951,205.

J. B. STRONG.

SWITCH RAIL.

APPLICATION FILED JUNE 3, 1907.

Patented Mar. 8, 1910.

2 SHEETS—SHEET 1.

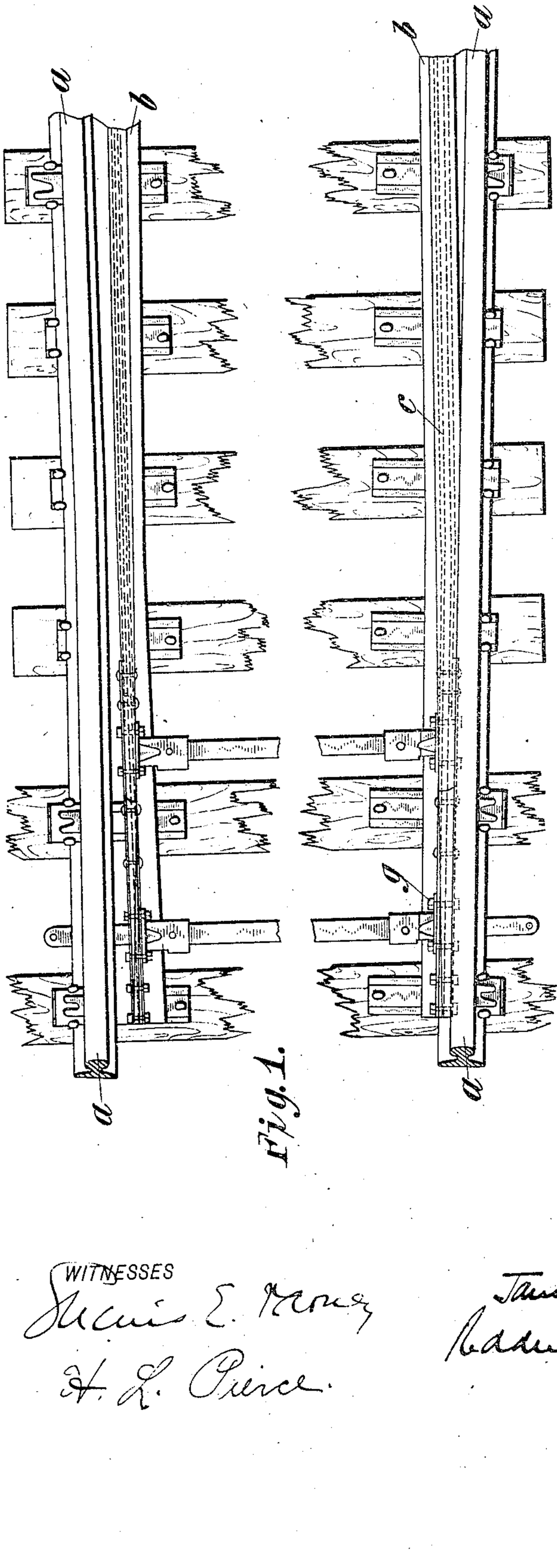

Fig. 1.

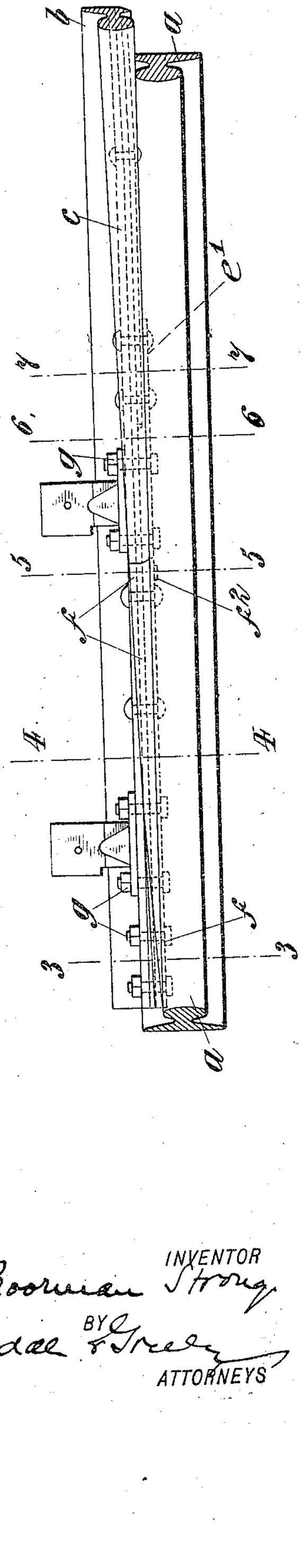

Fig. 2.

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 6.

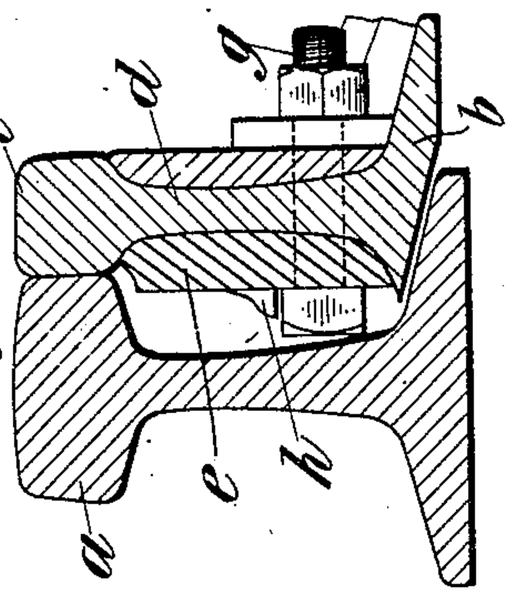


Fig. 7.

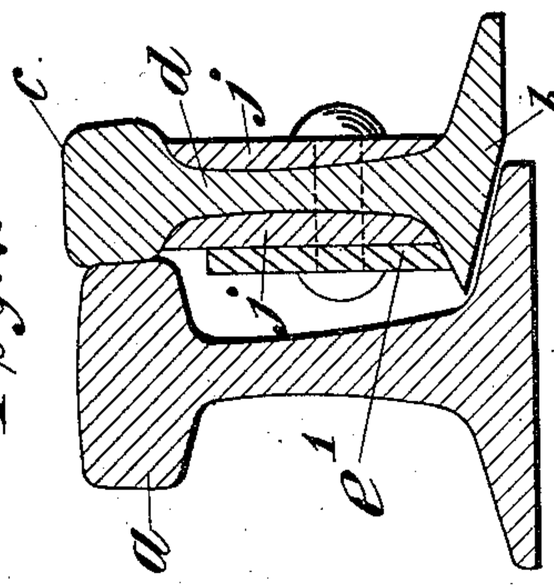


Fig. 5.

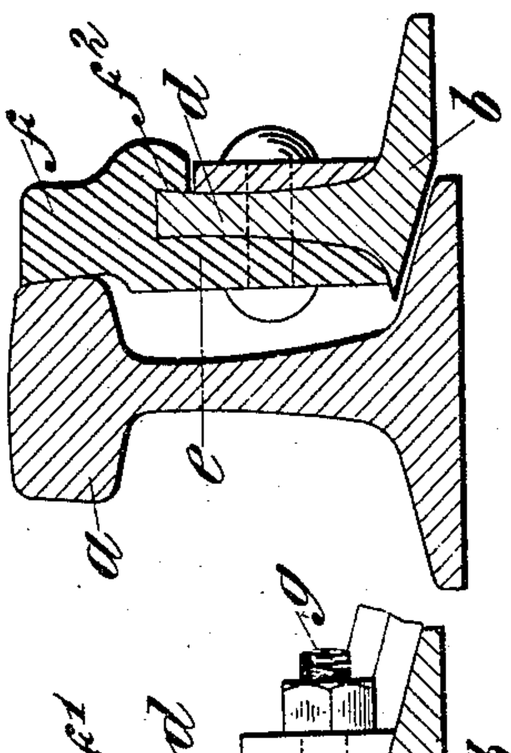


Fig. 4.

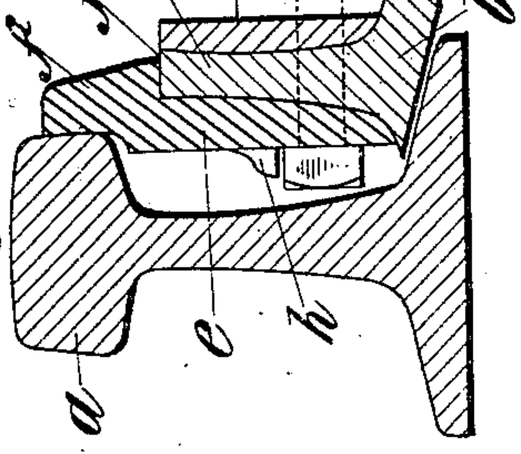


Fig. 8.

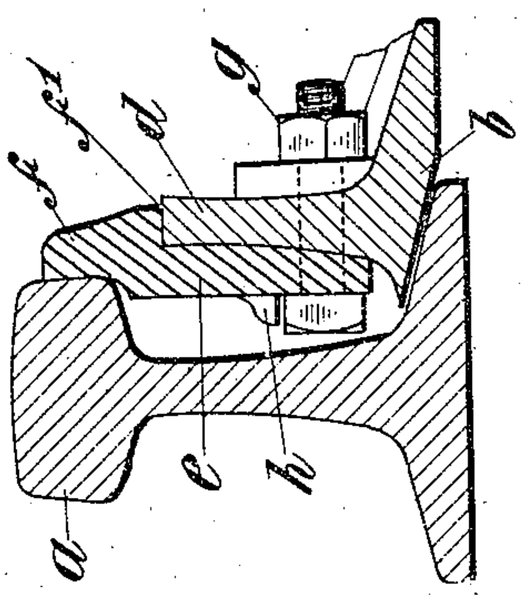


Fig. 3.

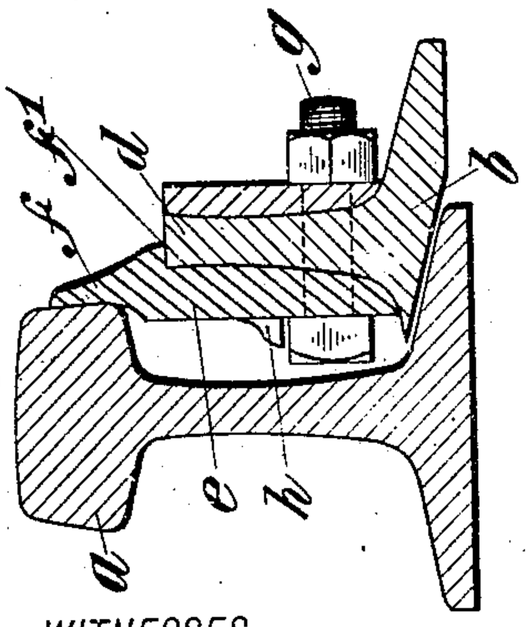
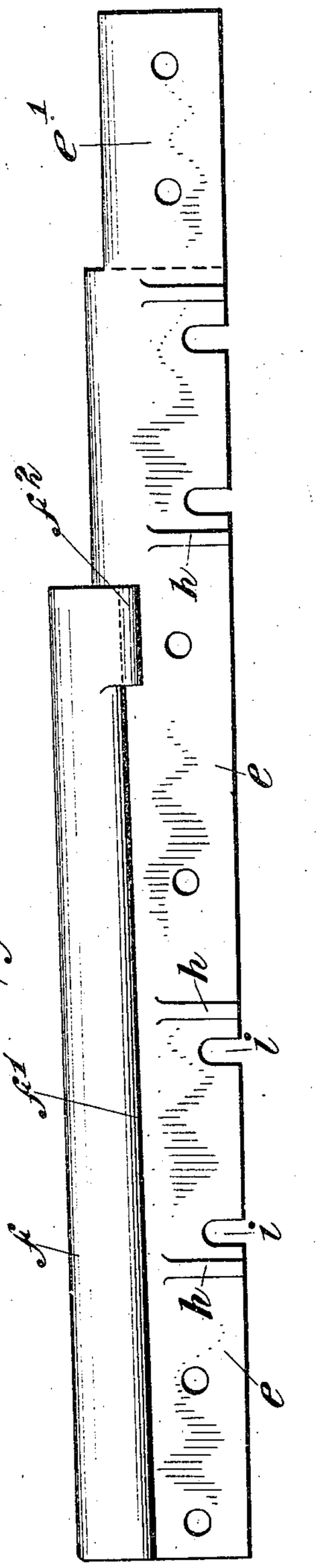


Fig. 9.



WITNESSES

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ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES BOORMAN STRONG, OF HILLBURN, NEW YORK, ASSIGNOR TO RAMAPO IRON WORKS, OF HILLBURN, NEW YORK, A CORPORATION OF NEW YORK.

SWITCH-RAIL.

951,205. Specification of Letters Patent. Patented Mar. 8, 1910.

Application filed June 3, 1907. Serial No. 376,924.

To all whom it may concern:

Be it known that I, JAMES BOORMAN STRONG, a citizen of the United States, residing at Hillburn, in the county of Rockland, in the State of New York, have invented certain new and useful Improvements in Switch-Rails, of which the following is a specification, reference being had to the accompanying drawing, forming a part hereof.

It is well known that switch rails break down and wear out at the point because of the excessive side wear to which the point portion is subjected in use, and that the entire switch rail must be discarded when the point has failed although the remaining portions of the switch rail are only slightly worn.

The main object of this invention is to provide a switch rail with a thrust plate which, while being non-load bearing, will take the side wear and which will preserve the point of the switch rail against deterioration and undue wear, so that the point portion will last approximately as long as the balance of the switch rail.

The invention consists in the new and novel features of construction and combinations of parts hereinafter set forth and claimed.

Referring to the accompanying drawings Figure 1 is a plan view of a portion of a railroad track provided with my improved switch rail. Fig. 2 is a plan view of a portion of the track showing a switch rail in its closed position on a larger scale than that shown in Fig. 1. Figs. 3, 4, 5, 6 and 7 represent cross sections on the lines 3—3, 4—4, 5—5, 6—6 and 7—7 respectively of Fig. 2. Fig. 8 represents a cross section corresponding to Fig. 4 of a modified form of switch rail embodying my invention. Fig. 9 represents a side elevation of another form of reinforcing bar.

The track or stock rails *a* are of the usual section. The switch rails *b* have their bases beveled to seat upon the stock rails, and the heads *c* are cut away for a short distance from the forward or point ends leaving the webs *d* of the desired height. The forward or point portions of the switch rails are bent outward away from the adjacent stock rails so that, when the switch rails are in their closed positions said forward portions will lie practically parallel to and at a suitable distance from the stock rail. If desired the ends of the switch rails may be thickened somewhat to provide more stiffness and strength to the switch points.

Secured to the web of each switch rail is a side bearing thrust plate *e* preferably formed of manganese steel or some hard or tough metal possessing substantial wearing qualities. Said thrust plate projects upward at the place where the head of the switch rail is cut away to a point below the top of the head of the adjacent stock or track rail so that the load will not be carried by the thrust plate. The top *f* of the thrust plate gradually tapers toward the point end of the switch rail and forms a side wearing edge that rests against the stock rail when the switch is closed. The thrust plate is also provided with an extension *e'* which engages between the head and the base of the switch rail and is preferably provided with a shoulder *f'* which seats upon the web of the switch rail. If desired this shoulder may be caused to overlap the edge of the switch rail as at f^2 to assist in holding the thrust plate in place.

The thrust plate is secured to the switch rail in any suitable manner as by bolts *g* passing through bolt holes provided therefor and preferably is provided immediately above the bolt holes with small ribs or flanges *h* which extend over the heads of the bolts and prevent same from turning. The thrust plate has no base and does not engage or rest upon the base of the stock rail, but is supported wholly by the switch rail. It may rest upon the base of the switch rail, or, as shown in Fig. 8, it may be supported by the shoulder *f'* and the bolts without being in contact with the base of the switch rail. Instead of the usual bolt holes, however, the thrust plate may be provided with slots *i* to receive the bolts, in which case the flanges *h* are arranged vertically alongside said slots as shown in Fig. 9. One or more additional reinforcing strips *j* may be provided for further security if desired.

By this construction the load is borne by the stock rail since the thrust plate does not project at any point throughout its entire length to the level of the top of the stock rail. Consequently the thrust plate is not provided with a base and may be made relatively thin and with much less metal than is required for a removable point which is

usually provided with a base portion adapted to rest upon the adjacent stock rail and which is intended and adapted to bear the load. Furthermore, in this construction the point portion is bent away from the stock rail, thus admitting more metal and lateral stiffness to remain in the base of the switch rail than in the ordinary construction.

I claim as my invention:

1. In a railway switch, the combination of a switch rail having its point portion bent away from the adjacent stock rail to allow a vertical space between the head of said stock rail and the web of said switch rail, and a thrust plate secured to said switch rail and occupying said vertical space, said thrust plate not extending above the top of the stock rail throughout its entire length.

2. In a railway switch, the combination of a switch rail having its point portion bent away from the adjacent stock rail and the web of said bent portion thickened, and a thrust plate secured to said switch rail.

3. In a railway switch, the combination with a stock rail, of a switch rail having the head removed from the point portion thereof and a side bearing thrust plate secured to the stock rail side of the switch rail and projecting above the web of the point portion of the switch rail, said thrust plate being below the top of the head of the stock rail throughout its entire length.

4. In a railway switch, the combination with a switch rail, of a thrust plate secured thereto, bolts for holding the thrust plate to the switch rail and projections formed integral with the thrust plate arranged adjacent to the bolt heads to prevent the same from turning.

5. In a railway switch, the combination with a switch rail having the head removed from the point portion thereof, of a thrust plate extending above the web of the switch rail to take the side thrust only and having slots provided in the side thereof, and means engaging in the slots to secure said thrust plate to the switch rail.

6. In a railway switch, the combination with a switch rail, of a thrust plate forming the wearing edge of the switch rail and supported upon the web of the switch rail above the base of said switch rail, substantially as described.

7. In a railway switch, the combination with a stock rail, of a switch rail having the head removed from the point portion thereof and said point portion bent away from the stock rail, and a side bearing thrust plate projecting above the web of the switch rail and provided with an extension seating upon said web, said thrust plate having its upper edge arranged below the top of the head of the stock rail throughout its entire length.

This specification signed and witnessed this 27th day of May, A. D., 1907.

JAMES BOORMAN STRONG.

Signed in the presence of—

HELEN L. PIERCE,

AMBROSE L. O'SHEA.