No. 711,320. Patented Oct. 14, 1902.

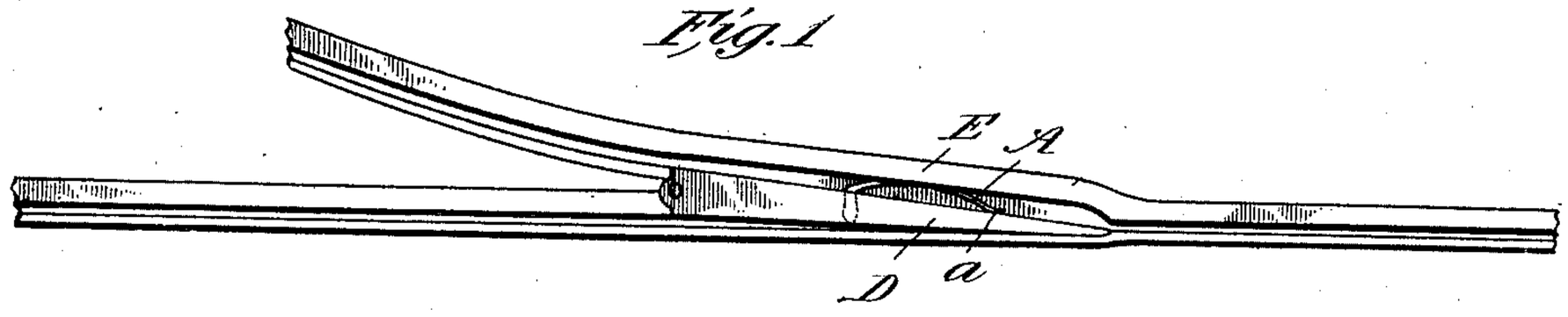
A. E. JAMES.

SWITCH.

(Application filed May 16, 1902.)

(No Model.)

Fig. 1



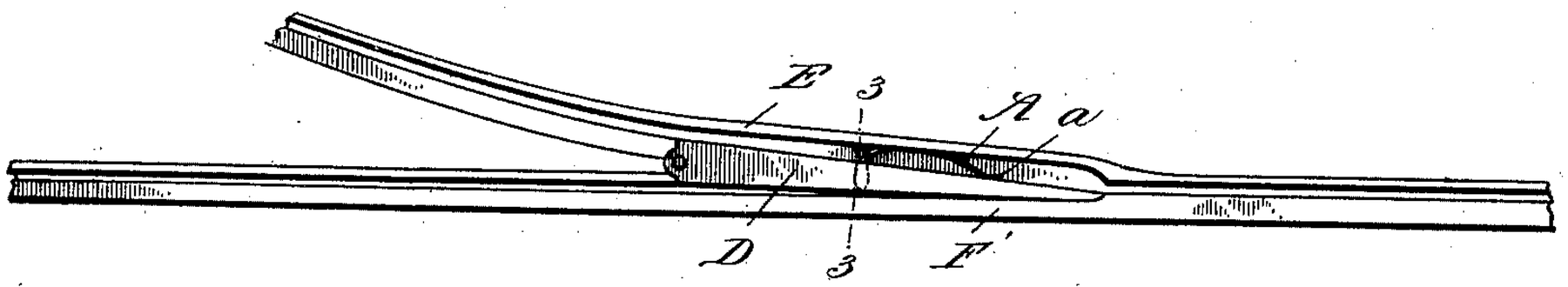


Fig. 2.

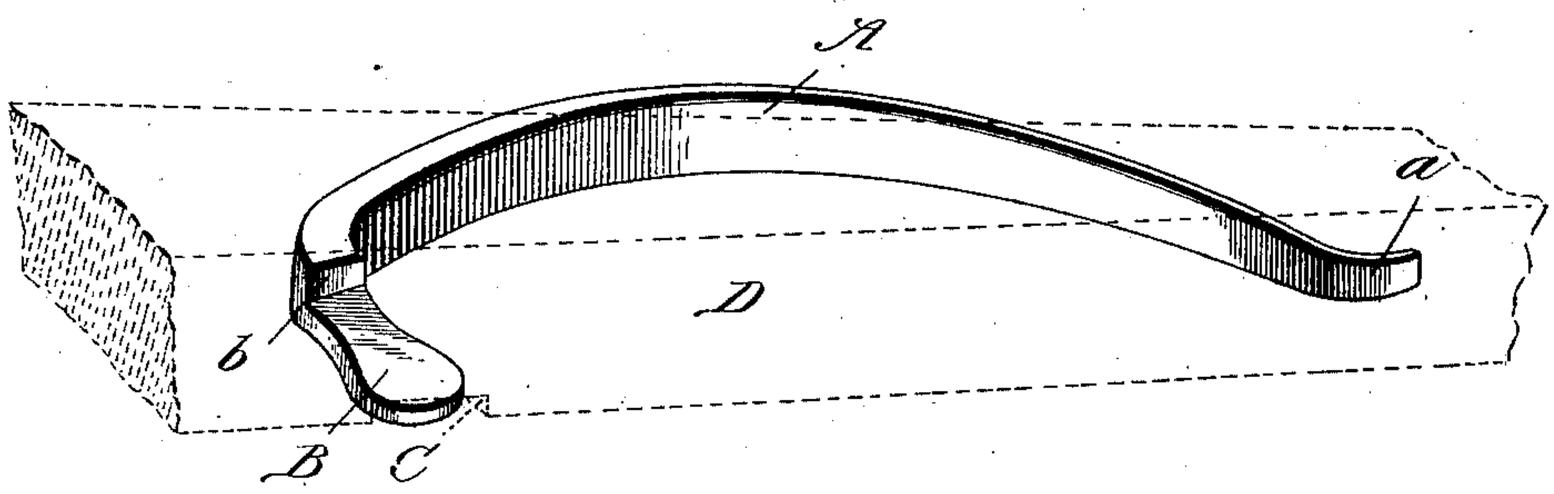
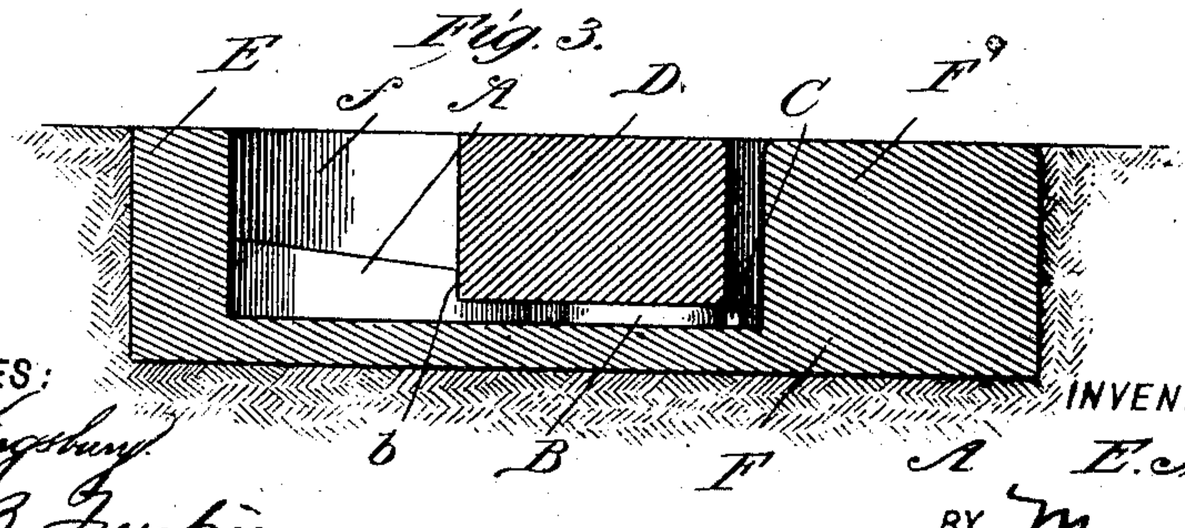


Fig. 3.



WITNESSES:
Geo. P. Kingsbury.
Percy B. Turpin

INVENTOR
E. James.
BY Munn & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

ALBERT ERNEST JAMES, OF NATCHEZ, MISSISSIPPI, ASSIGNOR OF ONE-HALF TO ANDREW B. LEARNED, OF NATCHEZ, MISSISSIPPI.

SWITCH.

SPECIFICATION forming part of Letters Patent No. 711,320, dated October 14, 1902.

Application filed May 16, 1902. Serial No. 107,583. (No model.)

To all whom it may concern:

Be it known that I, ALBERT ERNEST JAMES, a citizen of the United States, residing at Natchez, in the county of Adams and State of Mississippi, have made certain new and useful Improvements in Switches, of which the following is a specification.

My invention is an improvement in switches for car-tracks; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a top plan view of a switch embodying my invention. Fig. 2 is a detail perspective view of the operating-spring, the switch-tongue being indicated in dotted lines; and Fig. 3 is a detail cross-section on about line 3 3 of Fig. 1.

By my invention I provide a novel construction whereby the switch-tongue will be held normally in one position by means of a spring, so it can yield from such position to permit the cars to pass in one direction, thus making the switch-tongue automatic and avoiding the delay incident to the operation of the switch-point by the motorman.

In carrying out my invention I arrange the spring to be held by the switch-tongue in position to operate the latter and also arrange for holding the spring by the switch-tongue independent of separate fastenings, so that when the switch-tongue and spring are applied in position for use and the switch-tongue is secured the operating-spring will also be secured. To this end I construct the spring A, as shown in Fig. 2, with a head B at one end, which head fits and is held in a transverse recess C in the under side of the switch-tongue D at a point between the ends of said tongue, the body of the spring A operating between the switch-tongue and the switch-rail E, (see Fig. 1,) with the tip *a* of the spring bearing against the tongue D, as best shown in Fig. 1, and operating to press the tongue to the position shown in Fig. 1, in which the tongues are adjusted to open the switch. It will be noticed from Fig. 1 that the switch is opened to a train coming from the right, while for a train coming from the left on the main line the wheels thereof will force the switch-tongue back against the action of the springs A, and so permit the train to continue its course on the main line.

It will be noticed from Figs. 1, 2, and 3 that the spring A is held by the switch-tongue in position to operate between the same and the switch-rail E; also, that the head B and the recess C are so formed as to permit a certain pivotal movement of the head B of the spring in its connection with the switch-tongue, and, further, that the spring is not only held by the switch-tongue, but is so held that all separate fastenings are avoided, and when the switch-tongue is secured in place it operates of itself to secure the spring A in place.

In the specific construction shown the spring A is curved between its ends to produce the bow, whereby it operates by its spring action, and is provided at one end with the head B for connection with the switch-tongue and is shouldered at *b* at the juncture of said head with the body of the spring, such shoulder abutting the side of the switch-tongue and aiding the head B in securing the spring at one end in connection with the switch-tongue.

As best shown in Fig. 3, it may be preferred in the practical embodiment of the invention to form the switch with a base F, having the main-line rail F′ at one side, the switch-rail E at the other side, and an intermediate recess *f*, in which the tongue D and the spring A operate. From this Fig. 3 it will be noticed the spring A is depressed below the tread-surfaces of the rails and switch-tongue sufficiently to avoid any striking thereof by the flange of the car-wheel.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination substantially as herein described, of the base having the main rail at one side, the switch-rail at the opposite side, and a recess between said rails, the switch-tongue operating in said recess and provided in its under side between its rail with a transverse recess, and the spring bent in the form of a bow, bearing at its tip against the tongue and operating between said tip and the switch-rail and provided at the end opposite its tip with a head fitting in the transverse recess in the under side of the tongue and with a shoul-

der at the juncture of said head with the body of the spring and arranged to abut the side of the tongue, substantially as and for the purposes set forth.

2. The combination of the tongue, the rail alongside the tongue, and the spring-bar operating between said rail and tongue, extending longitudinally in a general direction approximately parallel with that of the tongue, and held in place at one end by the tongue, substantially as set forth.

3. The combination of the rail, the tongue alongside that rail and having a recess in the side next the rail, and the spring operating between the rail and tongue, and extending at one end into the recess in the tongue.

4. The combination of the tongue having a transverse recess in its under side, the spring arranged to operate said tongue and provided at one end with a head fitting in the recess of the tongue and adjacent to the said head with a shoulder to abut the tongue, substantially as set forth.

5. The combination with the switch-tongue having a transverse recess in its under side at one edge, and the spring operating alongside said tongue and extended at one end in the said recess.

6. A spring for operating switch-points bent in the form of a bow, arranged at its tip end to bear against the tongue, and provided at its opposite end with a head to fit in a recess in the tongue, whereby the tongue may operate to hold the spring for operating said tongue, substantially as set forth.

7. The spring herein described, for operating the switch-tongue, the same consisting of a curved bar arranged at its tip end to bear against and actuate the tongue and having at its opposite end a head to fit in the recess of the tongue, and having adjacent to said head a shoulder to abut the tongue, substantially as set forth.

ALBERT ERNEST JAMES.

Witnesses:
RICHD. F. REED,
JOSEPH DAVIS.