No. 864,963. PATENTED SEPT. 3, 1907.

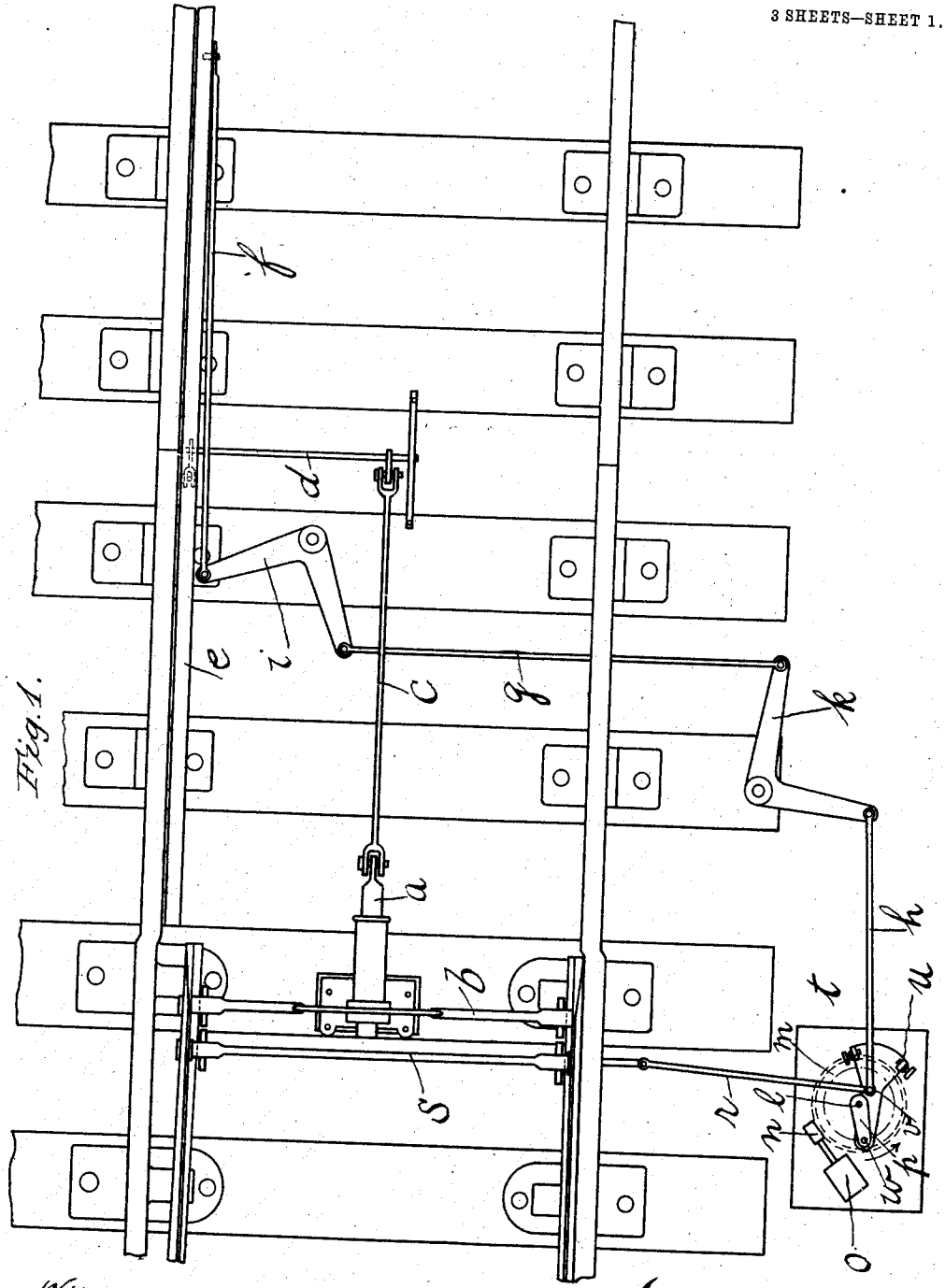
L. DE M. G. FERREIRA.

MECHANISM FOR MOVING AND LOCKING RAILWAY OR LIKE POINTS.

APPLICATION FILED MAY 16, 1907.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses
L. Tomsk.
H. M. Ryder

Inventor
Luiz de Moraes Gomes Ferreira
by
Atty

THE NORRIS PETERS CO., WASHINGTON, D. C.

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3 SHEETS—SHEET 2.

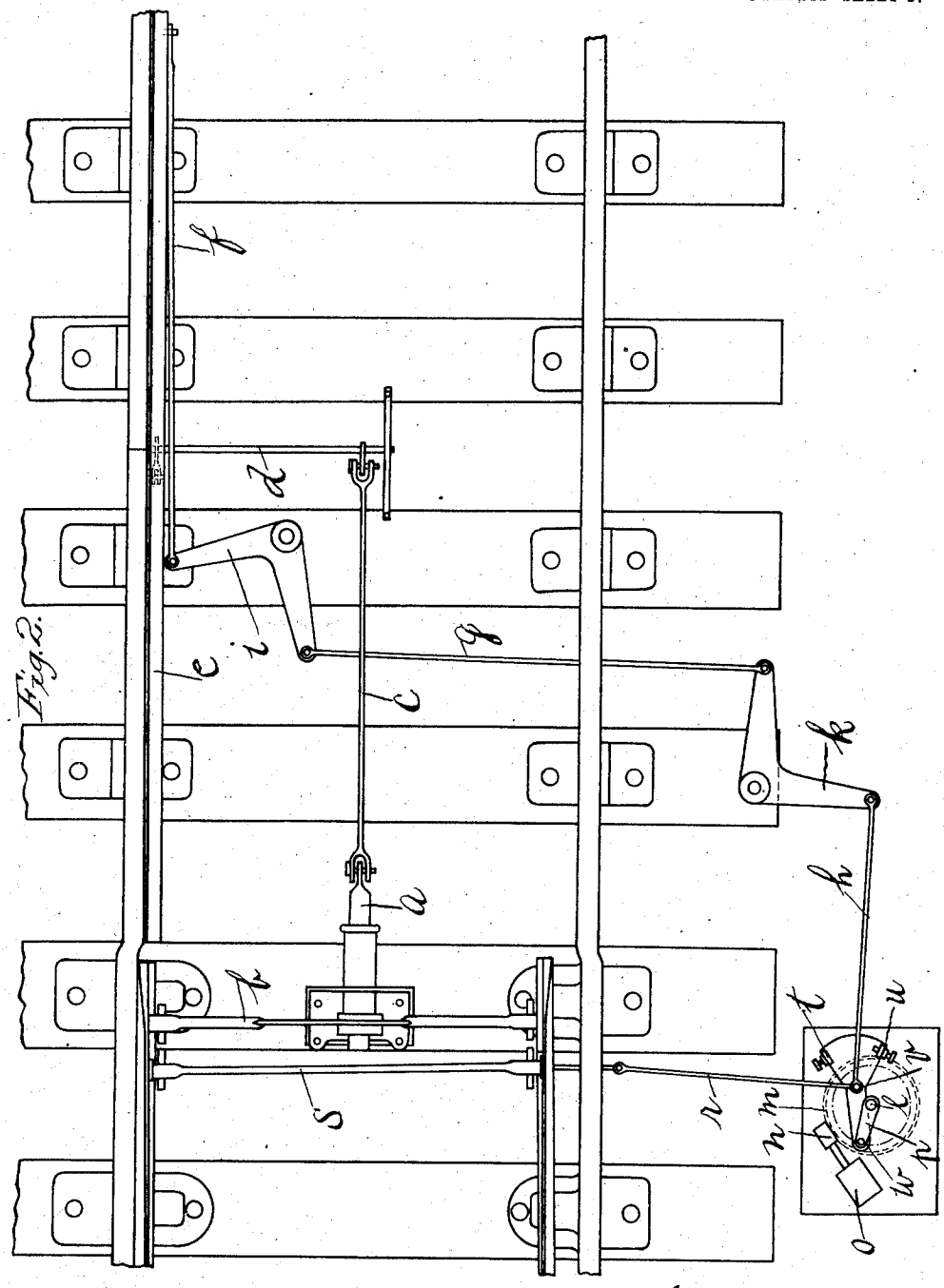


Fig. 2.

Witnesses
R. Tornade.
J. M. Ryan

Inventor
Luiz de Moraes Gomes Ferreira
by
Atty.

THE NORRIS PETERS CO., WASHINGTON, D. C.

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3 SHEETS—SHEET 3.

Fig 3.

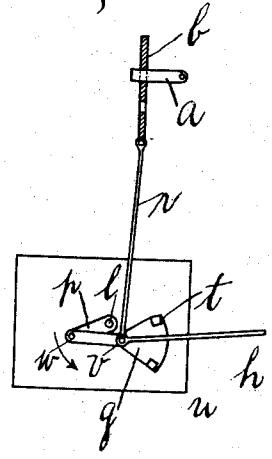


Fig 5

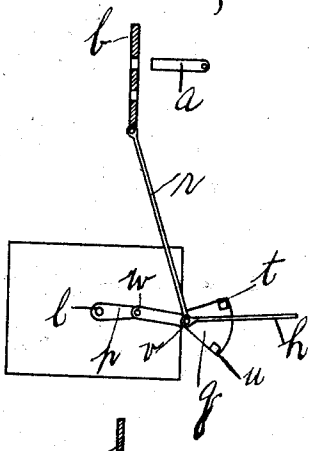


Fig 4

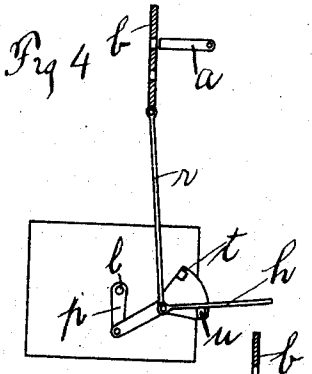


Fig 6

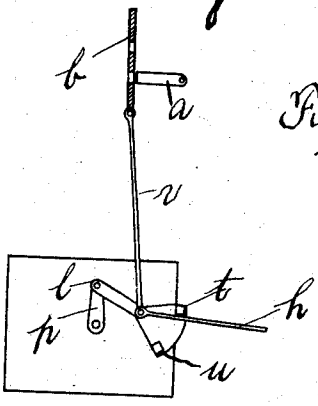
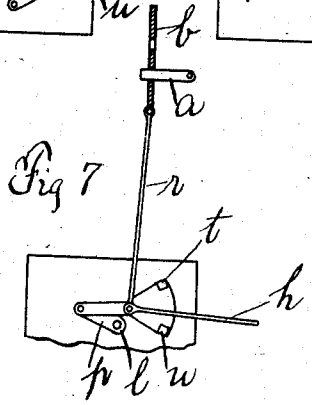


Fig 7



Witnesses
R. F. Tomick.
J. M. Ryan

Inventor
Luiz de Moraes Gomes Ferreira
by Thomson & Thomson
Attys

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LUIS DE MORAES GOMES FERREIRA, OF LONDON, ENGLAND, ASSIGNOR TO SIEMENS & HALSKE, A. G., OF BERLIN, GERMANY, A CORPORATION OF GERMANY.

MECHANISM FOR MOVING AND LOCKING RAILWAY OR LIKE POINTS.

No. 864,963. Specification of Letters Patent. Patented Sept. 3, 1907.

Application filed May 16, 1907. Serial No. 373,897.

To all whom it may concern:

Be it known that I, LUIS DE MORAES GOMES FERREIRA, a subject of the King of Great Britain and Ireland, and resident of London, S. W., England, have invented a certain new and useful Improvement in Mechanism for Moving and Locking Railway or Like Points, of which the following is a specification.

The present invention relates to improvements in mechanism for moving and locking railway or like points.

In the most generally preferred arrangement for locking railway or like points, wherein the locking device is a plunger engaging in holes or notches in the stretcher bar, the plunger is withdrawn from one hole as the locking bar receives its movement in one direction and is returned to another hole, to lock the points again after they have been shifted, as the locking bar receives its return movement.

Means for performing these movements and also shifting the points by means of one lever in a manual system or by a motor have been devised, but they involve a considerable amount of friction and do not allow of easy adjustment to compensate for wear or other cause of variation in the relationship between the parts.

Now an important object of the present invention is to provide mechanism for locking and shifting facing points which performs the movements in question with a minimum of friction and which is very easily adjusted. Moreover, the arrangement is such that the power whether manual or otherwise is applied to the best advantage.

In order that the invention may be clearly understood reference is made to the accompanying drawings in which Figure 1 is a diagrammatic plan of the general arrangement of one form of the invention as applied to an electrically operated mechanism in one extreme position, and Fig. 2 shows the mechanism in the other extreme position. Figs. 3—7 show the relative positions of the essential parts during one cycle of the operations of unlocking, moving and relocking the points.

The locking bolt *a* which engages in a different slot in the stretcher bar *b* in each position of the points, is connected through a rod *c* and rocking shaft *d* with the locking bar *e*, or in other known manner. The locking bar is connected through rods *f*, *g*, *h* and cranks *i*, *k* with the source of power.

The power is applied as a torque on a shaft *l*; for instance the shaft may be the axle of a worm wheel *m* driven by a worm *n* on the shaft of an electric motor *o*. Any other method of putting a torque upon the shaft may be used, however, and the motive power may be any that is suitable, including manual.

On the shaft *l* is an arm *p* which is connected by a pin *w* with a link *q*; to this link are connected by the same pin *v* the rod *h*, and also a rod *r*, the other end of which is pivoted to the stretcher bar *s*. The link *q* is extended beyond the point of connection with the rods *h* and *r* and the extension carries two adjustable stops *t*, *u*.

In the position of the parts when in Fig. 1 and 3 the points are in one of their extreme positions and the bolt *a* extends through one of the slots in the stretcher bar *b*. The motor *o* having been started the arm *p* revolves in the direction indicated by the arrow, exerting a thrust on the rod *h* to lift the locking bar from the position shown into its highest position. The arm *p* is now in the position shown in Fig. 4. In this position it is most favorably placed for exerting a pull on the rod *r*. This pull is exerted owing to stop *u* bearing against the side of rod *h* and is utilized for holding the tongue of the point tight up to the stock rail at the moment when the bolt *a* is leaving the slot in the stretcher bar *b*, thereby preventing wear of the corners of the bolt *a*. With the continued movement of the arm *p* the rod *b* moves the locking bar into the other extreme position and the parts will be as shown in Fig. 5. By a slight further movement of the arm *p* the stop *t* is brought into contact with the side of the rod *h* and the torque on the shaft *l* now becomes converted into a thrust on rod *r* and begins to move the points. It will be noted that so far the rod *r* has only moved radially about the center attached to the stretcher bar *b*.

In Fig. 6 the locking bar will again be in its highest position and the thrust exerted on the rod *r* will be at a maximum owing to the position of the arm *p*, the tongue of the points being again firmly held against the stock rail at the moment when the bolt *a* is entering the slot in the stretcher bar *b*. The further movement of the arm *p* completes the movement of the locking bar and bolt *a* which are now in their original positions but with the points reversed, as shown in Figs. 1 and 2, the movement of the rod *r* having again become merely radial. In this position of the parts the motive power is cut off from the shaft *l* in a known manner. The reverse movement of the motor *o* moves the points back into the position shown in Fig. 1, the cycle of movements being precisely the same but in reverse order.

As the extent of movement of the points is governed by the distance of the stops *t* and *u* from the center line through the pins *w* and *v*, variation of the movement can readily be made by adjusting this distance. For instance the stops may be set screws working in brackets on the link as shown.

By suitably proportioning the parts and determining the positions of the cranks *k* and *i*, bolt *a* can be made to pass through the stretcher bar *b* through considerably more than half its travel and its movement can be so arranged that its rate of motion through the

slot in stretcher bar *b* is accelerated at the moment when the arm *p* is pressing the points firmly against the stock rails at one or other of the extreme positions.

Although it is in accordance with the best practice to connect the bolt *a* with the source of power through the locking bar *e*, the connection between the bolt and the rod *h* may be any other that is suitable.

What I claim as my invention and desire to secure by Letters Patent is:

1. In mechanism for moving and locking railway points the combination of a stretcher bar having detent means, a bolt for engaging said means and locking said bar, a shaft, means for rotating the latter and means revolubly connected at the same center with said bolt and with said bar adapted to be driven by said shaft.

2. In mechanism for moving and locking railway points the combination of a stretcher bar having detent means, a bolt for engaging said means and locking said bar, a shaft, means for rotating the latter and pivoted means revolubly connected at the same center with said bolt and with said bar adapted to be driven by said shaft.

3. In mechanism for moving and locking railway points the combination of a stretcher bar having detent means, a bolt for engaging said means and locking said bar, a shaft, means for rotating the latter, two members pivoted together adapted to be driven by said shaft and means revolubly connected at the same center with one of said members, with said bolt and with said bar.

4. In mechanism for moving and locking railway points the combination of a stretcher bar having detent means, a bolt for engaging said means and locking said bar, a shaft, means for rotating the latter, an arm on said shaft, a link carrying a pin pivoted to said arm, and means engaging said pin connected with said bolt and with said bar.

5. In mechanism for moving and locking railway points the combination of a stretcher bar having detent means, a bolt for engaging said means and locking said bar, a locking bar, means connecting the latter with said bolt, a shaft and means for rotating the latter, with means revolubly connected at the same center with said locking bar and with said stretcher bar adapted to be driven by said shaft as set forth.

6. In mechanism for moving and locking railway points the combination of a stretcher bar having detent means, a bolt for engaging said means and locking said bar, a locking bar, means connecting the latter with said bolt, a shaft and means for rotating the latter, with pivoted means revolubly connected at the same center with said locking bar and with said stretcher bar adapted to be driven by said shaft as set forth.

7. In mechanism for moving and locking railway points the combination of a stretcher bar having detent means, a bolt for engaging said means and locking said bar, a locking bar, means connecting the latter with said bolt, a shaft and means for rotating the latter, with two members pivoted together adapted to be driven by said shaft and means revolubly connected at the same center with one of said members, with said locking bar and with said stretcher bar as set forth.

8. In mechanism for moving and locking railway points the combination of a stretcher bar having detent means, a bolt for engaging said means and locking said bar, a locking bar, means connecting the latter with said bolt, a shaft and means for rotating the latter, with an arm on said shaft, a link carrying a pin pivoted to said arm and means revoluble on said pin connected with said locking bar and with said stretcher bar as set forth.

9. In mechanism for moving and locking railway points the combination of a stretcher bar having detent means, a bolt for engaging said means and locking said bar, a shaft, means for rotating the latter, an arm on said shaft, a link carrying a pin pivoted to said arm, a rod revoluble on said pin connected with said bar, another rod revoluble on said pin connected with said bolt, said link being extended beyond said pin and carrying adjustable stops one on each side of said latter rod.

10. In mechanism for moving and locking railway points the combination of a stretcher bar having detent means, a bolt for engaging said means and locking said bar, a shaft, means for rotating the latter, an arm on said shaft, a link carrying a pin pivoted to said arm, a rod revoluble on said pin connected with said bar, another rod revoluble on said pin connected with said bolt, said link being extended beyond said pin and carrying stops one on each side of said latter rod.

11. In mechanism for moving and locking railway points the combination of a stretcher bar having detent means, a bolt for engaging said means and locking said bar, a locking bar, means connecting the latter with said bolt, a shaft and means for rotating the latter, with an arm on said shaft, a link carrying a pin pivoted to said arm, a rod revoluble on said pin connected with said stretcher bar, another rod revoluble on said pin connected with said locking bar, said link being extended beyond said pin and carrying stops one on each side of said latter rod as set forth.

12. In mechanism for moving and locking railway points the combination of a stretcher bar having detent means, a bolt for engaging said means and locking said bar, a locking bar, means connecting the latter with said bolt, a shaft and means for rotating the latter, with an arm on said shaft, a link carrying a pin pivoted to said arm, a rod revoluble on said pin connected with said stretcher bar, another rod revoluble on said pin connected with said locking bar, said link being extended beyond said pin and carrying adjustable stops one on each side of said latter rod as set forth.

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

LUIS DE MORAES GOMES FERREIRA.

Witnesses:

ALFRED NUTTING,

B. F. WILLIAMS.