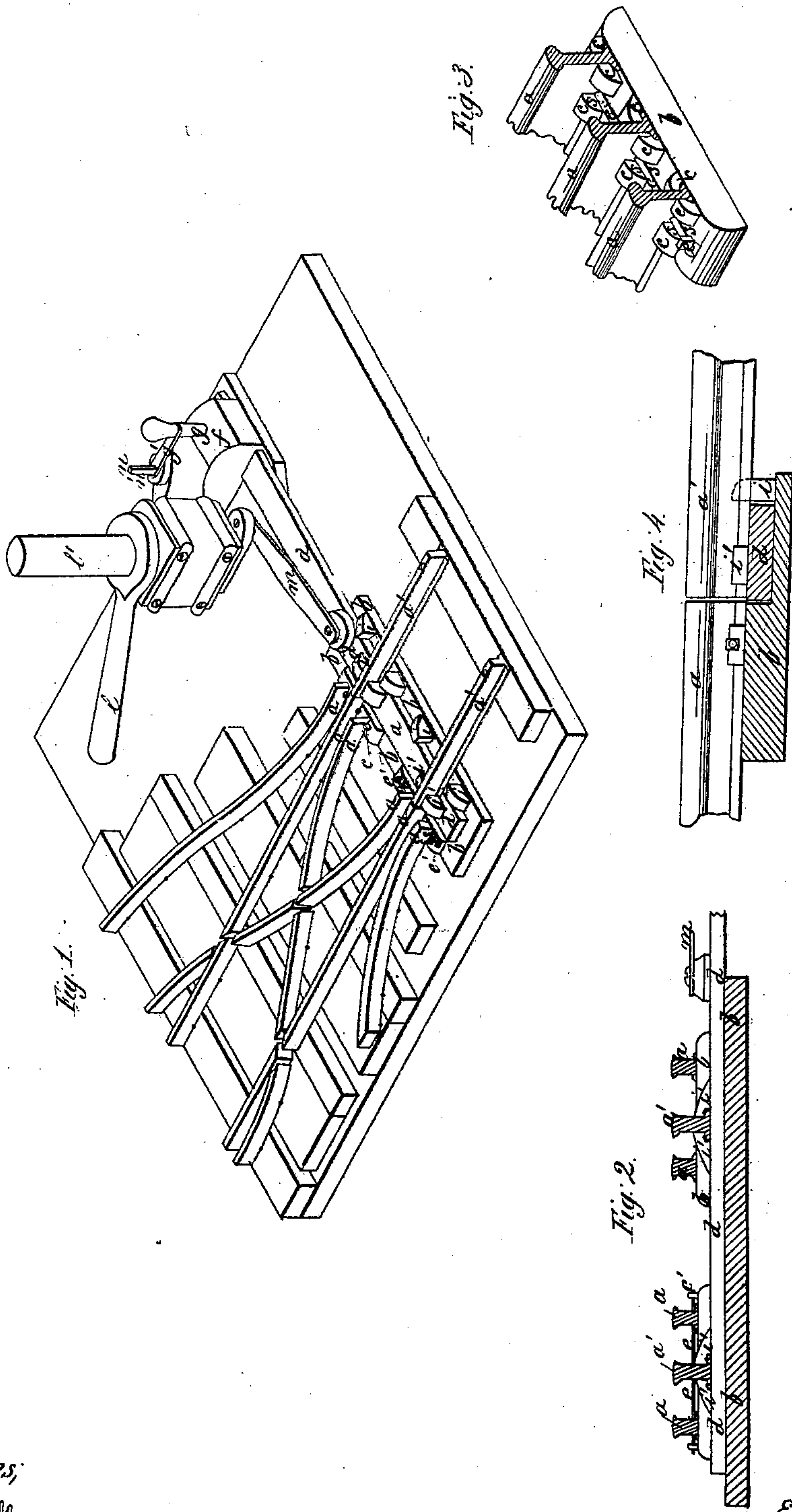


*E. Yardley.*

*Railroad Switch.*

*N<sup>o</sup> 98,138.*

*Patented Dec. 21, 1869.*



*Witnesses;*  
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*his Attys*



# United States Patent Office.

EDMUND YARDLEY, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 98,138, dated December 21, 1869.

## IMPROVEMENT IN RAILWAY-SWITCHES.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, EDMUND YARDLEY, of the city of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented a new and useful Improvement in Railroad-Switches and Switch-Chairs; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is a perspective view of a railway-switch, illustrative of my improvement;

Figure 2 is a cross-section thereof through the switch-bridle;

Figure 3 shows in perspective my mode of bolting the stationary rails to the head-chair; and

Figure 4 is a vertical cross-section of the chair and switch-bridle, and a side view of the rails, and longitudinally therewith.

Like letters of reference indicate like parts in each.

The nature of my invention consists—

First, in the arrangement of the switch-bridle under the movable ends of the switch-rails, and between such ends and the chair or chairs which support them at the ends;

Second, in the construction of a switch-chair with a groove, shoulder, or offset in one end, of a depth equal, or about equal to the thickness of the switch-bridle to be used therewith;

Third, in bolting the stationary rails of the switch-track to the head-chair.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and mode of operation.

*a a* represent the stationary rails, and *a'*, the movable rails of a railway-track at the place of inserting a switch, which rails are of any known form.

The contiguous ends of these rails are supported by a head-chair, *b*, which consists of a single iron block, properly supported by ties, and extending across the track from outside rail to outside rail.

This head-chair is cast with lips *c* on one edge, properly arranged, so as to embrace the webs of the rails *a*, which are inserted therein.

These lips, however, are notched, as shown at *s*, fig. 3.

The ends of the rails *a* have holes punched through their necks, just above their webs, at such points that bolts *e* passed through will lie along the notches *s* and the head at one end, and nut *e'*, at the other end of each bolt, will bear against the lips *c*, and aid in holding the rails *a* firmly and steadily in position, against both the lateral and longitudinal strain or force to which they are subject from passing trains.

These features, the head-chair and bolts, are important, since they strengthen materially that part of the track which is most liable to get out of order.

That part of the head-chair *b* which is designed to support the switch-rails, is made with a groove or offset, as shown in fig. 4, the depth of such groove below the bearing-face on which rest the rails *a*, being equal, or about equal to the thickness of the bridge *d*, which works or is designed to work therein.

The bridge *d*, which works in this groove or offset, carries on its upper face the switch-rails *a'*, the latter being held in place, so as to be moved with the shifting of the bridge *d*, by lips *i*, which bear on the webs of the switch-rail *a'*.

The bridge *d* may be held in place on the chair *b* by the edges of the groove on either side of it, or by lugs *i*, projecting upward on either or both sides.

The construction and arrangement described differ from and are superior to those of the devices in ordinary use for like purposes, in the following respects:

In the ordinary construction of switches, the ends of the moving rails rest on a plain chair, and have no side or lateral support at that point, to steady them under the heavy strain to which they are subject from passing trains.

Also, the switch-bridle is usually attached to the rails *a'* back of the chair, and, consequently, at some little distance from the ends of the rails. Consequently, such a bridge affords no support to the rails, and, in fact, is not designed for any such purpose; but by arranging a bridge which has embracing-lugs *i* immediately under the ends of the switch-rails *a'*, and between such ends and chair or chairs *b* which support them, I provide not only for giving to such shifting rails a more exact length of throw, but also give them a lateral and vertical support, which relieves them of a great part of the strain on them, and greatly increases their durability.

I have described the chair *b* as extending across the track, from outside rail to outside rail. That feature of the construction is not essential, as a separate chair, with a raised part on one edge, for a bearing-surface for a stationary rail, *a*, and a groove or offset, as described, for a bridge which carries a shifting rail, *a'*, may be used under the opposite track-rails, the important and essential feature being to interpose the shifting bridge between the ends of the shifting rails and the chair which supports them, and yet have both the shifting and fixed rails always on the same level, or nearly so, and such construction I include in my invention.

I am aware that a bridge, having no joint between the locking-place and the rail opposite thereto, has been attached to shifting rails back of the chair, whereas, in my invention, the bridge rests on the chair.

The shifting-devices may be such as are shown in the drawing, or of any other well-known construction.

The switch-bridle *d*, I prefer to make without any joint between the outermost of three points, to wit,



the points where the rails rest on it and the point at which it is locked.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The arrangement of a switch-bridle, between the movable ends of the shifting rails of a railroad-switch and the chair or chairs which support such ends, substantially as above described.

2. A switch-chair, having a raised bearing-surface for the stationary rail or rails, and an offset, groove, or depression, in combination with a bridle, interposed

between the chair and the ends of the shifting rails, substantially as above described.

3. The bolts *s*, passing through the webs of the rails *a*, and along notches in the lips *c*, substantially as described.

In testimony whereof, I, the said EDMUND YARDLEY, have hereunto set my hand.

EDMUND YARDLEY.

Witnesses:

A. S. NICHOLSON,  
THOS. B. KERR.