

No. 616,703.

Patented Dec. 27, 1898.

D. & W. H. GRUHLKEY.
DETECTOR BAR FOR RAILROAD SWITCHES.

(Application filed Apr. 22, 1898.)

(No Model.)

Fig. 1.

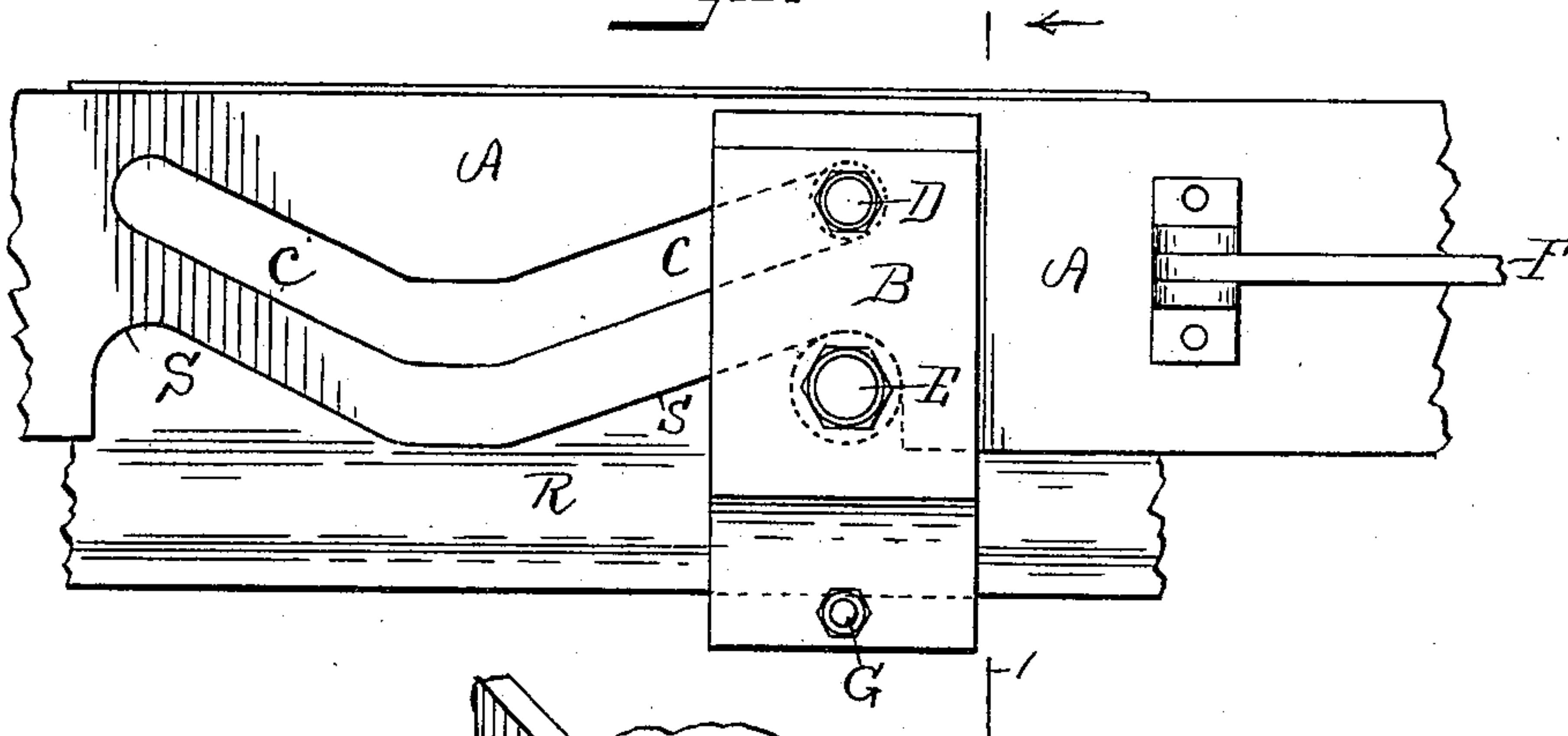


Fig. 2.

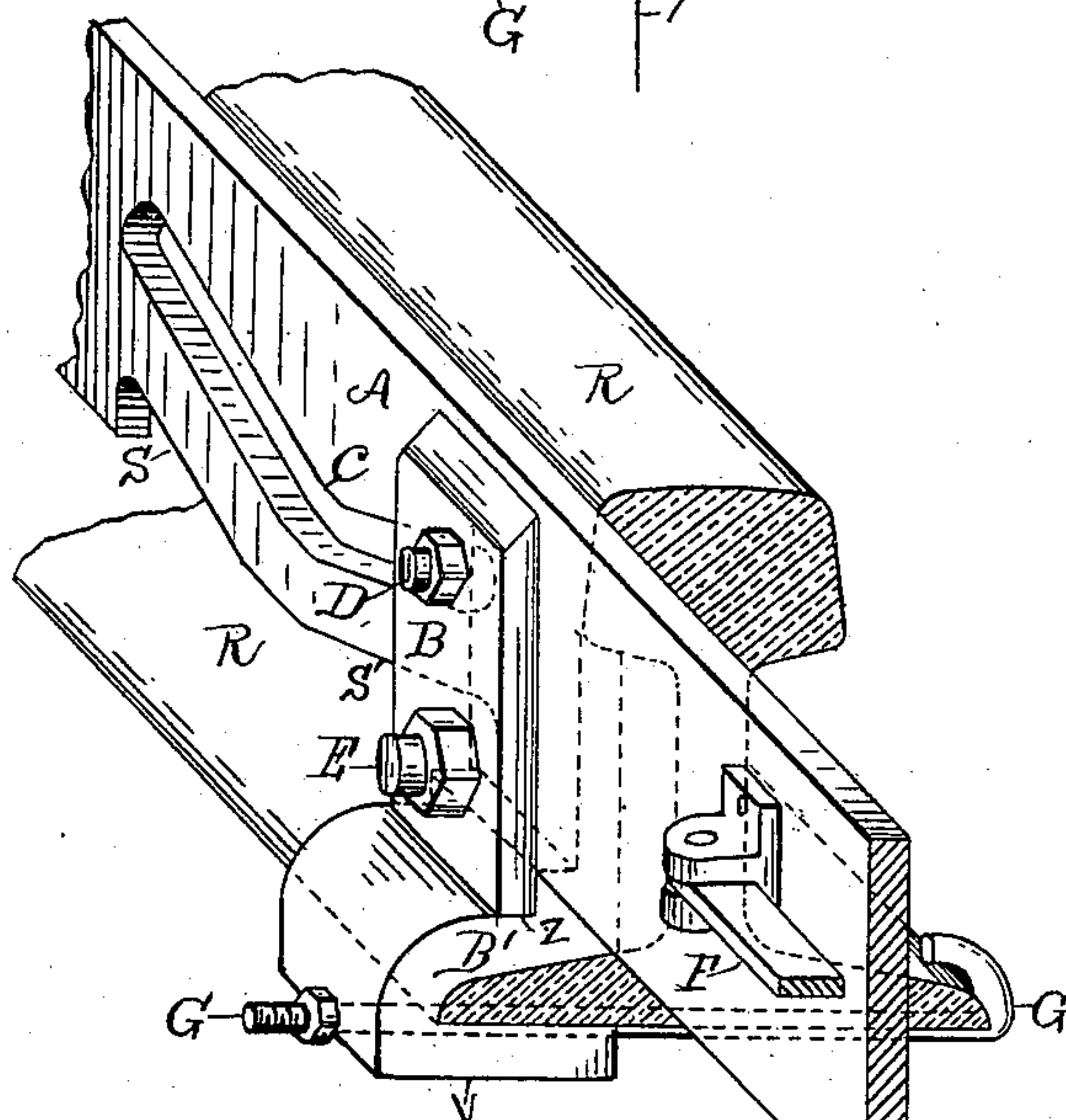


Fig. 3.

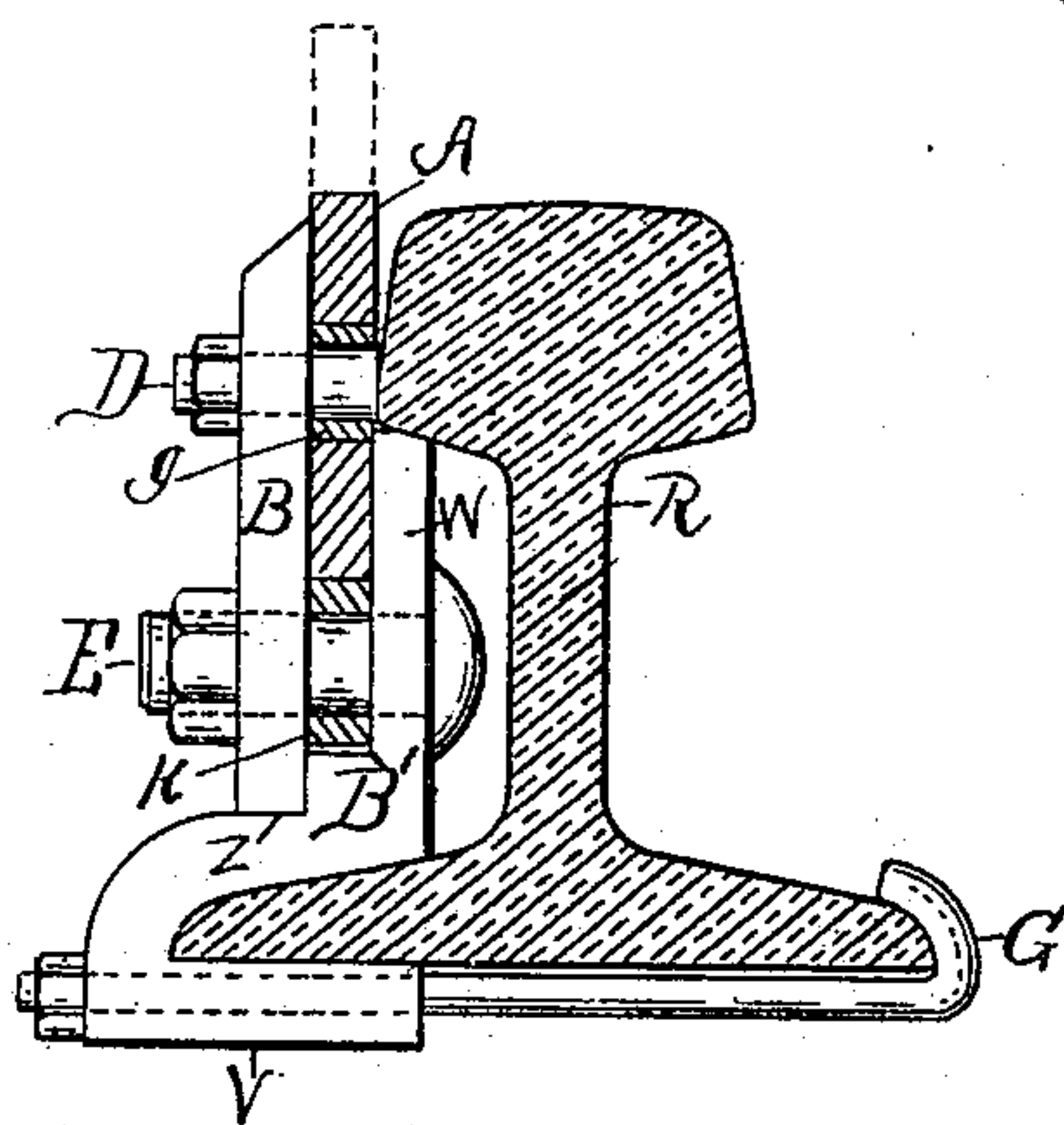
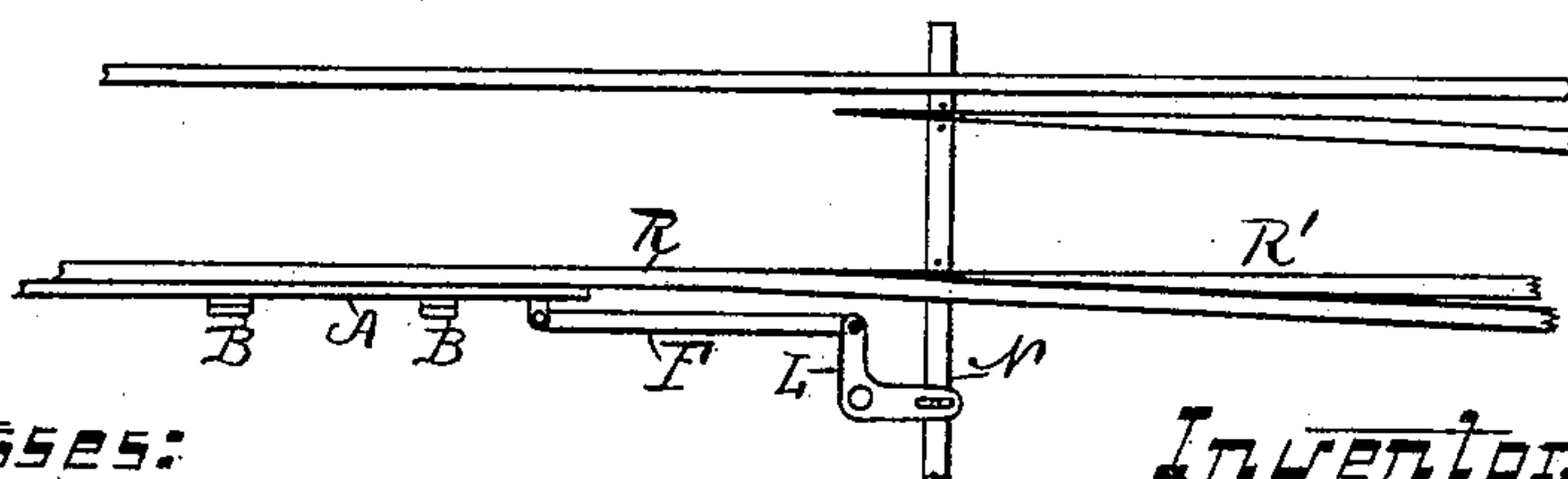


Fig. 4.



Witnesses:

Ray Hutchins
Herbert Powell.

Inventors:

Daniel Gruhlkey
William H. Gruhlkey By
Thos. H. Hutchins atty

UNITED STATES PATENT OFFICE.

DANIEL GRUHLKEY, OF MARSEILLES, AND WILLIAM H. GRUHLKEY, OF
OTTAWA, ILLINOIS.

DETECTOR-BAR FOR RAILROAD-SWITCHES.

SPECIFICATION forming part of Letters Patent No. 616,703, dated December 27, 1898.

Application filed April 22, 1898. Serial No. 678,447. (No model.)

To all whom it may concern:

Be it known that we, DANIEL GRUHLKEY, residing at Marseilles, and WILLIAM H. GRUHLKEY, residing at Ottawa, in the county of La Salle and State of Illinois, citizens of the United States, have invented certain new and useful Improvements in Detector-Bars for Railroad-Switches, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain improvements in detector-bars for railroad-switches of the kind wherein the switch is prevented from being moved while the wheels of the cars are on the detector-bar, which improvements are fully set forth and explained in the following specification and claims, reference being had to the accompanying drawings, and to the letters of reference thereon, in which—

Figure 1 is a side elevation of a portion of the detector-bar and of a portion of a railroad-rail to which it attaches and of a bracket for attaching the detector-bar to the side of the rail and showing an inclined slot and an inclined lower part in the detector-bar which bear upon bolts upon which the detector-bar rests and has end movement. Fig. 2 is a perspective view showing a portion of the detector-bar connected to the railroad-rail as it would appear ready for operation. Fig. 3 is a cross-section of Fig. 1, taken on line 1, looking in the direction of the arrow; and Fig. 4 is a plan view of an ordinary railroad-switch, showing the detector-bar located at the side of one of the main rails and showing it connected to the switch-rod.

Referring to the drawings, R represents a section or part of a railroad-rail.

A represents the detector-bar, which is intended to be made of a flat metal bar and of considerable length, so as to extend along the length of several cars that may stand on or near the switch over the detector-bar. This bar is of sufficient height when applied to the side of one of the main rails R of the switch to be of the same height as the rail and is provided with a double-inclined slot C, the extremities of which are higher than its center, and is also provided immediately below said slot with a double-inclined bearing-sur-

face S, the extremities or ends of which are higher than at its center, the said inclined surface corresponding exactly in form to that of said slot. The said detector-bar A is attached to the side of the rail R by means of brackets B', formed so as to have a flange V, which hooks under the rail-flange and is held thereto by means of the long bolt G, which is formed so its head will hook on the rail-flange and so its opposite threaded end may pass through the flange V of the bracket B' and secures the bracket to the rail by means of a nut turned on the threaded end of said bolt, as shown. Said bracket is formed so as to have the upwardly-extending flange W reach the rail-tread, as shown particularly in Fig. 3, and forms a bearing for the detector-bar to rest against.

The detector-bar A is placed alongside of the tread of the rail and against the flange W of the bracket B'. A bolt E passes through said flange under the detector-bar and through a face-plate B, which rests on the bracket on an offset Z, so as to hold it in proper place. A bushing-roller K is placed on said bolt, and the detector-bar A rests on said bushing-roller at its part having the inclined part S. A nut is turned on the outer end of said bolt, and thus connects the flange W and face-plate B and secures the detector-bar between them. The upper part of the plate B is provided with an inwardly-extending stud D, which enters the slot C of the detector-bar, and is also provided on its part in said slot with a bushing friction-roller I. A nut turned on the outer end of said stud-bolt holds it in its proper place.

The detector-bar is intended to be connected to the rail by means of several such brackets and provided at each bracket with the slot C and incline S, and is intended to be connected with the switch-rod N through the medium of the bell-crank L and link F, as shown more particularly in Fig. 4; but it may be connected with the switch-rod in any other manner, only so the switch-rod cannot be moved while the wheels of a car stand on or over the detector-bar.

In operation the detector-bar A is shown as it would appear when the switch has been set, say, for the main track, as shown in Fig.

4. If the wheels of a car should stand over the detector-bar, it could not be moved, and consequently the switch could not be moved while the car-wheels were over the detector-
5 bar, for the reason that if the detector-bar should be moved from its position shown in Figs. 1 and 2 the form of the slot C and of the incline S would cause the detector-bar to be elevated to the position shown in the
10 broken lines in Fig. 3, which would be impossible as long as it is held down by the car-wheels over it, so that there can be no danger of moving the switch in either direction so long as the wheels of a car or cars are over
15 the detector-bar, because it must move vertically as well as horizontally to permit the switch to be moved.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is as follows, to wit:

20 1. The combination of the railroad-rail R, the bracket B' V, W, the bolt G for securing said bracket to the rail, the face-plate B, bolt E for connecting said face-plate and bracket
25 and having the friction-roller K, the stud-bolt D having the friction-roller I, and the detector-bar A having the double-inclined slot

C and double incline S, and located adjacent to said rail and carried on said bolt E and stud D between said face-plate and bracket, 30 said stud-bolt working in said slot, and said bolt E arranged to be engaged by said incline S, and the means for connecting said detector-bar and switch-rod, all arranged to operate substantially as and for the purpose set forth. 35

2. The combination of the rail R, the detector-bar A arranged adjacent to said rail and at the same altitude and having the double-inclined longitudinal slot C, and the double-inclined surface S immediately below 40 said slot and corresponding in form thereto, and carried on supports passing through said slot, and in contact with said incline, and adapted to have an end and a vertical movement thereon, the means for attaching said 45 detector-bar to said rail and to the switch-rod, all arranged to operate substantially as and for the purpose set forth.

DANIEL GRUHLKEY.
WILLIAM H. GRUHLKEY.

Witnesses:

FRED TUCKER,
EMIL WALTER.