

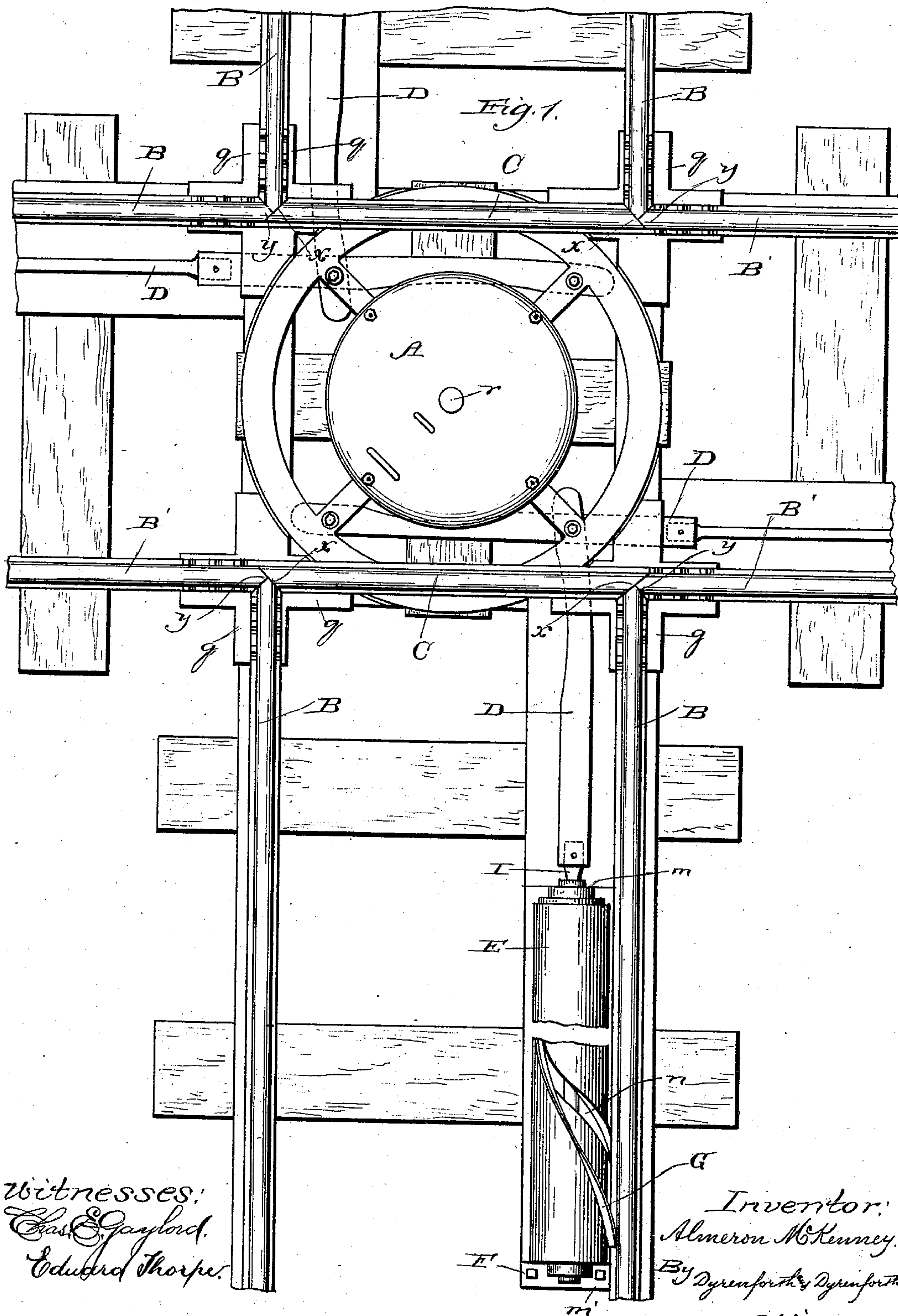
(No Model.)

3 Sheets—Sheet 1.

A. McKENNEY.  
RAILROAD CROSSING.

No. 372,229.

Patented Oct. 25, 1887.



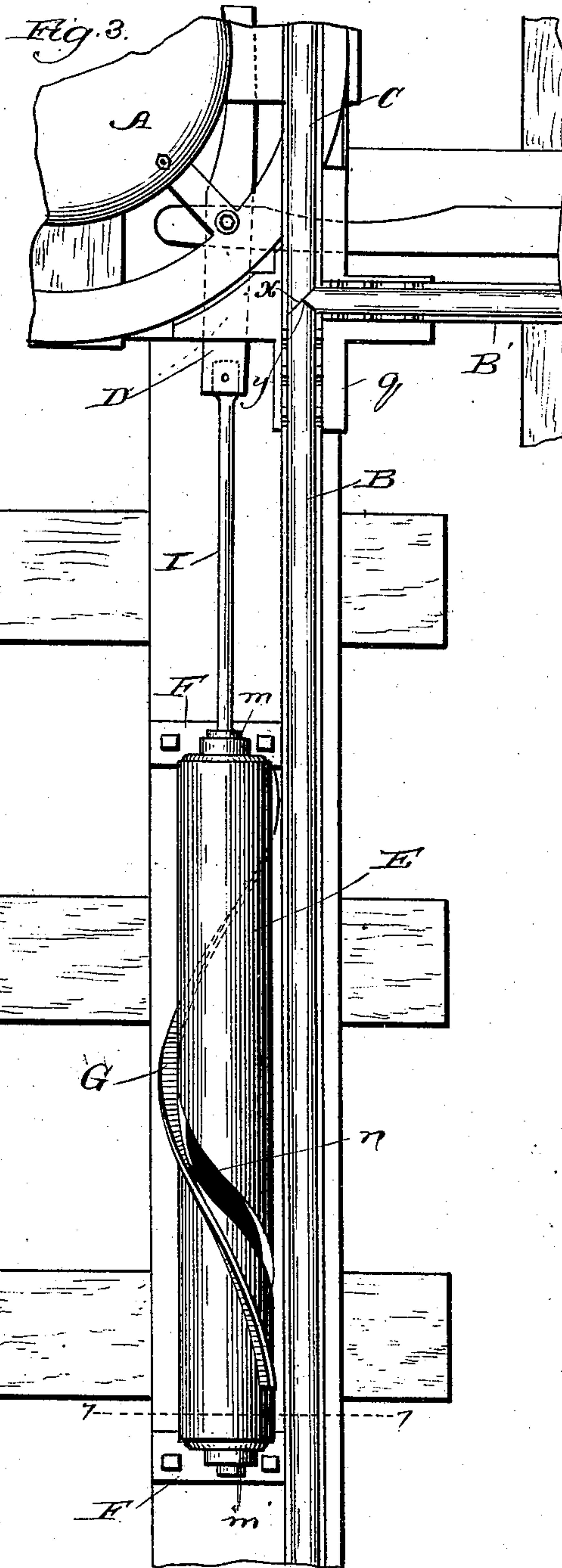
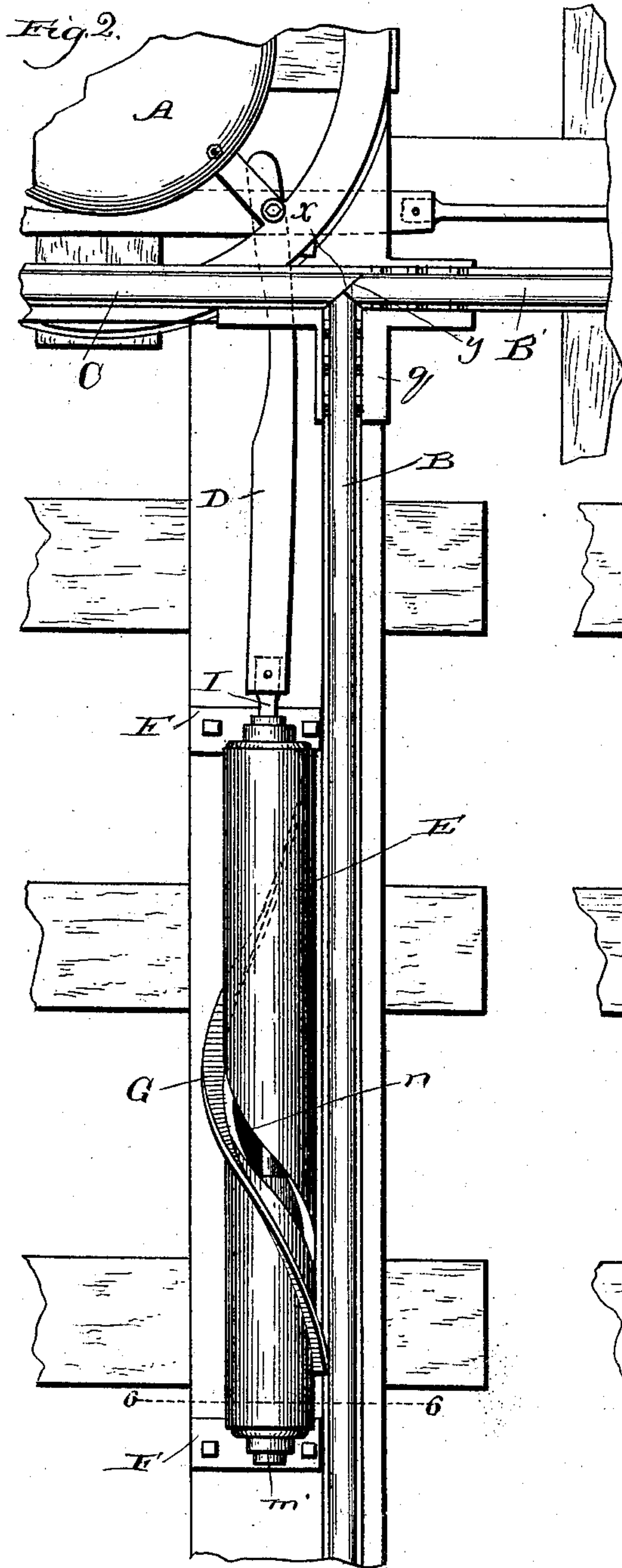
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Inventor:  
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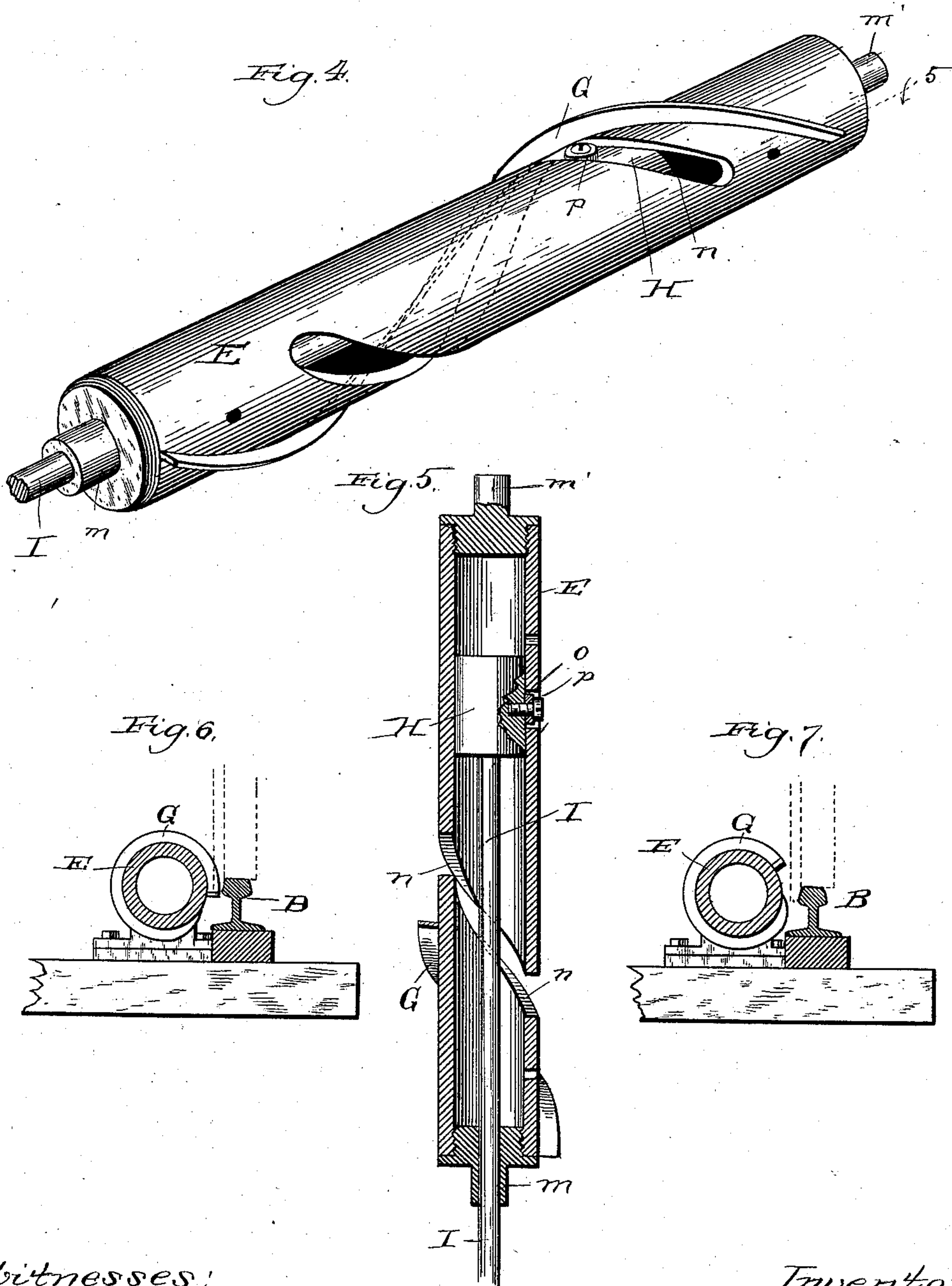
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# UNITED STATES PATENT OFFICE.

ALMERON McKENNEY, OF ENGLEWOOD, ILLINOIS.

## RAILROAD-CROSSING.

SPECIFICATION forming part of Letters Patent No. 372,229, dated October 25, 1887.

Application filed March 22, 1887. Serial No. 231,970. (No model.)

*To all whom it may concern:*

Be it known that I, ALMERON McKENNEY, a citizen of the United States, residing at Englewood, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Railroad-Crossings; and I hereby declare the following to be a full, clear, and exact description of the same.

My improvement relates to the class of railroad-crossings having one track, which, by being oscillated horizontally, after the manner of a turn-table, to different angles, serves to form a continuation of any one of several intersecting tracks that the circumstances call for.

The features of novelty in my present improvement relate to the construction of the rails of the oscillatory crossing-track, to the means immediately connected with the oscillatory table for actuating it, and to mechanism operated automatically by a wheel of a train approaching from either direction to bring the crossing-track, when out of position, in line with the track on which the train is running, but not to disturb it if the crossing-track be in the right position for the passage of the approaching train.

The most injurious effects to the rolling-stock and danger to human life in the use of crossings, generally, are produced by the pounding over the ends of the rails having spaces between them, the small wheels giving heavy blows as they jump from end to end of the adjacent rails, battering down the ends and tending to fracture the wheels or render them liable, by cracking, to subsequent fracture. It is my object to overcome this difficulty by providing a bevel toward the end of each rail of the oscillatory crossing-track and a corresponding bevel toward the ends of the main track, whereby the rolling-stock can move over the joints smoothly. While a crossing of the class named and provided with my improvements may be actuated by hand, I prefer that it shall be actuated automatically by a forward wheel of the locomotive or car; and to this end I provide peculiar mechanism connected with the oscillatory crossing for accomplishing the purpose, in the form of a spirally-flanged rotary hollow cylinder containing an automatically-reciprocating extension bar or piston. The flanged-cylinder mechanism last referred to affords an appa-

ratus for utilizing the power of moving trains for various purposes other than that of automatically operating the oscillatory crossing; hence I do not limit the same to such purpose. Among other purposes for which the actuating mechanism may be operated by the power of a moving train is that of pumping water or that of opening and closing gates or operating signals, the object thereof being, in whatever connection it shall be used, to provide a primary medium for transmitting the power of a passing train to such objects as it may be desired ultimately to act upon, and when the primary medium has once been obtained the subsequent transmission of its power to other objects may generally be effected by known mechanisms involving in their construction merely mechanical skill.

My invention consists in the beveled construction of the ends of the oscillatory crossing-rails and corresponding form of the adjacent ends of the rails of the main track.

My invention further consists in various details of construction and combinations of parts, all as hereinafter more fully set forth.

In the drawings, Figure 1 is a plan view of my improved railway-crossing with the automatic actuating device shown only in part; Fig. 2, a similar view of the same showing the automatic actuating device, but not the crossing, in full; Fig. 3, a similar view of the same showing the piston and rod drawn forward to their full limit; Fig. 4, a detached view in perspective of the flanged cylinder and its appurtenances; Fig. 5, a longitudinal section of the cylinder and appurtenances taken on the line 5 of Fig. 4 and viewed in the direction of the arrow; Fig. 6, a transverse section taken in the line 6 6 of Fig. 2 and viewed in the direction of the arrows, and Fig. 7 a transverse section taken in the line 7 7 of Fig. 3 and viewed in the direction of the arrows.

An oscillatory table, A, is mounted upon a central pivot, *r*, at the intersection of the tracks B and B', and upon opposite sides of this table two rail-sections, C, are firmly secured, each as long as the width of the crossing and beveled on its extremities, as shown at *x*, whereby they may be caused to form a continuation of any one of the intersecting main tracks B B', correspondingly beveled at the extremities of the rails, as shown at *y*,



by turning the table to the proper position. Combined with the oscillatory table and rail-sections are several bars, D, each pivoted to the table near the edge thereof and extending therefrom along a rail of one of the main tracks. Each bar D is pivoted to the table in such position that it extends farther back along its rail when the rails of the crossing lie across that track, when, if the bar is pushed forward in the direction of the table, it turns the latter around one-fourth of a revolution to bring the crossing-rails in line with the track along which such pushing-bar extends. At the terminations of the main rails—at the crossing, where they are beveled, as aforesaid, and meet at right angles, as shown—they are firmly braced together by means of fish plates *q*, the one on the outside being bent at an angle to extend along the two rails.

As I do not claim as my invention the oscillatory turn-table, which is old, in crossings of the class to which my improvement relates, further description of its construction is not required than to say that a substantial foundation must be provided to support it.

E is a hollow cylinder lying parallel with the rail and mounted, by means of journals, in bearings F, firmly secured on the road-bed, whereby it is free to revolve.

G is a helical flange upon the exterior of the cylinder, preferably V-shaped, with which the flange of a passing wheel engages and upon which it travels, thus causing the cylinder to revolve.

H is a piston-head fitting closely within the cylinder E, and provided on one side with a friction-roller, *p*, secured to it by means of a screw or bolt, *o*, or in any other convenient manner, which friction-roller enters a helical slot, *n*, in the cylinder, serving as a guide.

Of course an internal groove would serve the same purpose as the slot; and, if desired, more than one helical guide may be formed.

I is a piston-rod rigidly fixed to the piston-head and extending out through one of the journals, *m*, which is made hollow for the purpose. The other journal, *m'*, may be solid.

The operation of my device will be understood from the following: The end of the piston-rod I is jointed to the bar D in such manner that it cannot turn with the cylinder E. If, now, a train approaches the crossing along, say, the lower track (shown in Fig. 1 of the drawings,) the flange of the foremost wheel, upon reaching the cylinder E, engages with the flange G, and in its progress along the same turns the cylinder. The piston-head H being secured against rotation, the turning of the cylinder incidentally causes the friction-roller *p* to travel along the helical slot *n*, thus driving the piston-rod forward, and with it the bar D, thus turning the platform A a quarter of a revolution and causing the rail-sections C to form continuations of the other track.

Of course the adjustment may be such as to adapt the crossing to tracks intersecting at acute angles as well as to those intersecting at

right angles, as shown in the drawings, and my improved flanged-cylinder mechanism may be also adapted to the operation of switches. A cylinder, E, and its connections with the turn-table being provided in proper position along a rail of each main track, a movement of any piston-rod produces a corresponding relative movement upon the piston and rod on the oppositeside of the crossing on the same track and a contrary relative movement upon the pistons and rods on the other tracks. Thus when the piston-rods are forced out by the passage of a train along the obstructed track, thereby turning the platform to remove the obstruction, they are by the same act forced into the cylinders upon the other tracks and this forcing in serves to turn the cylinder back to the position in which the wheel of a passing train will engage with the helical flange.

It is of course necessary to make provision whereby the wheels of a train passing along a track with which the crossing-rails C are already in line shall not engage the helical flange G, but shall only engage the flange when the crossing-rails are in a position to obstruct the track. This is accomplished by having the helical flange G fall short of a complete circuit of the cylinder. The effect of such construction will be clear from an inspection of Figs. 6 and 7 of the drawings. Fig. 6 shows the position of the flange when the cylinder is in the position represented in Figs. 1 and 2—that is to say, when the track along which it lies is obstructed by the crossing-rail. A wheel meeting the flange and passing along it leaves it in the position represented in Fig. 7 of the drawings, which is also that shown in Fig. 3, when, as will be seen, trains may pass either way without encountering the flange. The act of turning the cylinders on one track from the position shown in Figs. 1, 2, and 6 to that shown in Figs. 3 and 7, incidentally, by pushing in the non-rotary piston-rods of the cylinder on the other track, turns the latter, through the medium of the friction-roller and slot, from the position represented in Figs. 3 and 7 to that represented in Figs. 1, 2, and 6. Thus whenever the rail-sections of the crossing are in a position to obstruct a track the flanges of the cylinders on that track are in a position to be acted on by the wheels of an approaching train to turn the rail-sections out of the way, while, on the other hand, whenever the rail-sections of the crossing are in line with the track, the flanges of the cylinder on that track are in such a position as to be cleared by the wheels of a passing train.

As represented in the drawings, the cylinder is shown as placed upon the inside of the rail, whereby the flange G is acted upon by the flange of the wheel. It is obvious, however, that it may be placed upon the outside of the rail, whereby the flange shall be acted upon by the tread of the wheel.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a railway-crossing, the combination of



an oscillatory platform, A, and two rail-sections, C, secured to the said platform on opposite sides of the center and beveled at their extremities, and converging main tracks beveled at their extremities to correspond with the bevels on the said rail-sections, substantially as and for the purpose set forth.

2. In a railway crossing, the combination of an oscillatory platform, A, two rail-sections, C, secured to the said platform on opposite sides of the center and beveled at their extremities, converging main tracks beveled at their extremities to correspond with the bevels in the said rail-sections, and a bar, D, pivoted to the platform near its edge, to extend therefrom along a rail of a main track, substantially as and for the purpose set forth.

3. The combination, with a rail of a railway-track, of a rotary hollow cylinder mounted in bearings and lying parallel with the rail and provided with an exterior helical flange and an interior helical guide, a piston-head within the cylinder provided with a projection entering the guide, and a piston-rod rigidly fixed to the piston and projecting through one of the journals of the cylinder, substantially as and for the purpose set forth.

4. In a railway-crossing, the combination, with an oscillatory platform, A, having two rail-sections, C, secured thereon on opposite sides of the center, of bars D, pivoted to the platform near its edge, to extend therefrom along

the rails of the main tracks, rotating hollow cylinders mounted in bearings and lying parallel with the said rails and provided with exterior helical flanges and interior helical guides, and piston-heads within the cylinders provided with projections entering the guides, and piston-rods rigidly fixed to the pistons and projecting through journals of the cylinder and jointed to the adjacent ends of the bars D, substantially as and for the purpose set forth.

5. In a railway-crossing, the combination of an oscillatory platform, A, two rail-sections, C, secured to the platform on opposite sides of the center and beveled at their extremities, converging main tracks beveled at their extremities to correspond with the bevels on the said rail-sections, bars D, pivoted to the platform near its edge, to extend therefrom along the rails of the main tracks, rotating hollow cylinders mounted in bearings and lying parallel with the said rails and provided with exterior helical flanges and interior helical guides, and piston-heads within the cylinder provided with projections entering the guides, and piston-rods rigidly fixed to the pistons and projecting through journals of the cylinders and jointed to the adjacent ends of the bars D, substantially as and for the purpose set forth.

ALMERON MCKENNEY.

In presence of—

FRANK L. DOUGLAS,  
J. W. DYRENFORTH.