

Patented July 17, 1866.

Fig. 7.

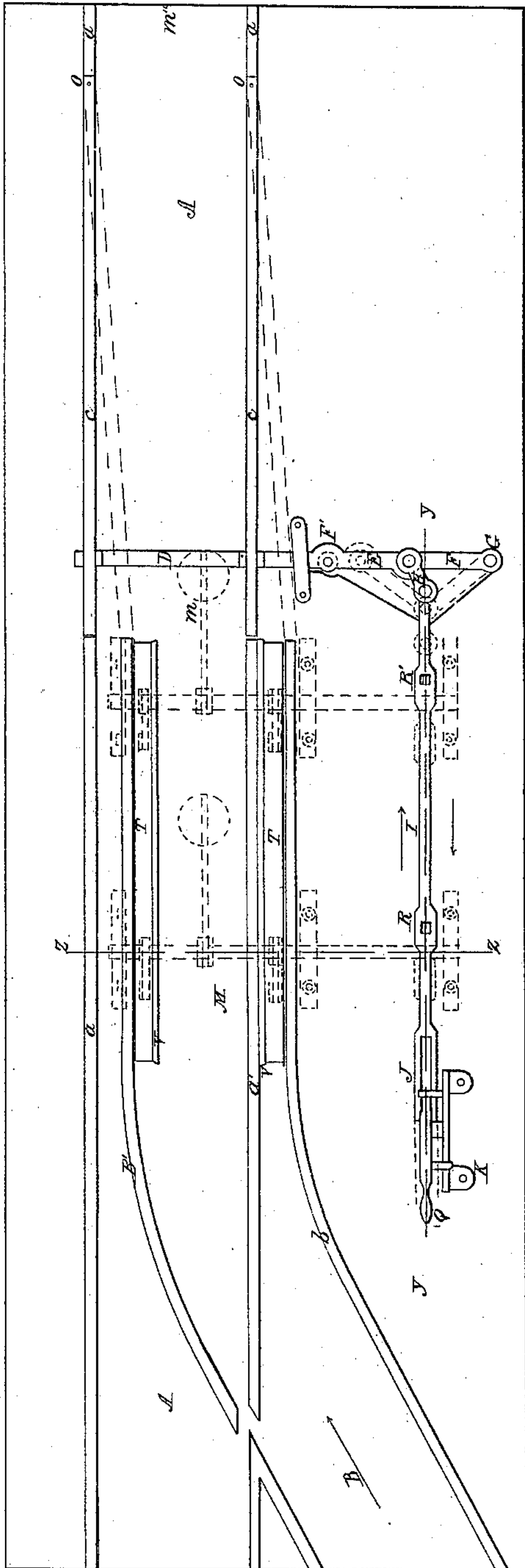


Fig. 4.

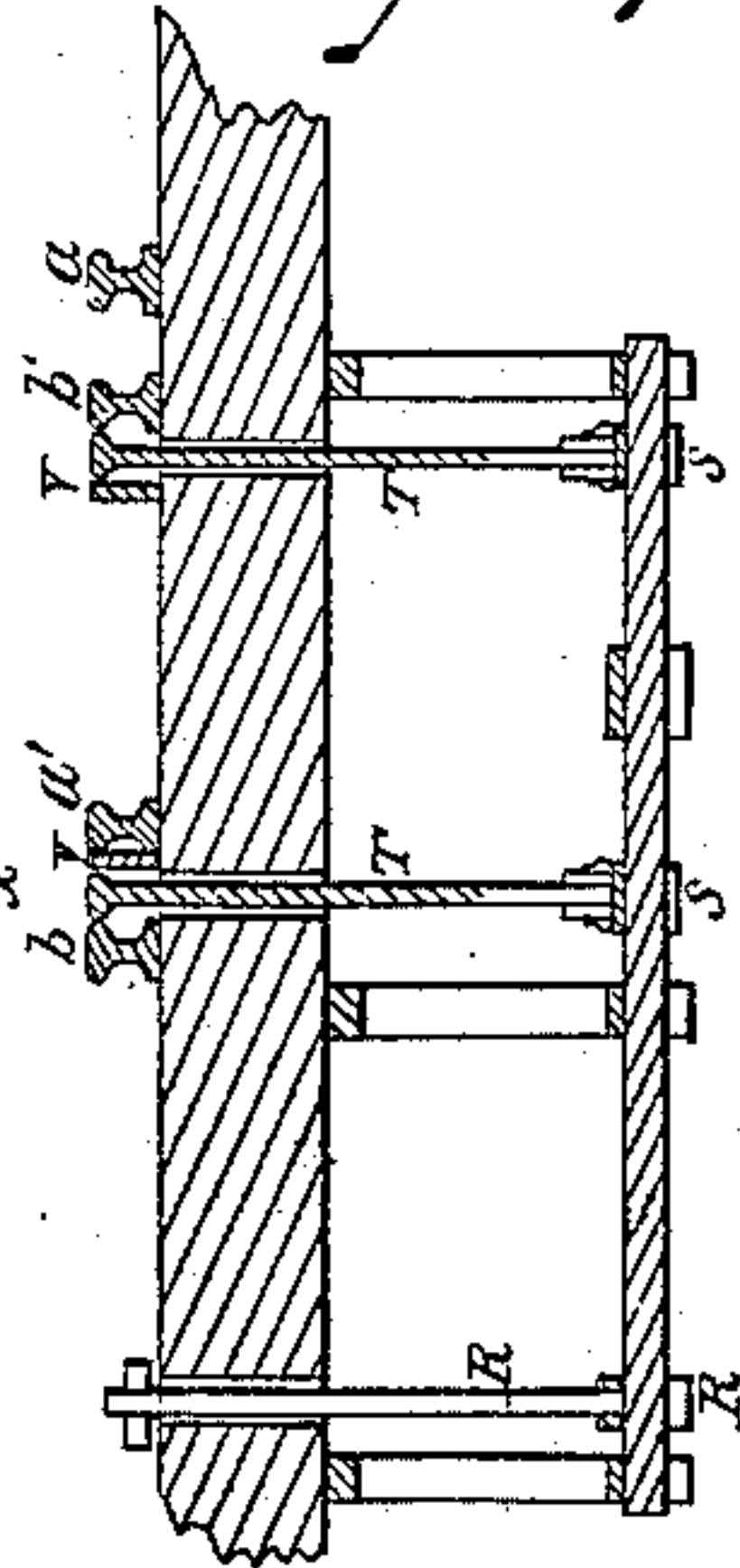


Fig. 3.

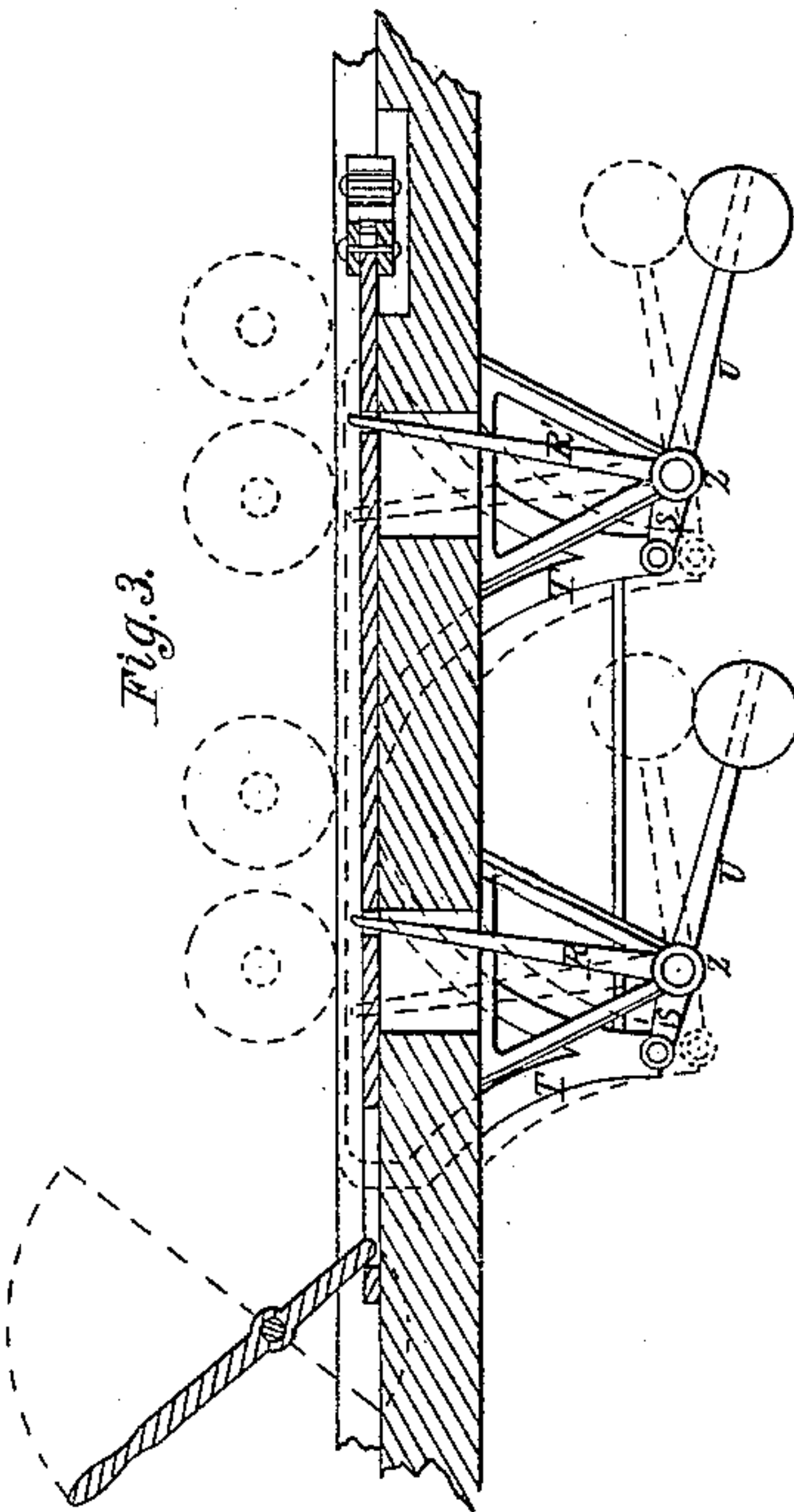
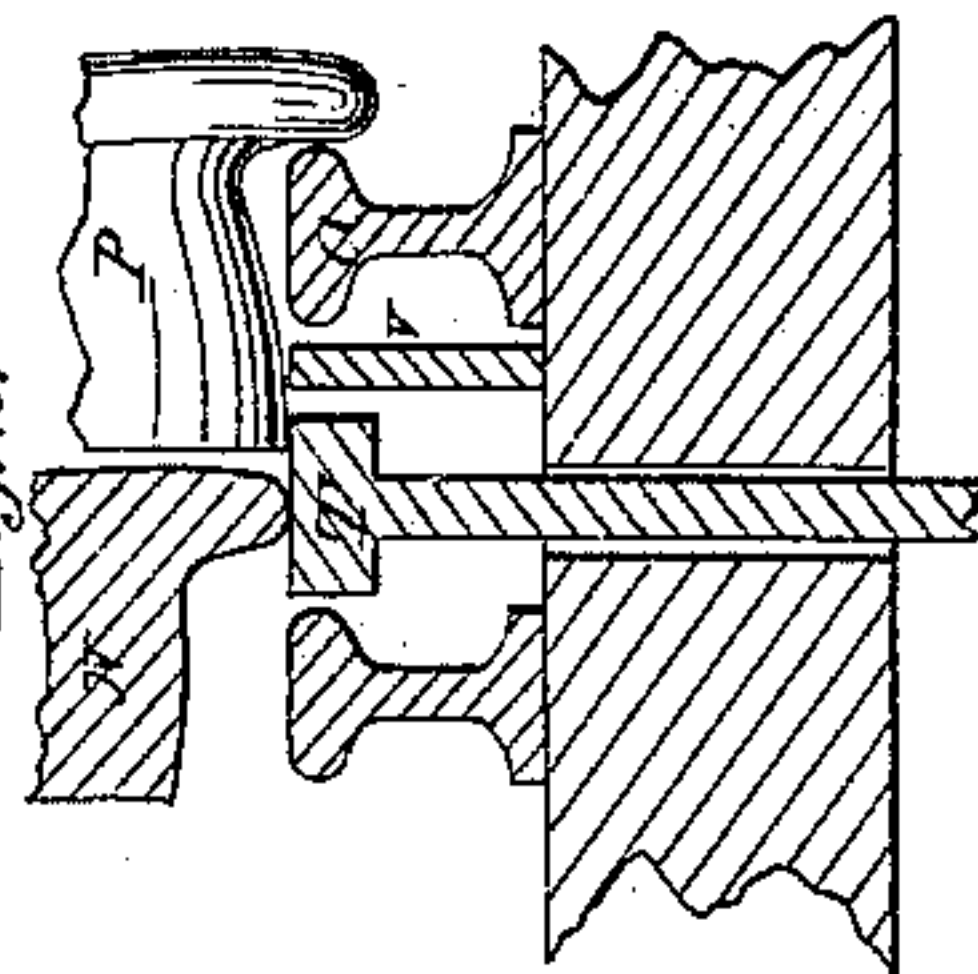


Fig. 2.



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UNITED STATES PATENT OFFICE.

THOMAS S. MITCHELL, OF PITTSBURG, PENNSYLVANIA.

IMPROVED RAILROAD-SWITCH.

Specification forming part of Letters Patent No. 56,432, dated July 17, 1866.

To all whom it may concern:

Be it known that I, THOS. S. MITCHELL, of the city of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Self-Acting Railroad-Switch; and I do declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention is a railroad-switch-moving apparatus, automatic in its action, and which makes it impossible for any wagons, engines, cars, or trucks to run off the tracks which are connected with said switch.

In my drawings, Figure 1 is a top view of my improved railroad-switch-moving apparatus and switch. Fig. 2 is a detail, on an enlarged scale, of the part X of Fig. 4. Fig. 3 is a longitudinal sectional view, in elevation, of my improved switch-moving apparatus through the line Y Y; and Fig. 4 is a transverse sectional elevation of the same through the line Z Z.

A is the main track or road, and B is the branch track or road. *a* and *a'* are the rails of the main track A. *b* *b'* are the rails of the track B. C C are the movable rails of the switch, which are pivoted at the points O O in the usual manner, and are moved by the bar D. The bar D is connected to two links, E and F, by center pins or bolts, *f* *f*, and the point G is held by a stationary bolt or pin, around which it can swing. The middle of the links E F is connected to a short link, H, which is connected by a bolt to the bar I, so that if the said bar I is moved in the direction of the black arrow it will act on the links E and F, and they will, by pulling on the bar D, move the switch in the position indicated by the red lines. At the end J of the bar I there is an ordinary lever with stand and quadrant, only the quadrant has but one notch, K, for locking the lever Q in the position for having the switch closed, so that when the lever Q is used to open the switch by hand it cannot be used to lock the switch open, and the bar I has a long slot at the point J, for allowing free motion to the bar I in the direction of the black arrow, even when the lever Q is locked.

R R are levers passing in square mortises in the bar I, which are fastened to two shafts, *r* *r*, so that if the arms R R are made to vi-

brate they will move the bar I in the direction of the black or red arrows.

At right angles with the arms R R, and also fastened to the shafts *r* *r*, are four small levers or arms, S S S S, upon which rests the frame T T, and extending opposite to them are two levers with counter-weights U U, sufficient to overcome the weight of the frame T T, lift them up, and also move the bar I in the direction of the red arrow and close the switch. These levers and weights U U can be replaced by one or more springs, which will answer the same purpose.

V V are two pieces of steel, which are placed by the side of the top of the movable frames T T, and serve the purpose of preventing any stones or other obstructions from lodging under the pieces T T and preventing their free action. It is also used to prevent the broad-face wheel P from acting on the piece T, Fig. 2, in the case where the wheel, being worn and being as a double-flange wheel, might act on the piece T when not intended to do so. The wheel P on Fig. 2 demonstrates how the weight would in that case be received on the piece V and not on the piece T, as it would do if the piece V were not there.

The operation of my automatic switch-moving apparatus is at once simple and efficient, and no train can run off the track with such a switch attachment.

If a train is on the main track A, running in either direction, it cannot run off the track, for the switch is kept closed by the weights U U or springs, and it cannot be left open by mistake, as there are no lock-notches to the quadrant to keep the switch open, and unless kept open by the application of manual force on the lever Q it will always fly back and be held securely closed by the springs or weights U U.

The only train that could possibly run off the track would be one coming from the track B in the direction of the arrow on that track; but as soon as the first wheel of that train would arrive at the point M the wheels would be in the position represented by the wheel N in Fig. 2, and the whole weight of the train bearing on the flanges T T will depress the frames in the position indicated in red in Fig. 3, raise the weights U U, and open the switch, as already described, so that the train could

not by any means run off the track. As soon as the last wheel of the train reaches the point *m''* the switch is relieved from any weight, and yielding to the influence of the weights *U U* or springs, it will close and be perfectly safe.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The automatic switch-moving apparatus composed of the bar *D*, links *E F H*, bar *I*, levers *R R*, shafts *r r*, arms *S S*, frames *T T*, and weights *U U*, or their equivalents, when they are arranged and operating as specified.

2. The pieces of steel *V V*, in combination with the rail *a'* and frame *T*.

3. Operating a switch automatically by the action of the weight of the train itself on the frames *T T*, in the manner described, and for the purpose of preventing such train from running off the track.

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