

No. 791,026.

PATENTED MAY 30, 1905.

M. D. HANLON.
APPARATUS FOR MOVING SWITCH RAILS.

APPLICATION FILED FEB. 17, 1905.

2 SHEETS—SHEET 1.

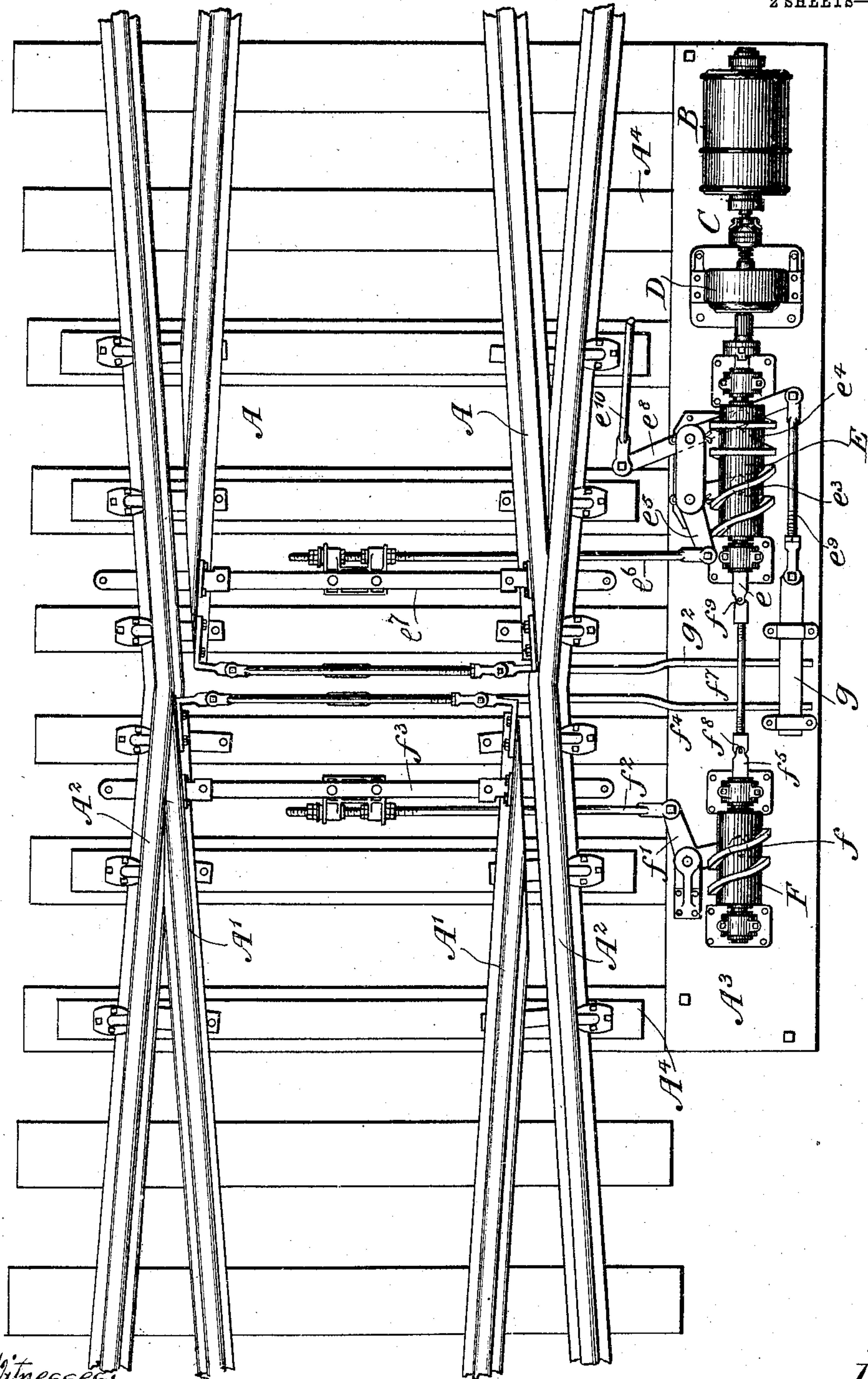


Fig. 1.

Witnesses:
J. A. Rennie

Inventor:
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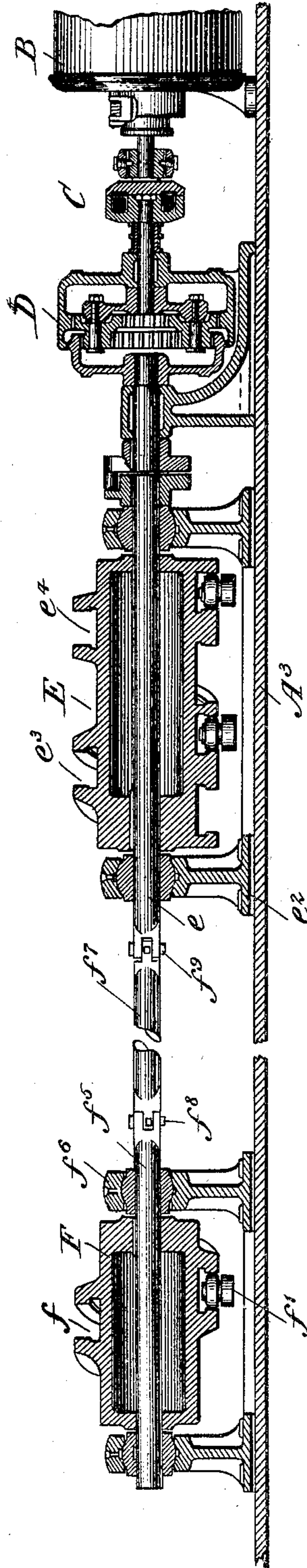
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

MARQUIS D. HANLON, OF WILKINSBURG, PENNSYLVANIA, ASSIGNOR TO
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APPARATUS FOR MOVING SWITCH-RAILS.

SPECIFICATION forming part of Letters Patent No. 791,026, dated May 30, 1905.

Application filed February 17, 1905. Serial No. 246,047.

To all whom it may concern:

Be it known that I, MARQUIS D. HANLON, a citizen of the United States, residing at Wilkinsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Moving Switch-Rails, of which the following is a specification.

My invention relates to apparatus for operating double-point movable frogs, and particularly to that class of apparatus which comprises an electric motor. I will describe a double-point-movable-frog-operating apparatus embodying my invention and then point out the novel features thereof in claims.

In the accompanying drawings, Figure 1 is a top plan view of a double-point movable frog and operating apparatus embodying my invention. Fig. 2 is a view partly in elevation and partly in vertical longitudinal section.

Similar characters of reference designate corresponding parts in both figures.

A A indicate one pair of points, and A' A' the other pair. These pairs of points are oppositely facing and adapted to cooperate with the bent rails A² A² to form two intersecting tracks, only one of which can be continuous at the crossing at one time. Adjacent to these points is an operating apparatus by means of which their positions are changed in order to close one track and open the other, as desired. This apparatus, as shown in the drawings, comprises an electric motor B, a clutch mechanism C, a speed-reducing arrangement D, and two cam-cylinders E and F, by means of which the locking and unlocking of the points, the movement of the points, and the movement of the usual detector bar or bars are secured. No detector-bar is shown, it being deemed not necessary, as it is well known in the art. The detector bar or bars which are used in connection with the points are preferably and as shown operated from the cam-cylinder nearest the motor. These several parts are mounted on a base-plate A³, suitably secured to the ties A⁴. The parts B, C, D, and E are of substantially the same con-

struction and operate in the same way as the similar parts described in my prior application upon which Patent No. 762,997, dated June 21, 1904, was granted, and no detailed description thereof is deemed necessary herein. The cam-cylinder E is provided with two cam-grooves e³ and e⁴, which respectively operate the levers e⁵ and e⁸. The lever e⁵ is connected by a rod e⁶ to the bridle-rod e⁷, joined to the points A A. The lever e⁸ is connected by a rod e⁹ with the locking means and by a rod e¹⁰ with a detector-bar. (Not shown.) Other detector-bars adjacent the switch-points may be connected with the lever e⁸, or additional levers and connections may be provided for other detector-bars. The locking means is indicated by g and may be similar to that illustrated in the said patent or of any other preferred construction, and g² is a locking-bar connected to both points A.

So far as described the operating apparatus will move and lock the points A A and operate the detector-bar in a manner similar to that of the apparatus described in the said patent with respect to the switch-rail A' therein referred to.

In the present invention it is, however, desirable to move the points A' A' simultaneously with the points A A and in an opposite direction, and it is of course also necessary to lock the points A' A'. To accomplish these two results, I prefer to use the same locking means g to lock both pairs of points and to employ another cam-cylinder F, having one cam-groove f only, similar to the cam-groove e³ on the cylinder E.

f' indicates a bell-crank lever similar to the lever e⁵, but oppositely disposed, which is operated by the cam-groove f, and this lever is connected by a rod f² to the bridle-rod f³, joined to the points A' A'.

f⁴ indicates a locking-rod suitably secured to both points A' A' and adapted to cooperate with the locking means g.

It is preferable to rotate the cylinder F simultaneously with the cylinder E and by means of the same motor, although this is not absolutely essential, as a separate motor might be

employed to operate the cylinder F independently. As shown, however, the shaft e of the cylinder E is extended beyond the standard e^2 , and the shaft f^5 of the cylinder F is extended beyond its supporting-standard f^6 , and a coupling f^7 is connected to the opposing ends of the shafts e and f^5 by universal joints f^8 and f^9 . It is obvious a single integral shaft might be used for both cylinders or that only one universal joint might be employed between the two shafts; but the construction illustrated is deemed desirable, as couplings of different lengths may be utilized to suit different conditions, for the cylinders E and F may not always be placed the same distance apart.

It will be obvious from the foregoing description, taken in connection with the drawings, that when the motor B is operated both cylinders will rotate simultaneously and that both pairs of points will be moved simultaneously, but in opposite directions, and that the locking means for both pairs of points will be operated by the cylinder E.

What I claim as my invention is—

1. In an apparatus for moving two pairs of points, the combination of two cam-cylinders for moving the respective pairs of points, locking means common to both pairs of points operated by one of said cylinders only, and means for rotating the cylinders.

2. In an apparatus for moving two pairs of points, the combination of two cam-cylinders for moving the respective pairs of points, locking means common to both pairs of points operated by one of said cylinders only, and an electric motor for rotating the cylinders.

3. In an apparatus for moving two pairs of points, the combination of two cam-cylinders for moving the respective pairs of points, locking means common to both pairs of points operated by one of said cylinders only, an electric motor for rotating the cylinders, and speed-reducing mechanism between the motor and the cylinders.

4. In an apparatus for moving two pairs of points, the combination of two cam-cylinders for moving the respective pairs of points, locking means common to both pairs of points operated by one of said cylinders only, an electric motor for rotating said cylinders, a speed-reducing gear between the motor and cylinders, and an electric clutch between the motor and speed-reducing gear.

5. In an apparatus for moving two pairs of points, the combination of locking means common to both pairs of points, two cam-cylinders, one having a cam-groove for operating

one pair of points, and the other two cam-grooves one for operating said locking means and the other for operating the other pair of points, and an electric motor for rotating the cylinders.

6. In an apparatus for moving two pairs of points, the combination of locking means common to both pairs of points, a detector-bar connection, two cam-cylinders, one having a cam-groove for operating one pair of points, and the other having two cam-grooves, one for operating the locking means and the detector-bar connection and the other, for operating the other pair of points, and an electric motor for rotating the cylinders.

7. In an apparatus for moving two pairs of points, the combination of two cam-cylinders for moving the respective pairs of points, a shaft having a universal joint for connecting the two cylinders, and an electric motor for rotating both cylinders simultaneously.

8. In an apparatus for moving two pairs of points, the combination of two cam-cylinders for moving the respective pairs of points, a coupling having a universal-joint connection with the shafts of both cylinders, and an electric motor for rotating both cylinders together.

9. In an apparatus for moving two pairs of points, the combination of two cam-cylinders and connections for moving the pairs of points in opposite directions, a locking means common to both pairs of points operated by one of the cylinders only, and an electric motor for rotating the cylinders.

10. In an apparatus for moving two pairs of points and the necessary detector bar or bars, the combination of two cam-cylinders, one for moving one pair of points and the other for moving the other pair of points and the detector bar or bars, and means for rotating both cam-cylinders and located nearest the cam-cylinder for moving the detector bar or bars.

11. In an apparatus for moving two pairs of points and the necessary detector bar or bars, the combination of two cam-cylinders, one for moving one of the pairs of points and the other for moving the other pair of points and the detector bar or bars, and means for rotating both cam-cylinders.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MARQUIS D. HANLON.

Witnesses:

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