

(No Model.)

J. G. MILLER.
AUTOMATIC RAILWAY SWITCH.

No. 544,769.

Patented Aug. 20, 1895.

Fig 1

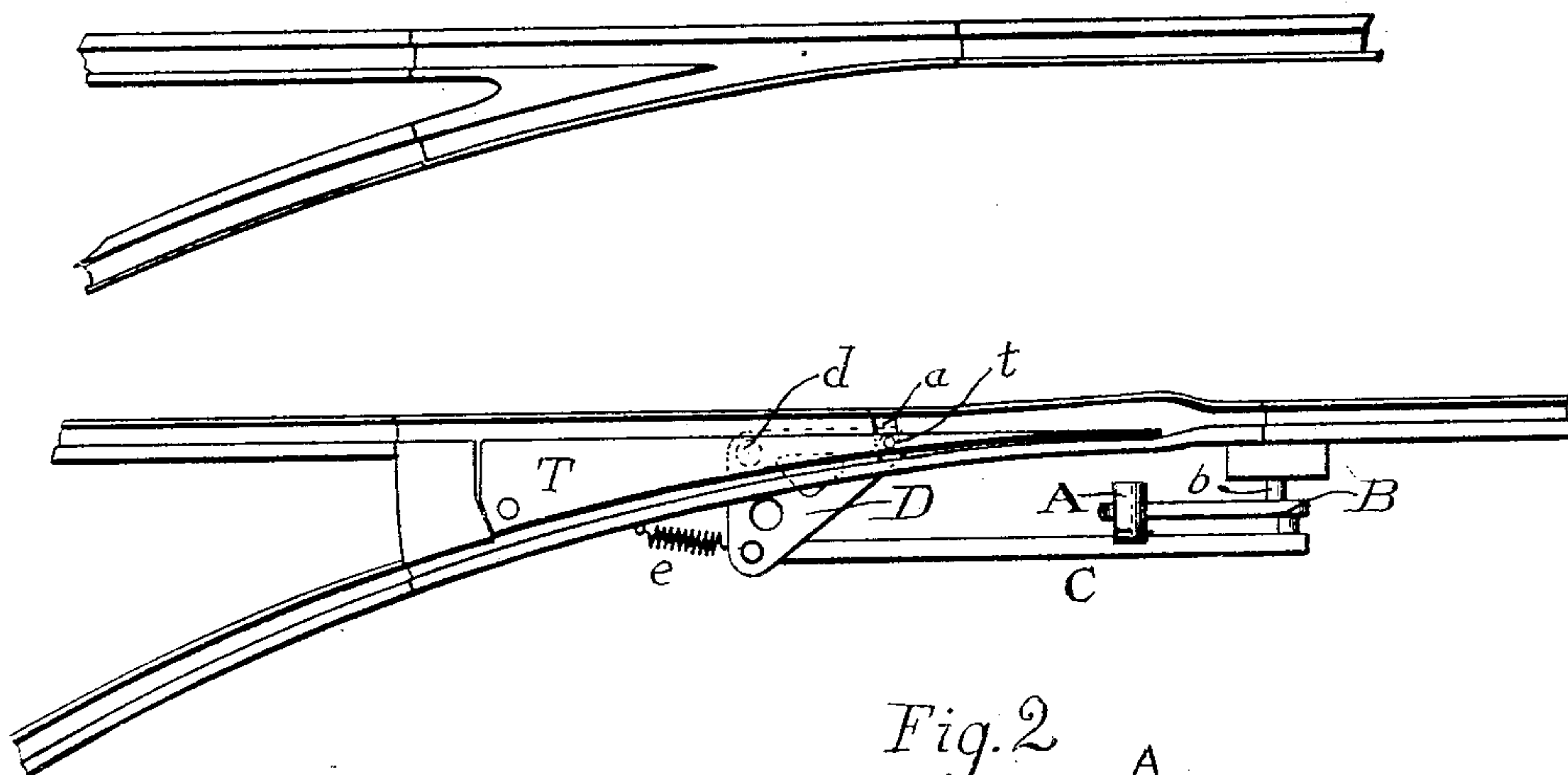


Fig. 2

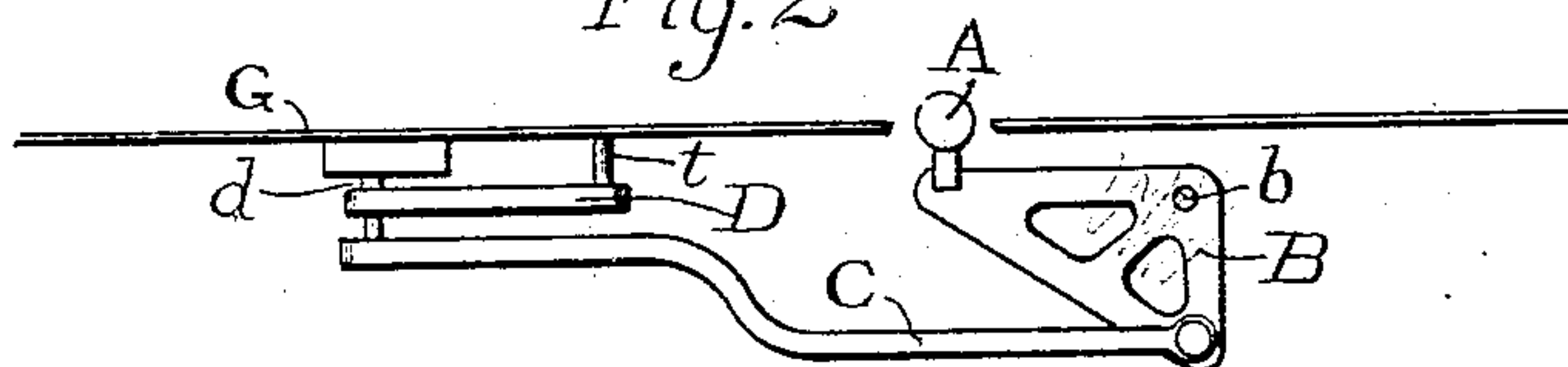


Fig. 3

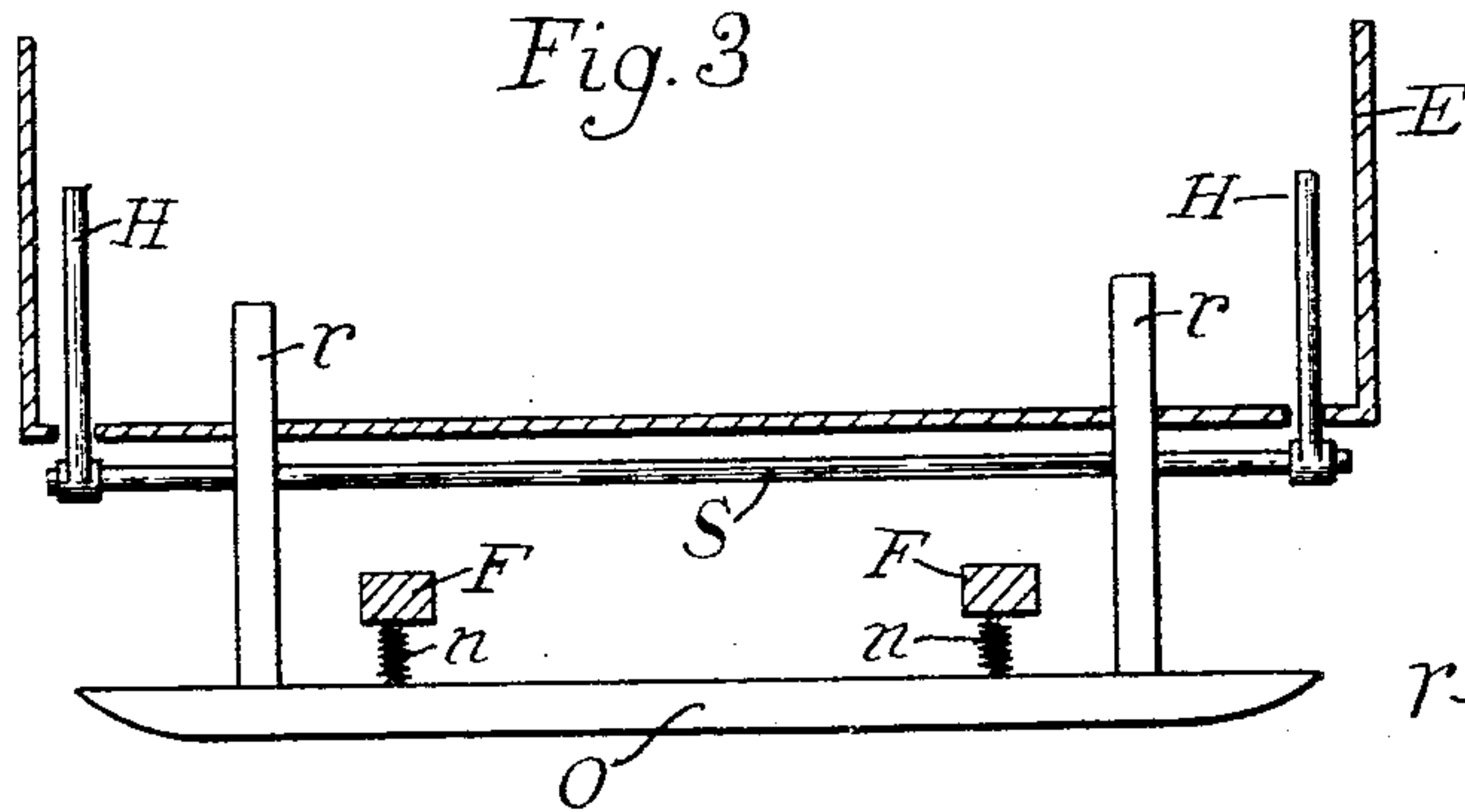
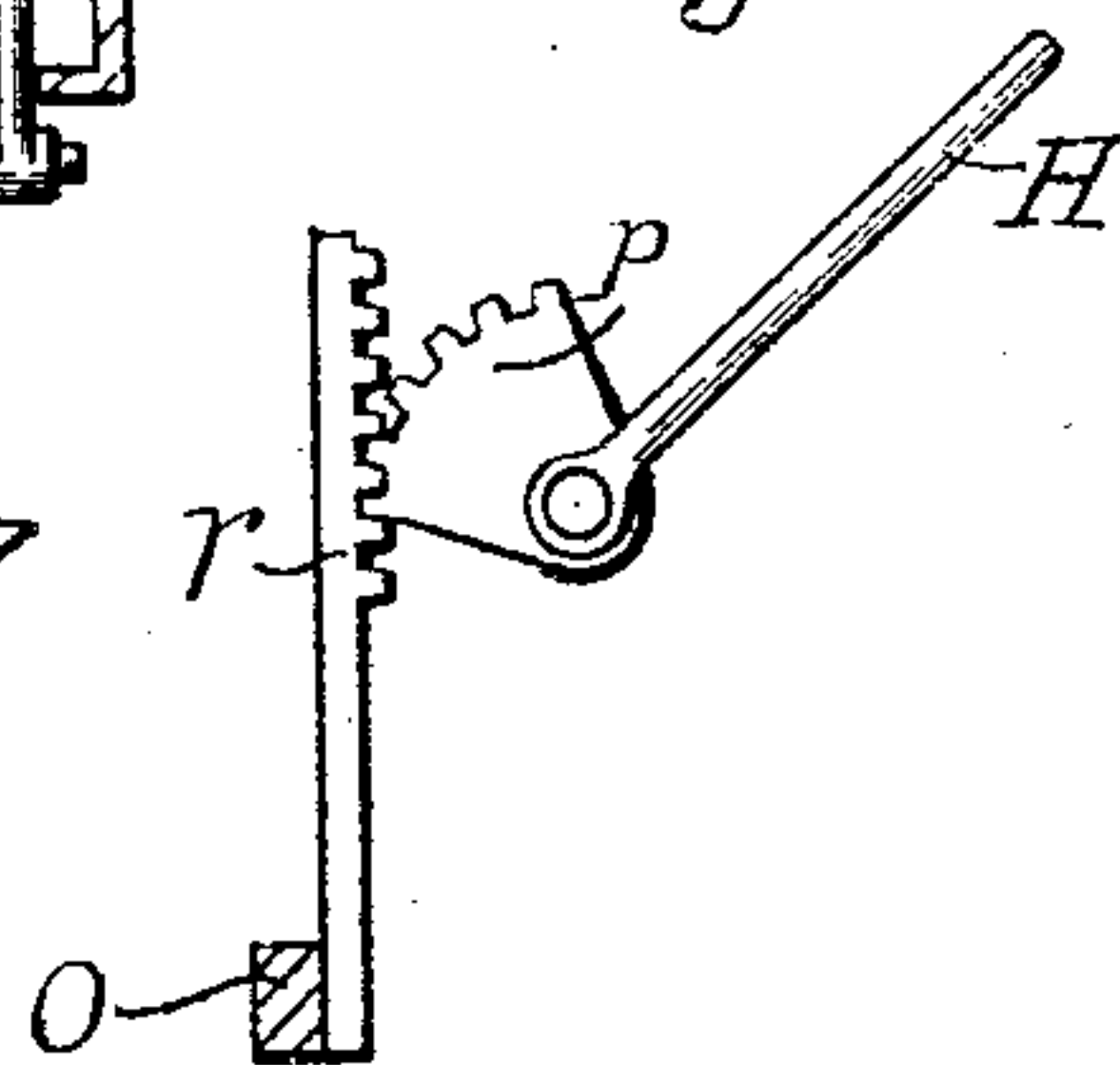


Fig. 4



WITNESSES:

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AUTOMATIC RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 544,769, dated August 20, 1895.

Application filed October 2, 1894. Serial No. 524,737. (No model.)

To all whom it may concern:

Be it known that I, JAMES G. MILLER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Automatic Railway-Switches, of which the following is a specification.

My invention relates especially to switches for street-railways, and has for its object simplicity of construction, freedom from liability to get out of order, and controllability by the motorman.

Referring to the drawings forming part of this specification, Figure 1 is a top view of my improved switch, the ground being supposed removed to show the parts beneath. Fig. 2 is a side view of the same, each part in its proper position relative to Fig. 1. Fig. 3 is a side view of the mechanism on the car for operating the switch, and Fig. 4 is an end view of a detached part of Fig. 3.

T is the ordinary switch-tongue, which is operated by a pin *t*, projecting up through a slot *a* from beneath the track. The pin *t* is carried by one corner of a bell-crank lever D, which works in a horizontal plane under ground, and is pivoted at *d*. The bell-crank lever D is operated by a vertical bell-crank lever B, also under ground, through the connecting-rod C. The bell-crank lever B is pivoted at *b*, and is in turn operated by depression of the rounded projection or roller A, which projects slightly above ground, as shown in Fig. 2, G representing the plane of the ground. A spring *e* returns the parts to their normal position after being moved.

Lengthwise of the car is mounted in suitable bearings a shaft S, which may be rotated by means of a lever H, conveniently situated on the platform. Upon the shaft S are two or more toothed sectors *p*, which mesh with the vertical racks *r r*, which, in turn, carry the horizontal contact rod or shoe O, which extends lengthwise of the car for a sufficient distance front and back of the wheels, and is carried normally about three inches from the ground. Springs *n n*, attached to some convenient part of the frame of the car F, hold the shoe O normally elevated.

E represents the dashboard and body of the car.

The operation is as follows: The main or straight track is, in the arrangement illus-

trated, normally open, and when the car is to follow the straight track no operation of the switch is needed. When, however, it is desired to turn, the motorman moves the lever H. This rotates the shaft S and sectors *p*, which move downward the racks *r r*, carrying the shoe O. The shoe O strikes and depresses the projection A, and keeps it depressed until the wheels of the car have passed the switch. The projection A depresses one arm of the bell-crank lever B, which, through the connecting-rod C, operates the bell-crank lever D, carrying the pin *t*, which is moved inward and carries with it the tongue T, which forces the wheels of the car onto the turning track. It is understood that a shoe O and operating mechanism is mounted on each side of the car.

By obvious modifications, the tongue T may be arranged on the outer curve, or the whole switch may be adapted, with very slight changes, to keep the turn normally open and require operation to open the straight track; but these are matters of minor detail to adapt my invention to the different situations in which it is to be used, and are obvious to any mechanic.

Having as above fully described my invention and the best method known to me of using the same, what I claim, and desire to secure by Letters Patent, is—

1. In automatic railway switches, a longitudinal shaft, S, mounted upon the car, in combination with means for rotating the same from the platform of the car, two or more toothed sectors, *p*, mounted upon said shaft, vertical racks, *r, r*, meshing with said sectors, a longitudinal contact rod or shoe O, carried by said racks, and one or more springs *n*, for elevating the shoe after depression, combined substantially as shown and described.

2. In automatic railway switches, a shoe O, running the length of the car and means for depressing the same by the motor man, in combination with a rounded projection A, projecting above the ground, vertical and horizontal bell crank levers B, and D, and connecting rod C, pin, *t*, and switch tongue, T, all combined and operated substantially as shown and described.

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Witnesses:

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