

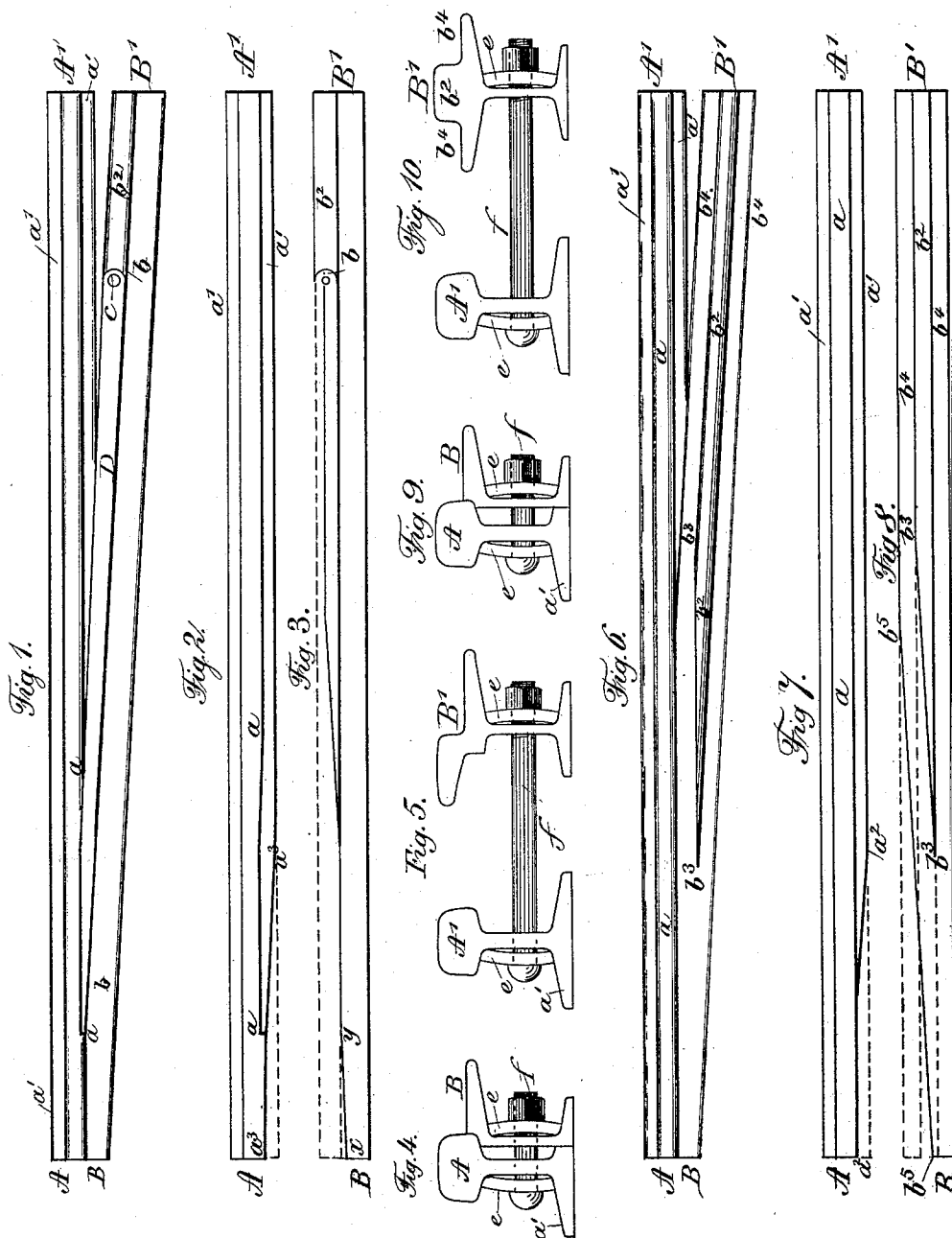
(No Model.)

2 Sheets—Sheet 1.

A. J. MOXHAM.
RAILROAD SWITCH.

No. 331,526.

Patented Dec. 1, 1885.



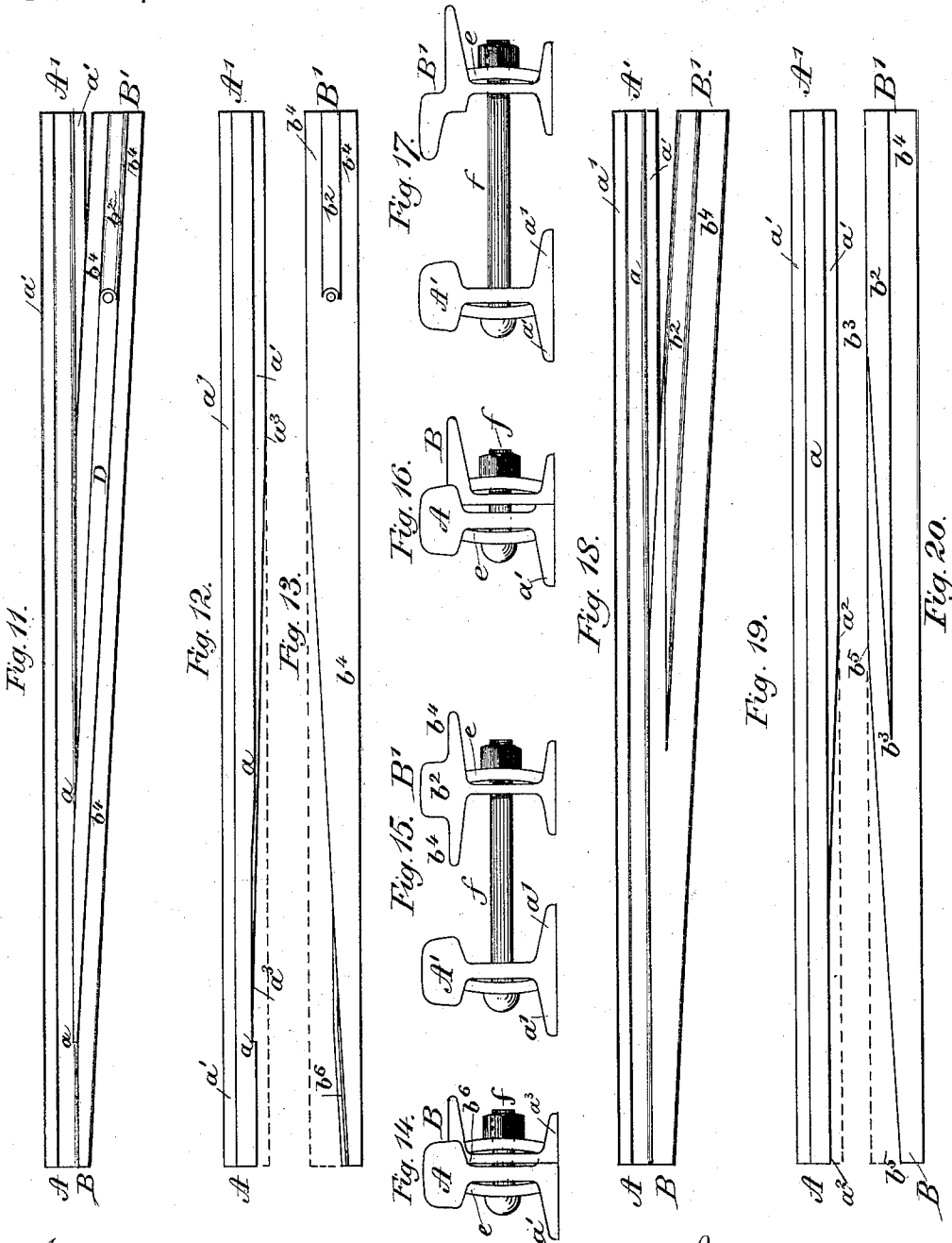
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UNITED STATES PATENT OFFICE.

ARTHUR J. MOXHAM, OF JOHNSTOWN, PENNSYLVANIA.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 331,526, dated December 1, 1885.

Application filed October 7, 1885. Serial No. 179,207. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR J. MOXHAM, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Railroad-Switches; which invention or improvement is fully set forth and illustrated in the following specification and accompanying drawings.

The object of this invention is to make a railroad-switch, more particularly for street-car tracks, built up of one T-rail and a girder tram-rail, the latter of either a center-bearing or side-bearing girder form.

The invention will first be particularly hereinafter described, and then specifically set forth in the claim.

The invention will be described in connection with the several figures, twenty in number, of the accompanying drawings, each figure being in its regular order described in detail by referring to the letters respectively designating its several parts.

Figure 1 shows in plan a switch composed of the T-rail A A' and a side-bearing girder-rail, B B', and provided with a movable tongue, D. From the points *a* to *a* the head of the T-rail A A' is cut away to protect the point of the movable tongue D, turning upon a center, *c*. The lower flanges of said T-rail are indicated by the letters *a'*, the upper flange or side tram of the side-bearing rail B B' by the letter *b*, and the head of said rail by the letter *b'*.

Fig. 2 shows in plan the rail A A' of Fig. 1 detached. It also shows where one of the lower flanges of said rail is cut away between the points *a'* *a'*, the dotted line showing the flange before it is so cut.

Fig. 3 shows in plan the side-bearing rail B B' of Fig. 1 detached, and with tongue D removed, the dotted line showing that part of the head cut away in order to operate the movable tongue D, shown in Fig. 1, and the line *x y* the angle at which the side tram *b* is cut.

Fig. 4 shows on an enlarged scale an end elevation at A B of Fig. 1, looking toward said end.

Fig. 5 shows on an enlarged scale an end elevation at A' B' of Fig. 1, looking from the end A B.

Fig. 6 shows in plan a "blind switch"—that is, having a fixed instead of a movable tongue, composed of the T-rail A A' and a center-bearing girder-rail, B B'. The letters *a a'* indicate respectively the head and lower flanges of the T-rail; *b' b'*, the head of the center-bearing rail; *b' b'*, the cut part of said head, and *b' b'* the side trams or upper flanges of said center-bearing rail.

Fig. 7 shows in plan the rail A A' of Fig. 6 detached, one lower flange, *a'*, being cut away between the points *a'* *a'*, and the dotted line showing said flange before being so cut.

Fig. 8 shows in plan the rail B B' of Fig. 6 detached, one side tram, *b'*, being cut away between the points *b'* *b'*, and the dotted lines showing the lines of the entire rail before being cut through head and side tram, as just explained.

Fig. 9 shows on an enlarged scale an end elevation, at A B of Fig. 6, looking at said end.

Fig. 10 shows on an enlarged scale an end elevation at A' B' of Fig. 6, looking from the end A B.

Fig. 11 shows in plan a switch composed of the T-rail A A', and a center-bearing girder-rail, B B', provided with a movable tongue, D. From the points *a* to *a* the head of the T-rail A A' is cut away to protect the point of the movable tongue D. The lower flanges of said T-rail are indicated by the letters *a'*, the side trams of the center-bearing rail B B' by the letters *b'*, and the head of said rail by the letter *b'*.

Fig. 12 shows in plan the rail A A' of Fig. 11 detached. It also shows one of the lower flanges, *a'*, of said rail cut away at an angle, *a'* *a'*, the dotted line showing the section of metal removed.

Fig. 13 shows in plan the center-bearing-rail B B' of Fig. 11 detached, and with tongue D removed. This figure also shows the floor left for the movable tongue D by cutting away the head of the rail, and also part of the web cut, as shown at *b'*, exposed at the end B.

Fig. 14 shows on an enlarged scale an end elevation at A B of Fig. 11, looking toward said end, the cutting of the web at *b'* being clearly shown.

Fig. 15 shows on an enlarged scale an end

elevation at A' B' of Fig. 11, looking from the end A B.

Fig. 16 shows on an enlarged scale an end elevation of Fig. 18, hereinafter described, at A B, looking toward said end.

Fig. 17 shows on an enlarged scale an end elevation of Fig. 18 at A' B', looking from the end A B.

Fig. 18 shows in plan a blind switch, having a fixed tongue, and composed of the T-rail A A' and a side-bearing girder-rail, B B'.

Fig. 19 shows in plan the rail A A' of Fig. 18 detached, the dotted line indicating the part of one of the lower flanges, a' , cut away between the points a^2 a^2 .

Fig. 20 shows in plan the side-bearing rail B B' of Fig. 18 detached, the head b^2 and side tram, b^4 , being cut away, respectively, as shown, between the points b^3 b^3 and b^5 b^5 , and the dotted line showing the outline plan continued of the uncut rail.

In the several end elevations above described the rails are shown bolted and tied securely together by bolts f and short sections of bars e , forming washers having a splice-bar fit, which said washers give a firm and secure bearing for the heads and nuts of the bolts f when set up hard in place.

The advantages arising from constructing a switch of one T-rail and one girder tram-rail may be briefly summarized as follows: In switches made of girder street-rails, of whatever form of cross-section, one end must diverge to throw the cars in the desired direction. It is always therefore necessary to plane and shape both rails to a considerable extent; but by using one plain T-rail in combination with either a side bearing or a center bearing rail the planing off of one tram is avoided,

and the work of construction and consequent cost therefore considerably reduced. Such varieties of T-rails, moreover, are made and always procurable, it is quite easy to select T-rails of the same height as any of the girder-rails in general use, and as such T-rails are much cheaper than girder-rails a further reduction in cost is effected. The girder-rail will always afford ample floor-room for the switch where a movable tongue is used. It will be thus observed that it is immaterial whether a center-bearing girder tram-rail or a side-bearing girder tram-rail be used in conjunction with a T-rail for constructing the switch, for the tram on one side or the other of a center-bearing rail is cut, and upon the one side upon which the tram is located, if a side-bearing girder-rail. The actual cutting and fitting is the same in each case.

For connecting the ends of these switches to the main rails of the track any of the various forms of well-known splice-bars or rail-joints can be used, but preferably, of course, such as may be used for making the joints of the main rails.

Having thus fully described my said improved switch as of my invention, I claim—

A railway-switch for street-car tracks, composed of a T-rail and a rolled girder tram-rail cut and fitted together at the necessary angle to deflect the car, secured together at their junction and at their divergent ends to the main rails of the track, substantially as and for the purposes set forth.

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