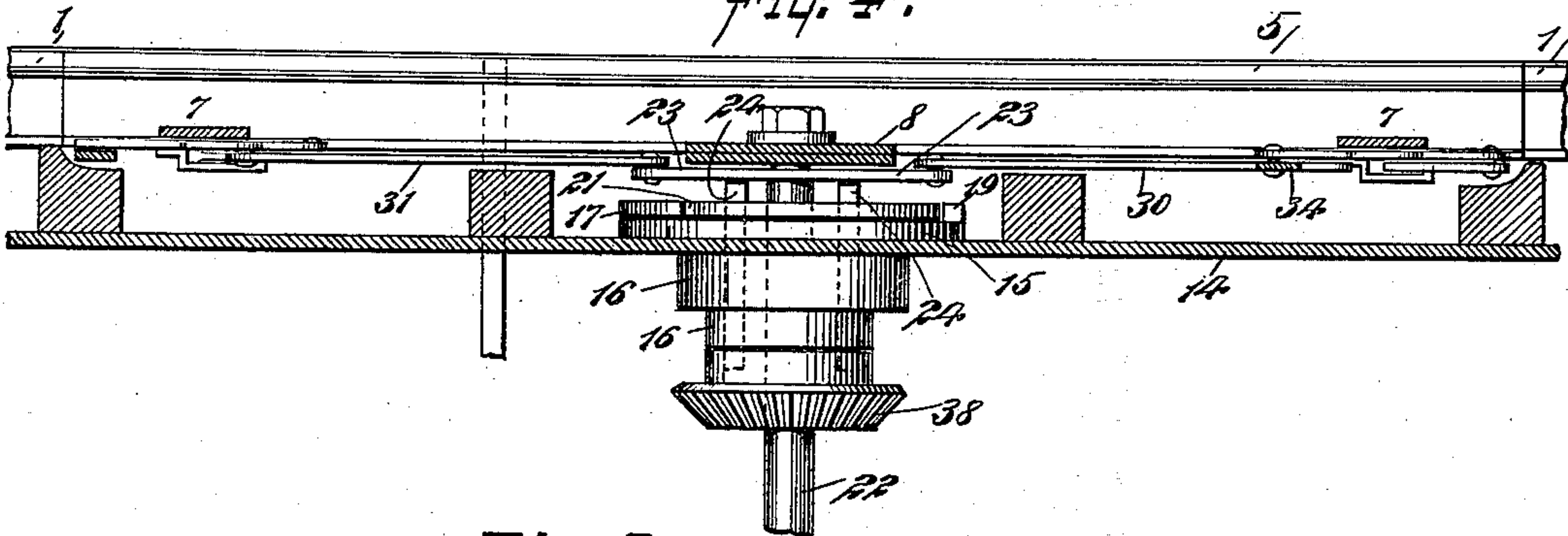


Fig. 5.

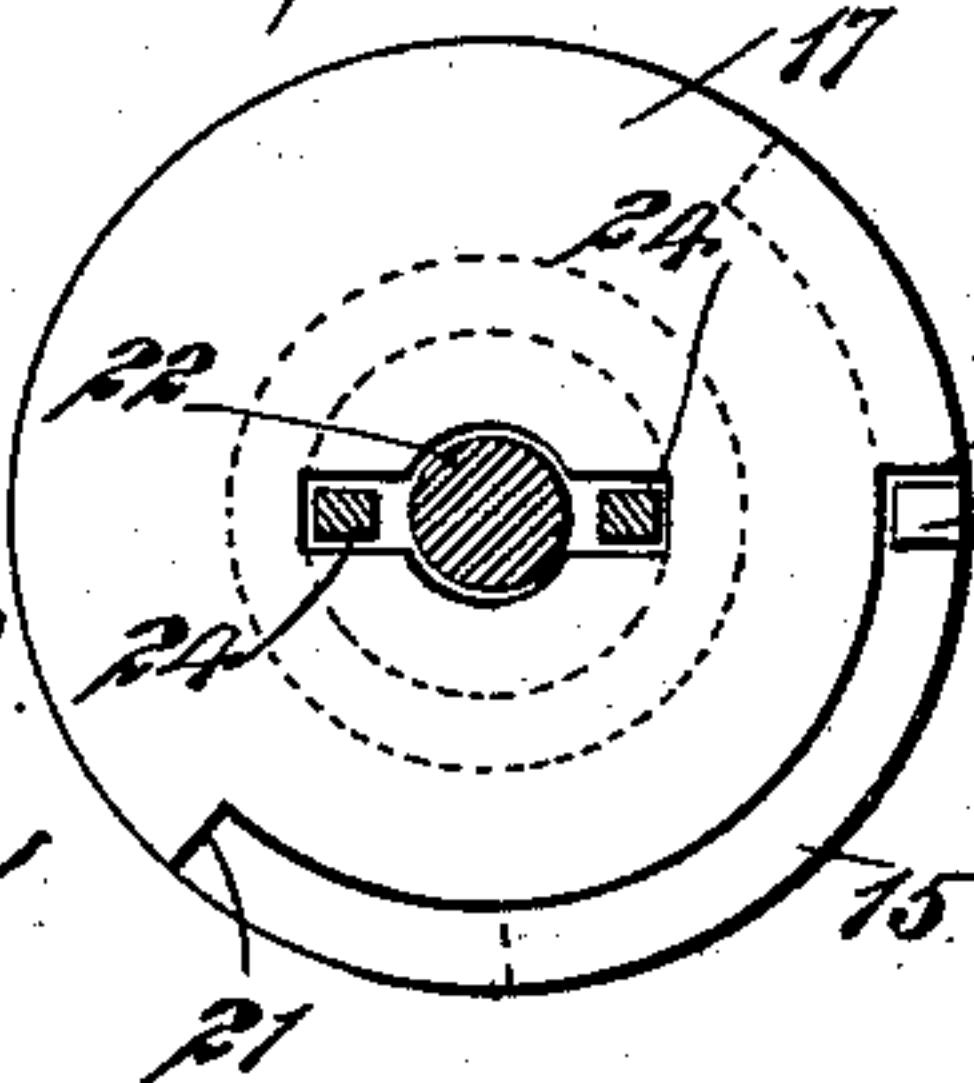
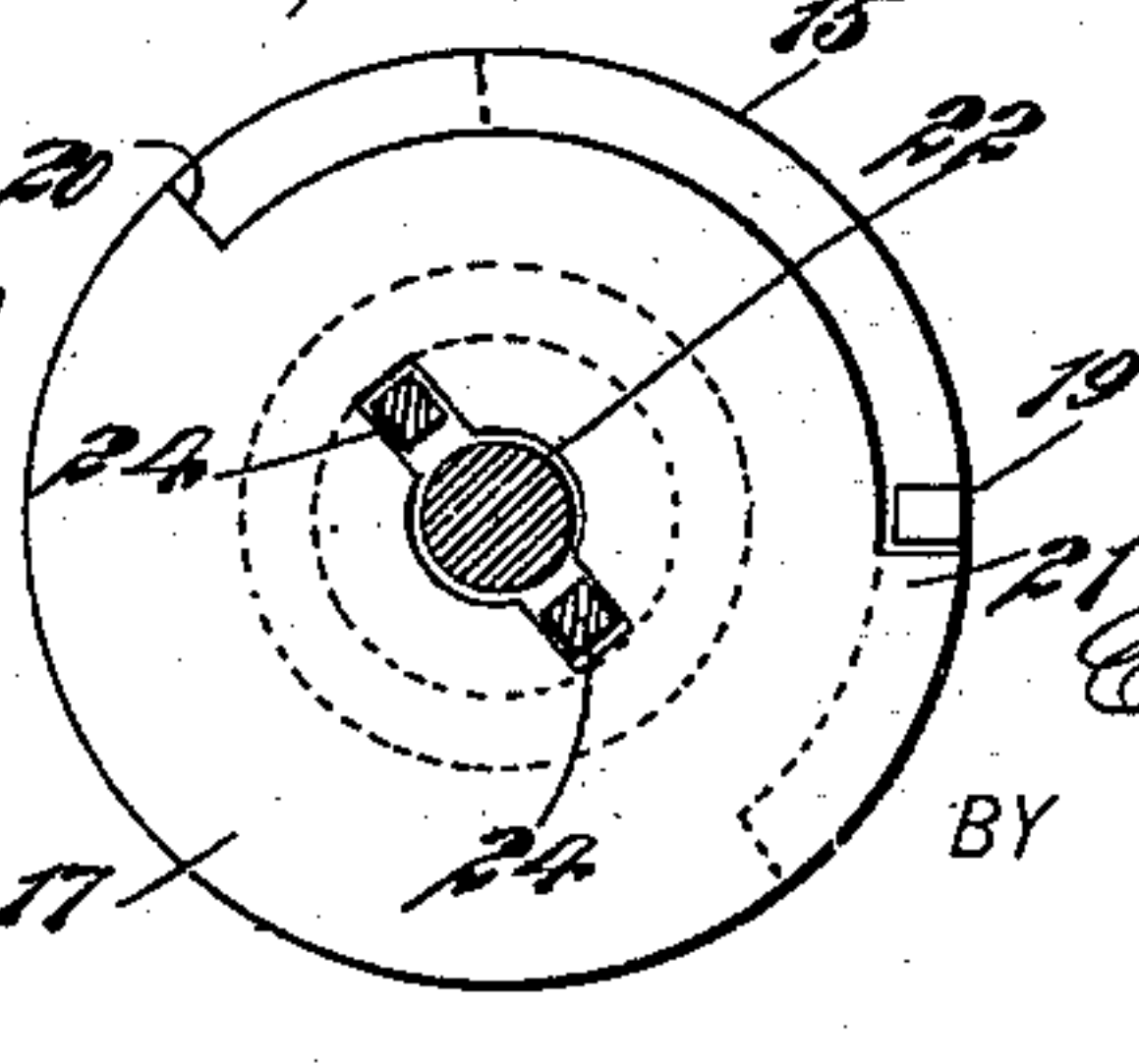


Fig. 6.



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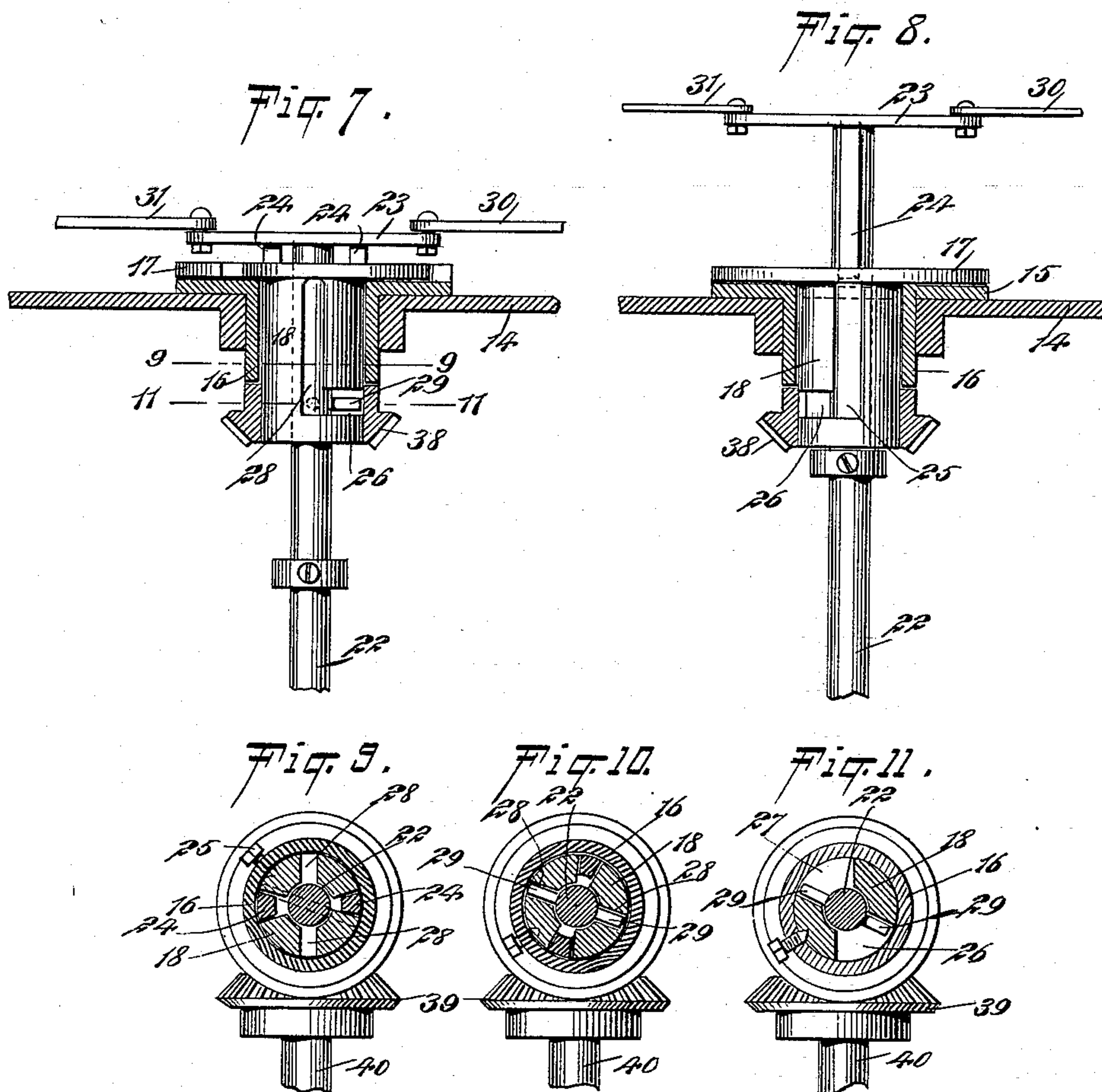
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# UNITED STATES PATENT OFFICE.

GEORGE PETER KEITH, OF ROCHESTER, INDIANA, ASSIGNOR TO HIMSELF  
AND CHARLES E. GOULD, OF SAME PLACE.

## RAILWAY-CROSSING.

SPECIFICATION forming part of Letters Patent No. 637,618, dated November 21, 1899.

Application filed April 8, 1899. Serial No. 712,266. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE PETER KEITH, of Rochester, in the county of Fulton and State of Indiana, have invented a new and  
5 Improved Railway-Crossing, of which the following is a full, clear, and exact description.

This invention relates to improvements in crossings for railways; and the object is to  
10 provide a crossing that may be easily and quickly operated to place the rails of either one of the two crossing tracks in continuity, so that a train may pass over the crossing without undue jarring.

15 I will describe a railway-crossing embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification,  
20 in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a top plan view of a crossing embodying my invention. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a plan view  
25 showing the crossing as partly turned. Fig. 4 is a section on the line 4 4 of Fig. 1. Fig. 5 is a plan view of a turn-table employed and showing the parts in one position. Fig. 6 is a similar view showing the parts in another  
30 position. Fig. 7 is a section showing the elevating and turning mechanism in lowered position. Fig. 8 is a similar view showing the elevating mechanism raised. Fig. 9 is a section on the line 9 9 of Fig. 7, showing the parts in the position indicated in Fig. 7. Fig.  
35 10 is a similar section, but showing the position of parts as indicated in Fig. 8; and Fig. 11 is a section on the line 11 11 of Fig. 7.

Referring to the drawings, 1 2 designate the  
40 rails of one track and 3 4 the rails of another track, which are here shown as arranged at right angles to the tracks 1 2; but it is to be understood that the mechanism hereinafter described will operate effectually whether the  
45 tracks be crossed at right angles or at any other angle. The crossing comprises two rails 5 6, which at the outer sides of their ends are tapered to engage against the horizontally-tapered ends of the main-track rails, so that  
50 the inner surfaces of the crossing rails when in position will be in line with the inner sur-

faces of the main rails with which they engage. The rails 5 and 6 are connected near the ends by cross-bars 7, and they are connected at the center by a cross-plate 8. 55

Arranged in a pit underneath the crossing is a cylinder 9, in which a piston 10 is operated either by compressed air or steam. I prefer, however, to use compressed air, which may be supplied to the cylinder below the piston  
60 through a pipe 11, leading from a suitable tank, in which the air is contained under pressure, and this pipe is provided with a controlling-valve 12, from which a stem 13 extends upward to be in easy reach of an op- 65  
erator at the side of the track.

Secured on a platform 14 beneath the crossing is a turn-table section 15, which is made in the form of a ring and has a tubular extension 16 projected through an opening in  
70 the platform 14. The upper section 17 of the turn-table has a tubular extension 18 projecting downward through the tubular portion 16 and is adapted to rotate therein. On the upper side of the turn-table section 75  
15 is a stop-lug 19, adapted to be engaged by either one of the shoulders 20 21, which form the end walls of a segmentally-cut-away portion of said section 17 of the turn-table.

From the piston 10 a piston-rod 22 extends  
80 upward through the tubular extension 18 and is designed to move vertically therein and also to have a rotary movement therein. The upper end of this piston-rod 22 is rigidly connected to the cross-plate 8. As here shown, 85  
it is extended through said cross-plate and has a nut on its upper end, which bears upon the top of the cross-plate. Secured to the piston-rod 22 just below the cross-plate 8 is a locking device controlling the plate 23, 90  
from which rods 24 extend downward and are adapted to move in channels 25, formed in the opposite sides of the tubular extension 18. Near its lower end the tubular extension 18 is provided with opposite segmental openings 95  
26 27, and at one end of each opening a vertical slot 28 is formed in the tubular extension 18, and in these slots 28 pins 29 on the rod 22 are designed to move when the said rod is forced upward, as will be hereinafter 100  
described.

From the plate 23 links 30 31 extend, re-



spectively, to connections with T-levers 32 33, mounted on the bars 7. Pivotal-ly connected to one member of the lever 32 is a locking-bolt 34, and extended from the other 5 member of said T member 32 is a locking-bolt 35, and extended from one member of the T-lever 33 is a locking-bolt 36, and from the other member of said lever extends a locking-bolt 37. These several locking-bolts 10 are designed to engage underneath the main rails when the crossing is in its operative position, so as to prevent any possible upward movement of the crossing when in such operative position.

15 Attached to the lower end of the tubular extension 18 is a bevel-gear 38, which meshes with a bevel-gear 39 on a horizontal shaft 40, which extends outward to the side of the track and within the pit, and to the outer end of 20 this shaft 40 is affixed a sprocket-wheel 41, with which a sprocket-chain 42 engages. The ends of this sprocket-chain are connected, respectively, above and below the pivotal point of an actuating-lever 43, which extends up 25 through the track-bed at the side of the track.

Mounted on the rod 22, but in which the rod is designed to turn, is a cross-head 44, which extends diagonally across the ends of the main rails. Extended upward from the 30 ends of this cross-head 44 and through openings in the platform 14 are stop-rods 45 46. These stop-rods are designed to be moved upward with the piston-rod to form stops for the crossing when it is turned into position. 35 In other words, they are designed to prevent the crossing from swinging too far by its momentum.

In operation when it is desired to shift the crossing from one track to the other the 40 lever 43 is first to be moved to a position indicated at *y* in Fig. 2. This movement of the lever will impart sufficient rotation to the shaft 40 to rotate the turn-table section 17 a sufficient distance to bring the pins 29 in line 45 with the slots 28. While the parts are in this position, the valve 12 is to be opened to allow the operating medium to pass into the cylinder 9 underneath the piston 10. The pressure of this medium operating upon the 50 piston 10 will raise the crossing to the position indicated in dotted lines in Fig. 2, and of course at this time the stops 45 and 46 will also be raised. It may be here stated that when the lever 43 is moved to its first position the locking-bolts will be drawn out from 55 underneath the rails of the main tracks. When the crossing is in its elevated position, by throwing the lever 43 to its extreme position, (indicated at *z* in Fig. 2,) the crossing will 60 be rotated to the proper position and will be stopped by the shoulder 21 coming in contact with the stop-lug 19. As before stated, the momentum of the crossing will be stopped by the parts 45 and 46. Now by allowing the 65 air or other medium to escape from the cylinder 9 by opening the valve 12 or otherwise the crossing will move downward by gravity

to an engagement with the main rails. Of course in turning the crossing in the opposite direction the lever 43 is to be operated 70 in a direction the reverse to that above described.

Arranged at the sides of the main tracks are signal devices 47, which may be of the semaphore type. Operating-rods 48 extend 75 from the signal devices across the main tracks and between the tracks. Each rod 48 is provided with a collar 49, adapted to be engaged with the depending ends of a locking-bolt 50 on a lever 51, mounted to swing on one of the 80 cross-ties of the track, and adapted to be engaged at its inner end with one of the cross-bars 7 of the crossing when said crossing is moved downward—that is, when the crossing is lowered to its operative position the bar 7 85 will engage with the lever 51 and move the fingers or depending ends of the locking-bolt 50 out of engagement with the ends of the collar 49, so that the rod 48 may be moved longitudinally to set the signal indicating that the 90 crossing is safe. The other signal device, however, will be held from movement by means of a locking-bolt engaging with the part 49 or its operating-rod. A suitable cover may be provided to protect the working parts 95 of the crossing from snow or rain.

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

1. In a railway-crossing, crossing-rails connected together, a cylinder under the crossing, a pressure-actuated piston in the cylinder, a piston-rod extended from the piston and having connection with the crossing so as to rotate therewith and means for rotating 100 the crossing, substantially as specified. 105

2. In a railway-crossing, crossing-rails connected together, an air-cylinder arranged in a pit beneath the crossing, a piston in said cylinder, a piston-rod extended from the piston 110 to a connection with the crossing, a turn-table comprising a fixed section and a rotary section, a stop on one of said sections for engaging with a shoulder on the other of said sections, a tubular extension on said rotary 115 section and through which the piston-rod passes, a pin extended from the piston-rod and adapted to move in a vertical slot formed in said extension, a gear-wheel on said extension, a horizontal shaft having a gear connection with the gear-wheel, and means for rotating the horizontal shaft, substantially as specified. 120

3. In a railway-crossing, a crossing consisting of two rails connected together, a turn- 125 table consisting of a fixed section and a rotary section, a cylindrical extension on the rotary section extended through the fixed section, a rod extended through said cylindrical extension, a pin on said rod adapted for movement 130 in a slot formed in said extension, pressure-actuated means for raising the rod and crossing, a bevel-gear on the lower end of said cylindrical extension, a horizontal shaft having



a gear engagement with said first-named gear, a lever and operative connection between said lever and the horizontal shaft, substantially as specified.

5 4. In a railway-crossing, a crossing consisting of two rails secured together, a turn-table consisting of a fixed section and a rotary section, stop devices on the two sections, an air-pressure cylinder arranged beneath the crossing, a piston-rod having connection with the  
10 piston in the cylinder, the said piston-rod passing through the rotary section of the turn-table and having connection with the crossing, means for rotating the rotary section of the  
15 turn-table, and means for causing the piston-rod and crossing to rotate the said rotary section of the turn-table, substantially as specified.

5. In a railway-crossing, two crossing-rails  
20 secured together, locking-bars carried by the crossing and adapted for engagement underneath the rails of the main tracks, an air-pres-

sure-actuated rod on which the crossing is mounted, connections between the locking-bolts and said rod, whereby the bolts are  
25 moved to their releasing position upon a rotary movement of the rod, and means for rotating said rod to rotatively swing the crossing, substantially as specified.

6. In a railway-crossing, a crossing consist- 30  
ing of two rails connected together, means for imparting vertical movement to said crossing, means for imparting a rotary swinging motion to said crossing, a signal arranged in the side  
35 of the main track, a signal-operating rod extending across the track, and a locking device for said rod, adapted to be moved to its releasing position by the crossing as it is lowered into operative position, substantially as specified.

GEORGE PETER KEITH.

Witnesses:

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