

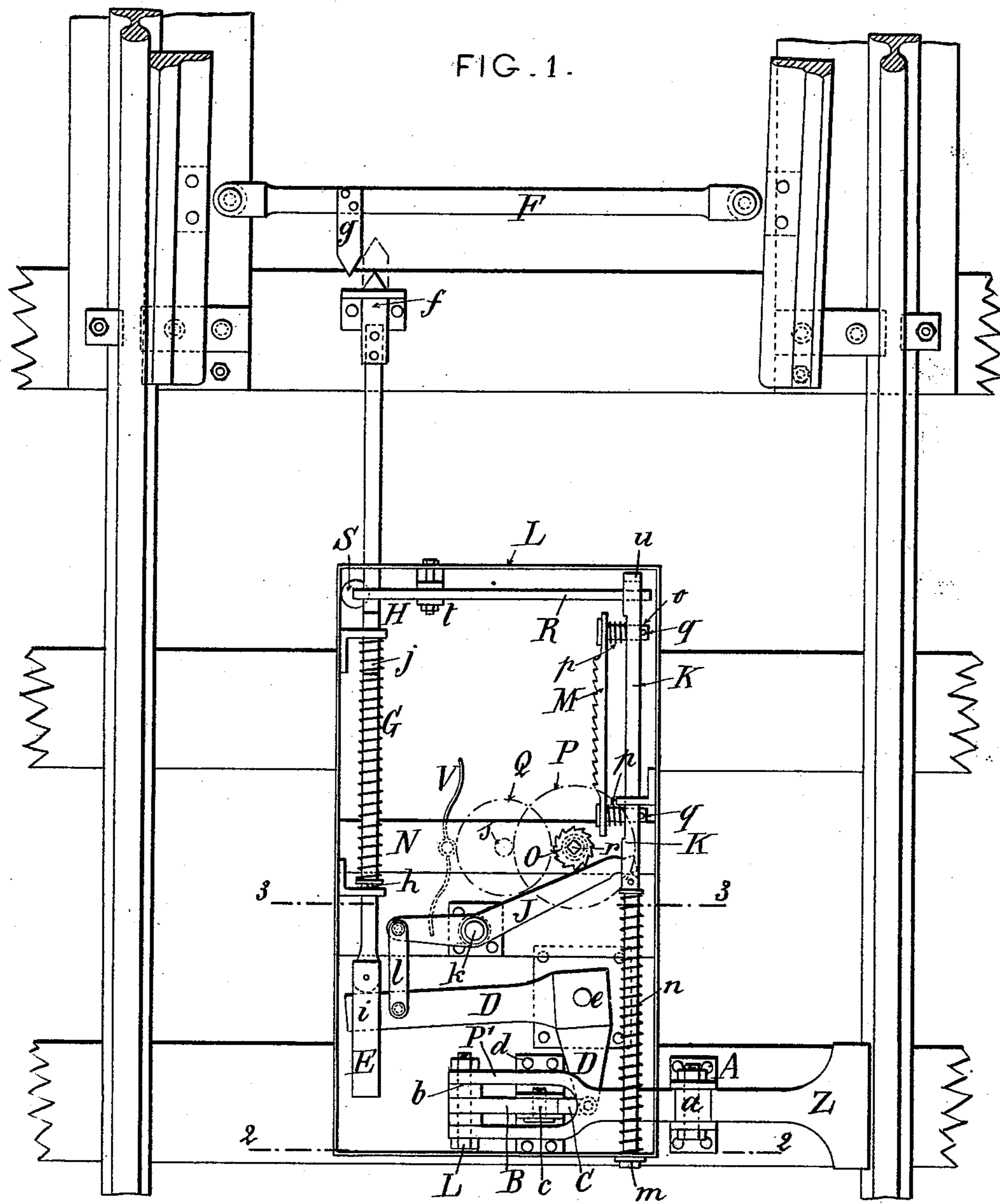
(No Model.)

2 Sheets—Sheet 1.

S. ROGOZEA.
RAILWAY POINT AND SWITCH.

No. 583,088.

Patented May 25, 1897.



WITNESSES:

Frd White
Thomas F. Wallace

INVENTOR:

Sava Rogozea,

By his Attorneys:

Arthur C. Orason & Co

(No Model.)

2 Sheets—Sheet 2.

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FIG. 2.

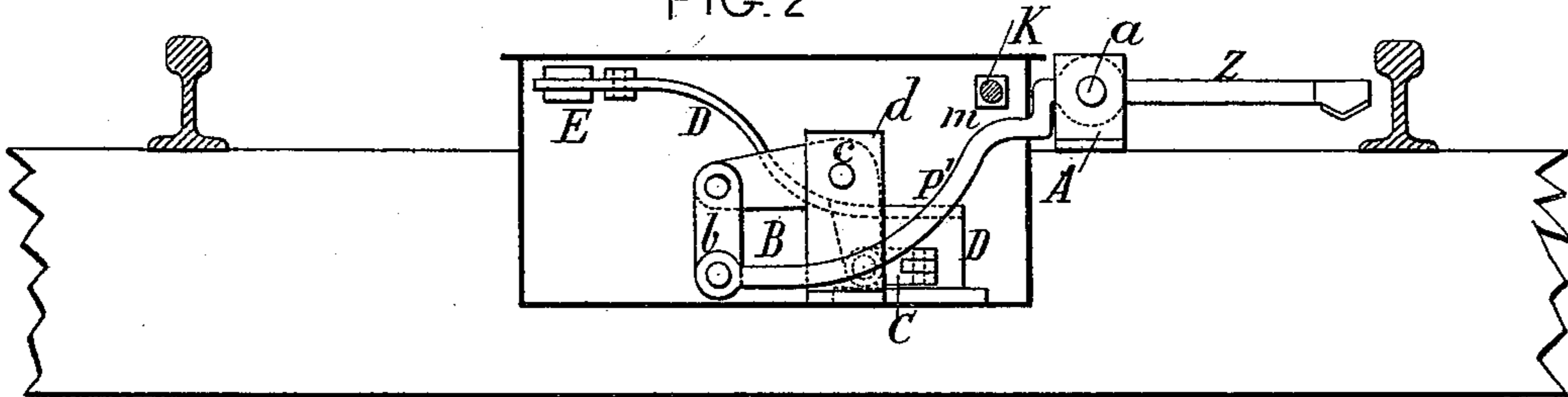


FIG. 3.

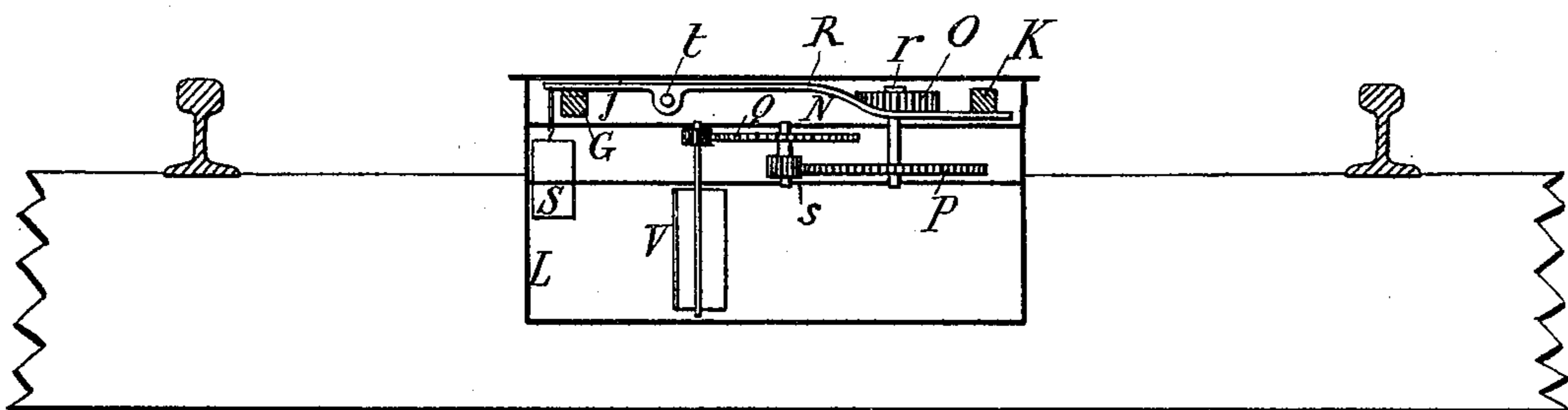


FIG. 4.

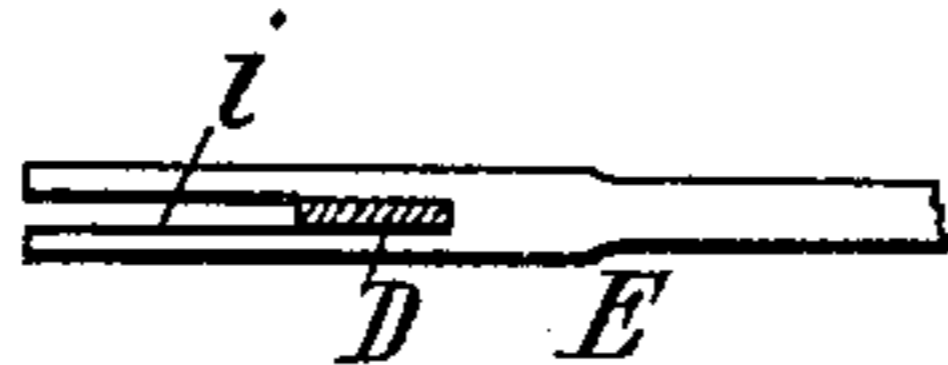


FIG. 5.

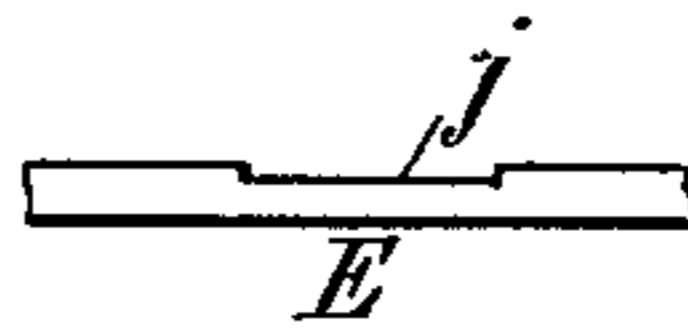


FIG. 6.



FIG. 7.

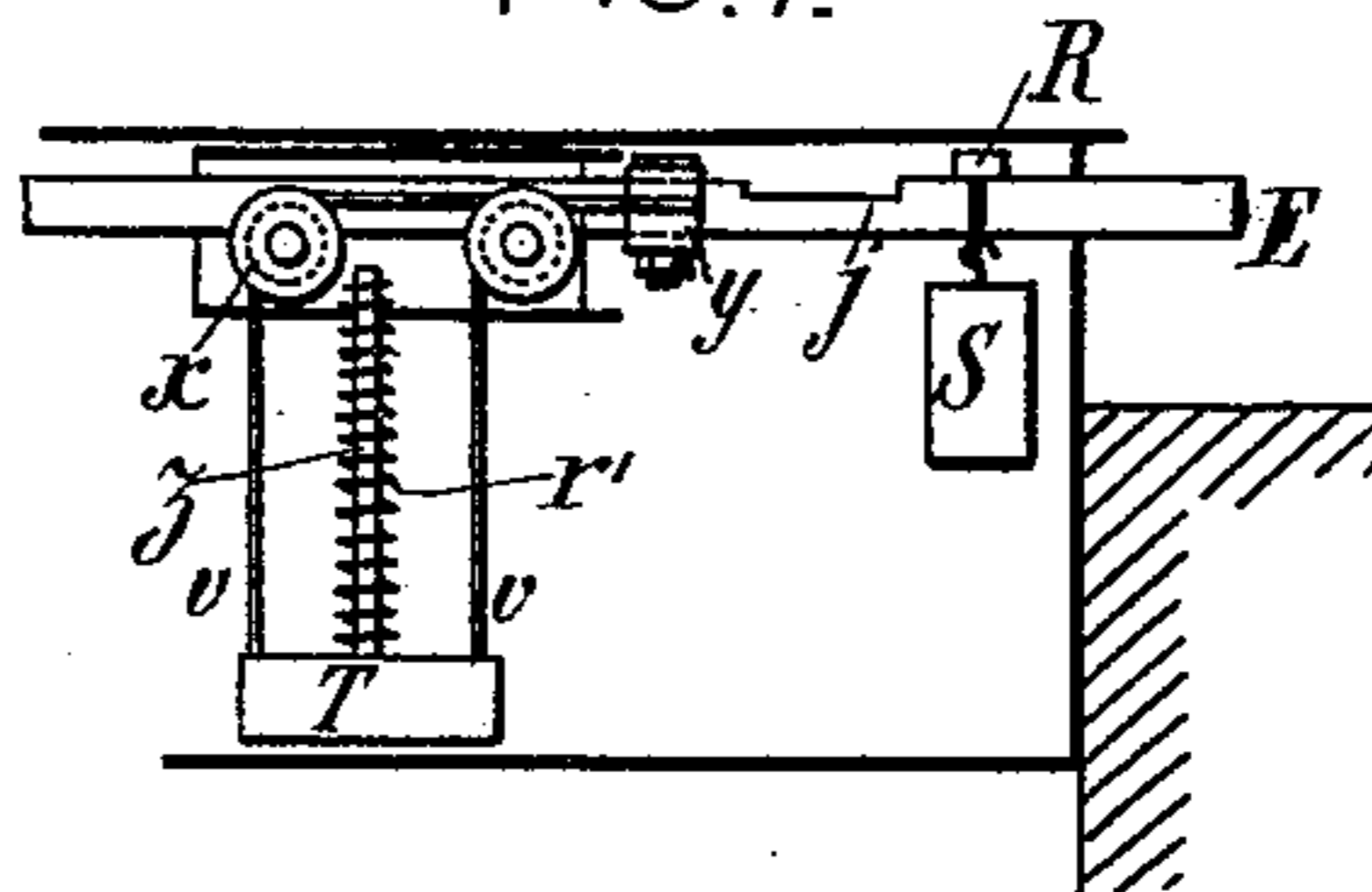
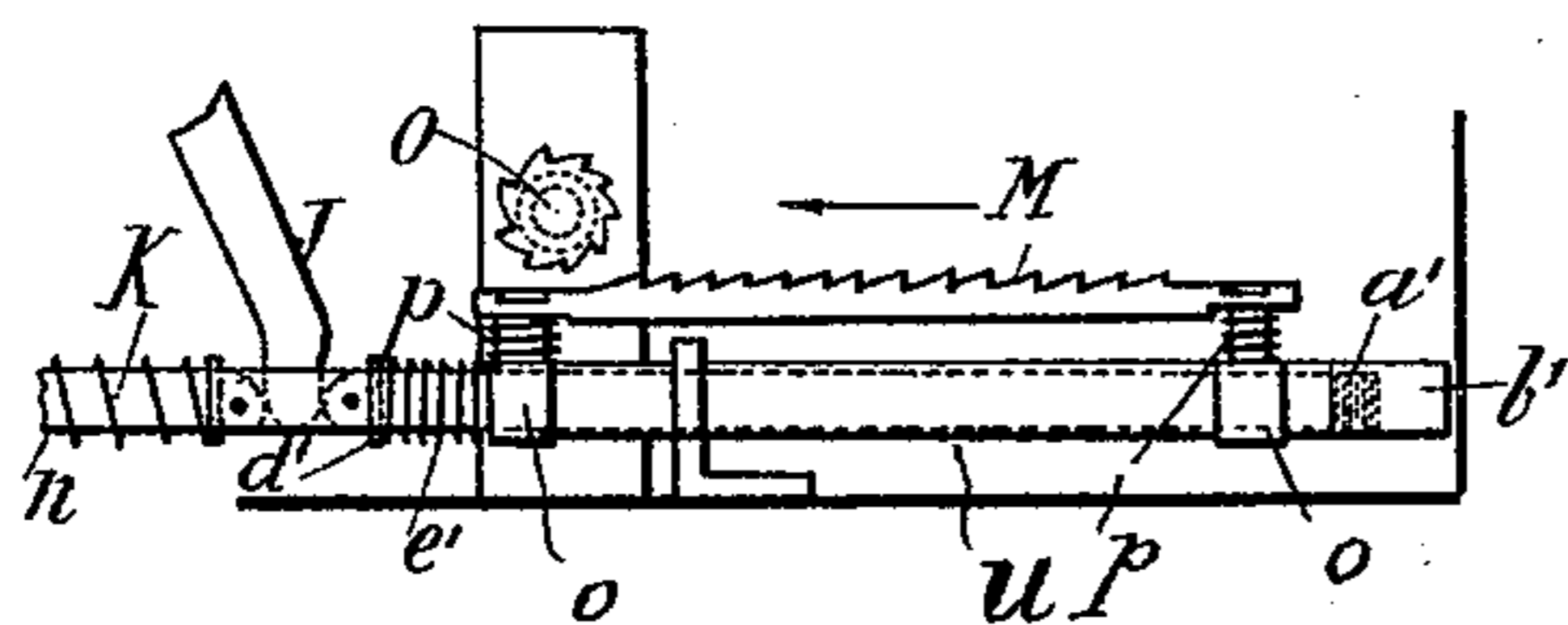


FIG. 8.



WITNESSES:

Ired White
Thomas F. Wallace

FIG. 9.

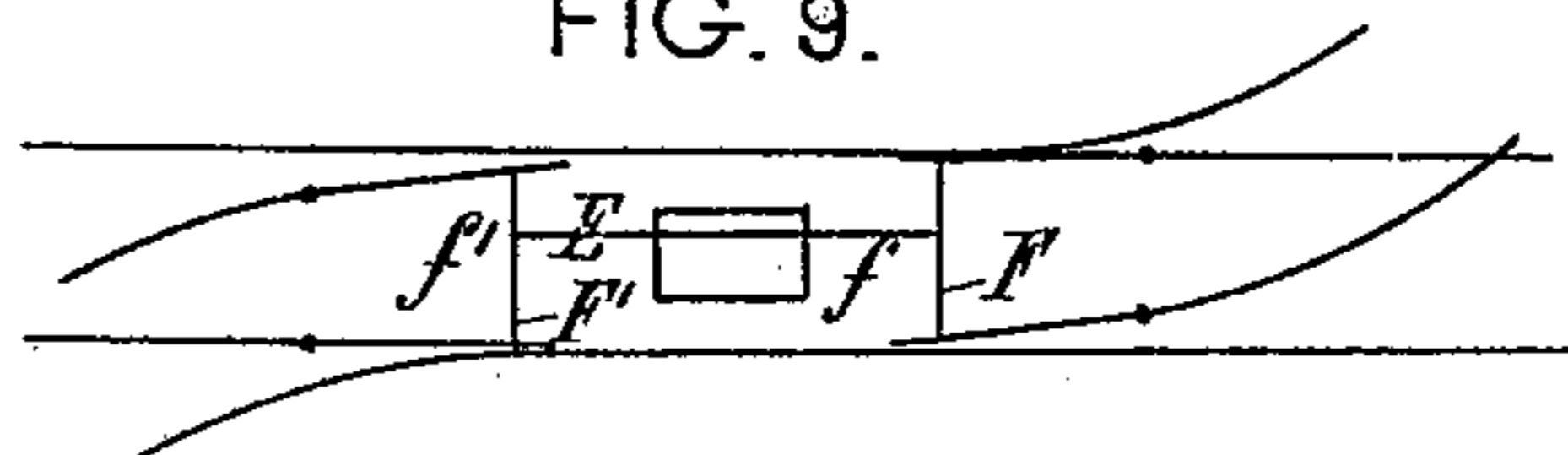


FIG. 10.



INVENTOR

Sava Rogozea,

By his Attorneys:

Arthur C. Dresser & Co.

UNITED STATES PATENT OFFICE.

SAVA ROGOZEA, OF PITESTI, ROUMANIA.

RAILWAY POINT AND SWITCH.

SPECIFICATION forming part of Letters Patent No. 583,088, dated May 25, 1897.

Application filed April 1, 1897. Serial No. 630,250. (No model.)

To all whom it may concern:

Be it known that I, SAVA ROGOZEA, a subject of the King of Roumania, residing in Pitesti, Roumania, have invented certain new and useful Improvements in and Connected with Railway Points and Switches, of which the following is a specification.

The object of this invention is to prevent any displacement of a railway point or switch during the passage of a train and also for a certain time after the passage thereof. The entire mechanism is operated by means of a short pedal.

In the accompanying drawings, Figure 1 is a plan view; Fig. 2, a transverse section on the line 2 2; Fig. 3, a transverse section on the line 3 3. Figs. 4 and 5 are details of the locking-bar E. Fig. 6 is an elevation of the end of the unlocking-bar K. Fig. 7 is a fragmentary longitudinal section showing a modification. Fig. 8 is a fragmentary plan answering to a portion of Fig. 1 and showing a further improvement. Fig. 9 is a plan on a small scale, showing the application of my invention to the control of two switches. Fig. 10 is a fragmentary elevation showing one end of the locking-bar E in Fig. 9.

The system includes a pedal Z, which is pivotally mounted at *a* on a support A. When a train passes, this pedal is pressed down about fifteen millimeters by the flanges of the car-wheels. In this movement the arm P' rises and acts through the link *b* on the elbow-lever B, which is pivoted on an axis *c* on a bracket *d*. The elbow-lever B acts in its turn through a rod C on an elbow-lever D, pivoted at *e*, and the long arm of which is engaged in a fork *i* of a locking bar or rod E. (See Fig. 4.)

The pressing down of the pedal Z has the result of moving forward the rod E with its bolt *f* and of maintaining solidly fixed the movable rails which constitute the switch.

In case the switch were not completely closed when a train approaches for engaging with the switch the bolt *f* would displace laterally the bolt *g*, fixed on the connection-rod F of the movable rails of the switch, which would have the effect of forcing the movable rails against the fixed rails.

In the advancing movement of the locking-rod E a helical spring G, which surrounds it

between the pin *h* and the abutment H, is compressed. This spring consequently tends to return the rod E to its initial position.

The rod E is formed at *j*, (see Fig. 5,) with a notch destined to receive a lever R when the latter turns in its movement, as will be explained.

A lever J, which can turn around an axis *k*, has one arm connected by a link *l* to one arm of the elbow-lever D, while the other arm connects with a rod K and imparts to it a movement inverse to that of the rod E. In the lateral side of the casing L is formed an opening *m* in such manner that in executing its movement the rod K encounters no resistance. Around the rod K is likewise coiled a helical spring *n*, which is compressed during this movement of the rod K, this spring tending thus to restore the rod K to its initial position. To one side of the rod K is arranged a rack M, which carries two rods *o*, having springs *p*, which press the rack away from the rod K, this movement being limited by pins *q*.

About the middle of the casing is arranged a framework N, solidly fixed to the lateral sides of the casing and carrying an axis *r*, on which is fixed a ratchet-wheel O and also a gear-wheel P. The latter gears with the pinion *s* of a gear-wheel Q, which in its turn meshes with the pinion of a rotary governing fan or flier V.

While the rod E executes its forward movement the rod K moves backward. The rack N is brought into gear during this movement by sliding longitudinally along the ratchet-wheel O, the springs *p* yielding as the rack is displaced. The mechanism is held firmly in its new position by means of the lever R, which turns around an axis *t*. As soon as the rod E is advanced the notch *j* comes underneath the short arm of the lever R in such manner that by means of the counterweight S, Fig. 3, fixed to the end of this arm the latter descends into the notch. At this moment the end of the other arm of the lever R, which at first was under the rod K and which consequently was held by this rod, is set free by the displacement of the rod K in the opposite direction to the movement of the rod E. The switch will remain thus closed during the time that the train is passing over the pedal Z. When the last car has passed beyond the

pedal Z, the two springs of the rods E and K, being compressed, tend to return these rods to their respective initial positions. Consequently the rack M, pressed by the springs *p* against the teeth of the ratchet-wheel O, sets in motion the system of toothed wheels P s Q, and hence, also, the fly-fan V. The end *u* of the rod K is beveled on its under part, as shown in Fig. 6, in such manner as to press down the end of the long arm of the lever R and to raise the counterweight S, as well as the short arm of the lever, which hence disengages the notch *j*. It is only then that the rod E will return to its initial position under the action of its spring G and disengage the switch. The system of gearing and governor-fan has thus for effect to retard the rearward movement of the rod E. Its return takes place in from five to fifteen seconds.

Fig. 7 shows a modification in which the spring G is replaced by a counterweight T, suspended by four metallic cables *v*, passing over pulleys *x*, these four cables being solidly held to the rod E by a clamp *y*. In order to avoid the shock of the weight against the upper side of the casing L, I arrange a spring *r* around the rod *z*, which guides this weight. In like manner the spring *n* of the rod K may be replaced by a similar counterweight. When the rod K is displaced backwardly, the rack M slides over the ratchet-teeth and opposes but slight resistance until about its middle. In order to reduce, during the opposite movement of the rack M, the shock of the latter against the ratchet wheel O, I employ an arrangement as shown in Fig. 8. The rod K is provided with a separate sliding member or sleeve U for that part contiguous to the rack M. This member or sleeve at its end *a'* projects beyond the rod K for receiving a stop *b'*. The sleeve U carries the rack M by the intervention of arms *o*, having springs *p*. A coiled spring *e'* is interposed between the other extremity of the sleeve and a pin *d'* or stop-shoulder fixed to the rod K. When the lever J displaces the rod K to the left in Fig. 8, the cushion *b'* on this rod carries with it the sleeve U and the rack M, the spring *e'* not being affected. In the return movement of the rod K the first movement effects a slight displacement of the stop *b'* and a compression for a few centimeters of the spring *e'*. The spring then expands, when the rack turns the ratchet-wheel, the gearing being thus relieved of shock.

A single apparatus may serve for controlling two opposed switches, as is shown in Fig. 9 on a small scale. In this case the rod E carries two bolts *f* and *f'*, which are displaced together, and which act on the connection-bars of the two switches F and F'. But one of the bolts, *f'*, is curved back, as shown in detail in Fig. 10, an arrangement necessary in order that the two parts may be simultaneously acted upon.

It will be perceived from the foregoing de-

scription that my invention includes as essential elements a treadle or equivalent device to be depressed or displaced by the action of the wheels of a train, a movable part constructed either as a longitudinal bar E or otherwise and adapted to give motion to a bolt *f*, which when moved by the depression of the treadle locks the switch, a means for preventing the return movement of the bolt to unlock the switch, and a slow-moving device for introducing the element of time into the operation thereof, being controlled either by a revolving fan or by any other equivalent governor or retarder.

I claim as my invention—

1. The combination as a means for controlling a railway-switch, of a pedal to be actuated by the car-wheels, a bolt for locking the switch upon depression of the pedal, means tending to retract said bolt, and a timing device for determining the time before said means shall retract the bolt.

2. The combination as a means for controlling a railway-switch, of a pedal to be actuated by the car-wheels, a bolt for locking the switch upon depression of the pedal, a fastener for preventing retraction of said bolt, mechanism tending to disengage said fastener, and a timing device for controlling said mechanism.

3. The combination of a pedal to be displaced by passing wheels, a bolt actuated thereby for locking the switch, a fastening-bar for engaging said bolt and preventing its retraction, a releasing-bar tending to move into engagement with and to disengage said fastening-bar, and a timing device adapted to retard the movement of said disengaging-bar.

4. The combination of a pedal to be displaced by passing wheels, a bolt actuated thereby for locking the switch, a fastening-bar for engaging said bolt and preventing its retraction, a releasing-bar tending to move into engagement with and to disengage said fastening-bar, a timing device adapted to retard the movement of said disengaging-bar, and a ratchet connection between said timing device and bar adapted to be inoperative on the retractile movement of said bar, and to engage during the active movement thereof.

5. The combination of pedal Z having arm P', elbow-lever D connected to said arm through a link, and a locking-bar E having a locking-bolt *f* for engaging the switch while the pedal is depressed.

6. The combination with pedal Z, locking-bar E and intervening connections, of releasing-bar K connected to move inversely to the locking-bar.

7. The combination with pedal Z, locking-bar E actuated thereby, locking-lever R for said bar, releasing-bar K, and means for controlling the movement of the latter.

8. The combination with pedal Z, locking-bar E actuated thereby, locking-lever R for said bar, releasing-bar K, rack M carried by

said bar, ratchet-wheel O engaged by said rack, and a retarding device in connection with said ratchet-wheel.

9. The combination with pedal Z, locking-
5 bar E actuated thereby, locking-lever R for said bar, releasing-bar K, rack M yieldingly mounted on bar K, ratchet-wheel O, fly-fan V, and intervening gearing.

10. The combination with pedal Z, locking-
10 bar E actuated thereby, locking-lever R for said bar, releasing-bar K, a retarding device for governing the active movement of this bar, an intervening ratchet engaging during

the active movement and slipping freely during the retractile movement, and a yielding 15 connection between said bar and ratchet for reducing the shock at the instant of release of the bar.

In witness whereof I have hereunto signed my name in the presence of two subscribing 20 witnesses.

SAVA ROGOZEA.

Witnesses:

SERGE DONATI,
C. FREBRECHT.