

No. 789,842.

PATENTED MAY 16, 1905.

J. DELLWO.
RAILROAD SWITCH.
APPLICATION FILED AUG. 12, 1904.

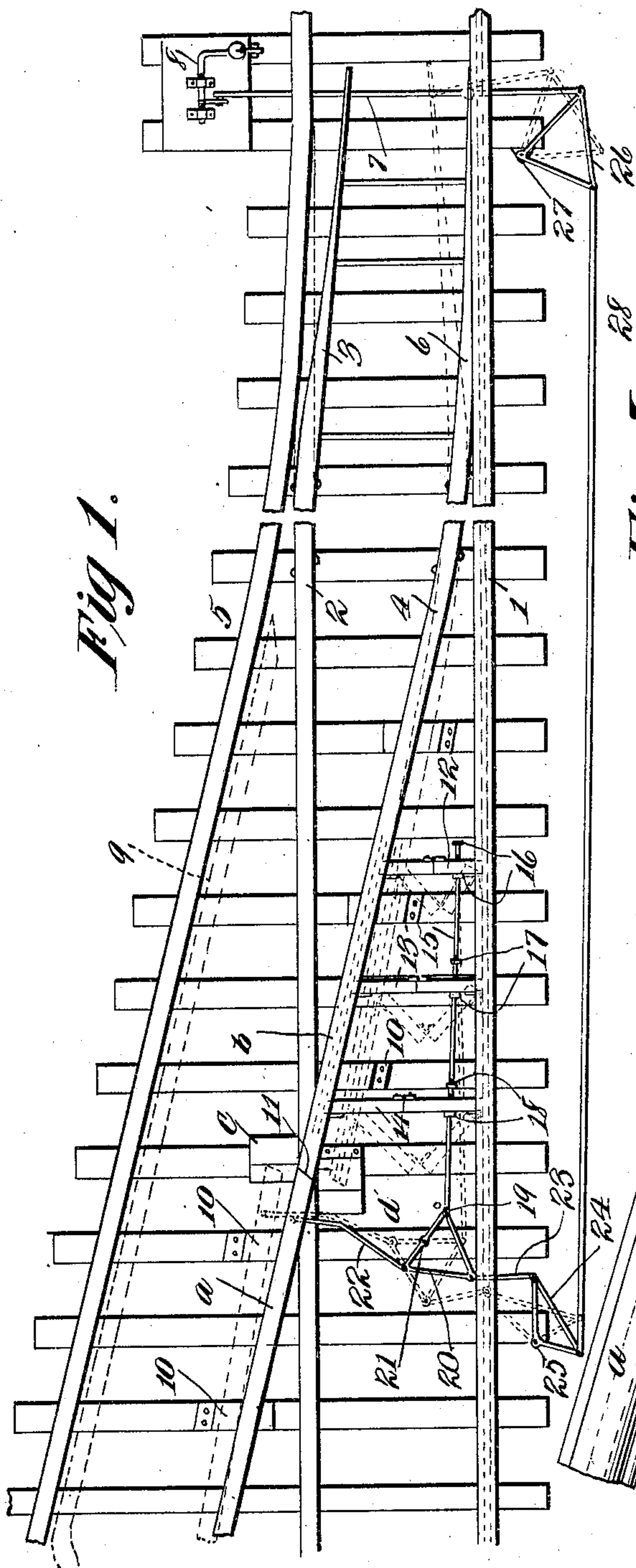


Fig. 1.

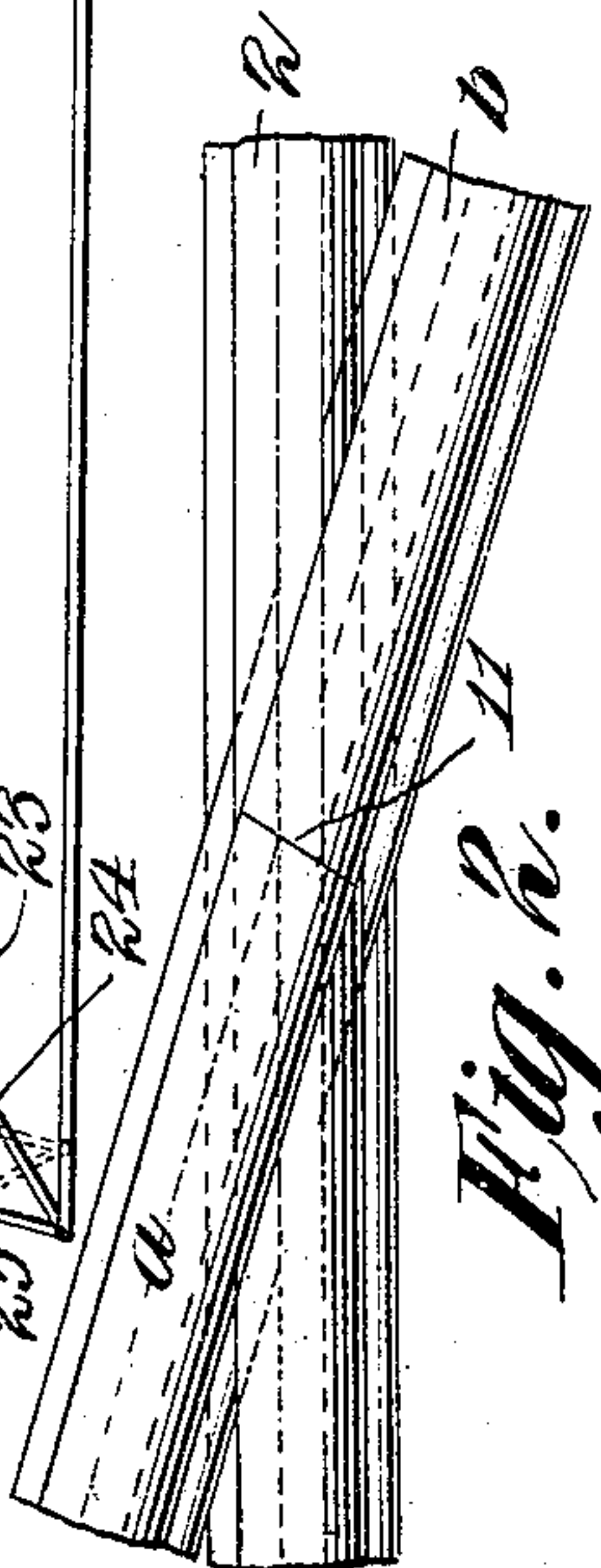


Fig. 2.

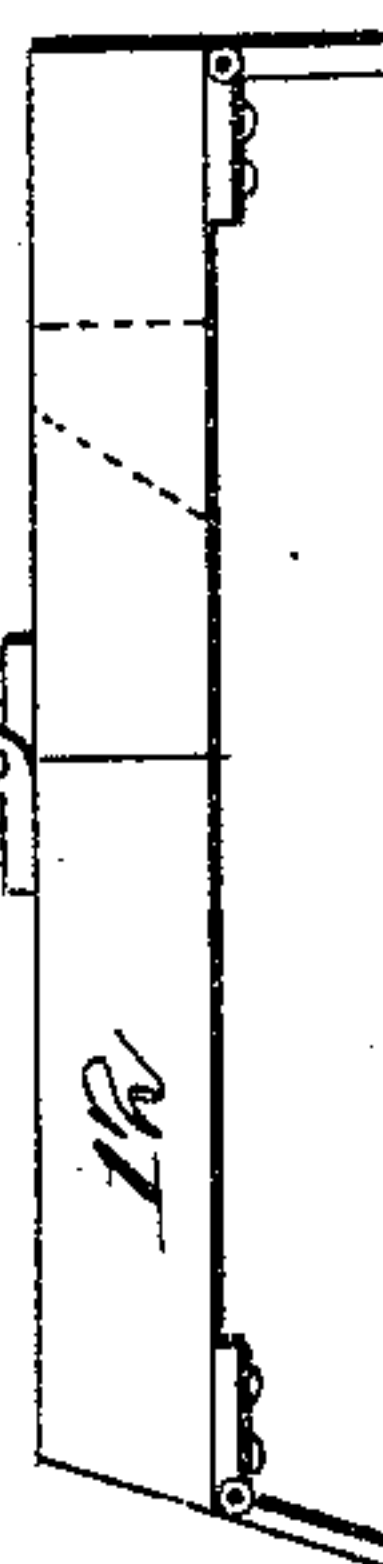


Fig. 3.

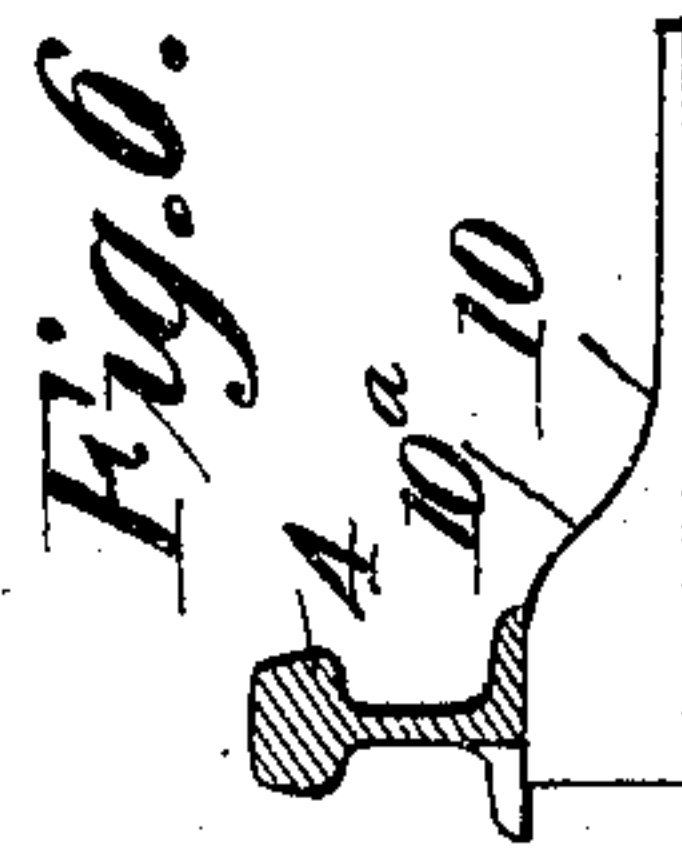


Fig. 4.

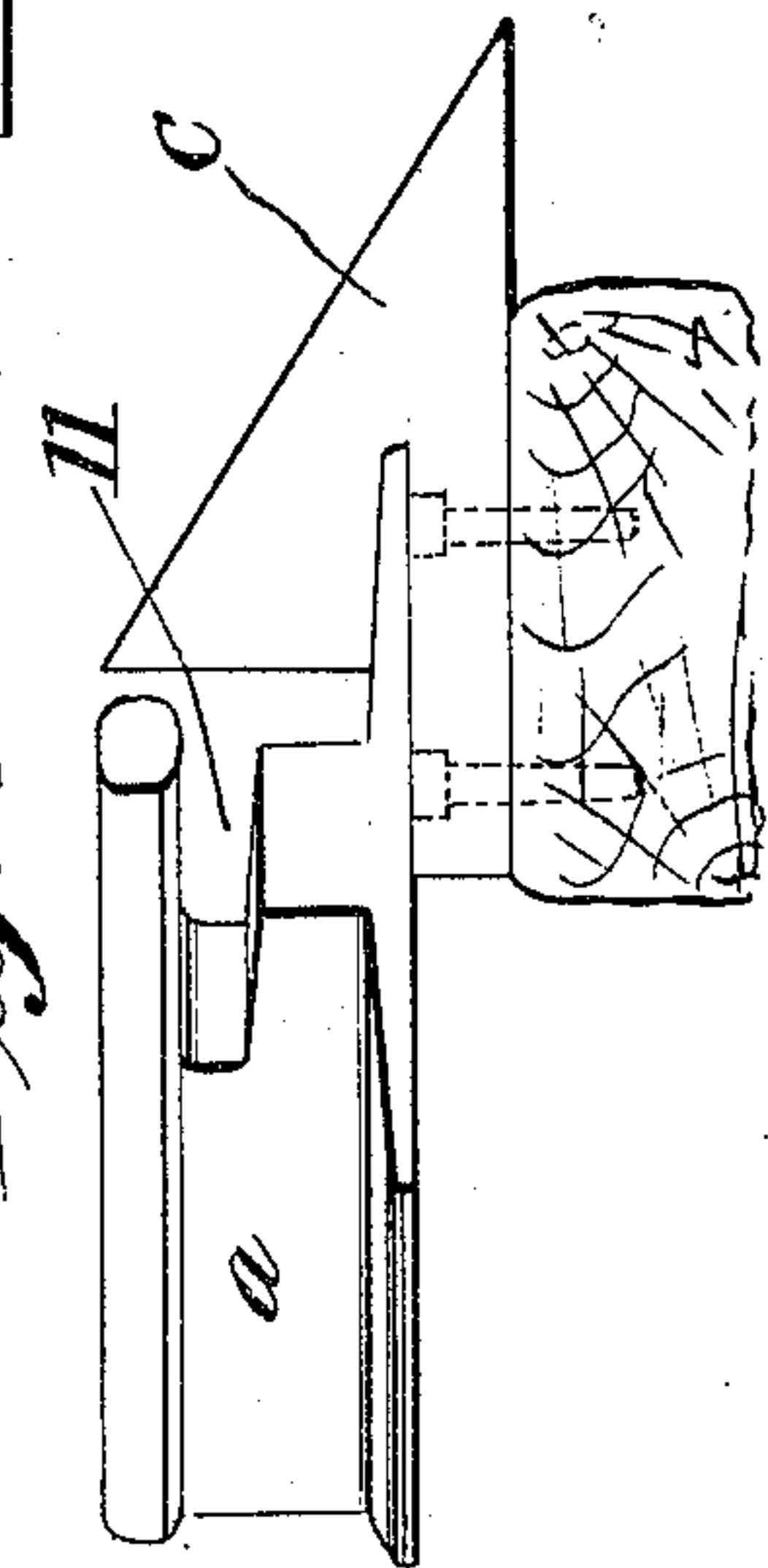


Fig. 5.



Fig. 6.

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UNITED STATES PATENT OFFICE.

JOHN DELLWO, OF GRANTSBURG, WISCONSIN, ASSIGNOR OF ONE-HALF
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RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 789,842, dated May 16, 1905.

Application filed August 12, 1904. Serial No. 220,520.

To all whom it may concern:

Be it known that I, JOHN DELLWO, a citizen of the United States, residing at Grantsburg, in the county of Burnett and State of Wisconsin, have invented a new and useful Railroad-Switch, of which the following is a specification.

This invention relates to lead-rails such as are designed to dispense with the use of frogs. The objects of the invention are to improve, simplify, and strengthen the construction of such devices.

With these objects in view the invention resides in the novel combination and arrangement of parts and in the details of construction hereinafter described with reference to the accompanying drawings, forming part of this specification, wherein—

Figure 1 is a plan view. Fig. 2 is a detail plan showing the lead-rail crossing the main rail; Fig. 3, a side elevation of the construction shown in Fig. 2. Fig. 4 is a detail perspective showing the cut-away form of the lead or side rail and the beveled guard-block; Fig. 5, a plan view of a toggle-lever used in connection with the device. Fig. 6 is a sectional detail view of a part of the device.

Like reference-characters indicate like parts in the different views.

The rails of the main line are designated by the numerals 1 and 2, the rail 2 being formed with a switch-section 3. The rails of the side line are designated by 4 and 5, the rail 4 being formed with a switch-section 6. It will be observed that the rail 5 merges into the rail 2 and that the switch-section 3 cooperates therewith. The switch-sections 3 and 6 are adapted to be operated simultaneously by means of a cross-rod 7, connected with a switch-lever or other suitable device 8, one switch-section of course being moved into contact with the adjacent rail at the same moment that the opposite switch-section is moved away from the opposite rail. A safety-rail 9 may be arranged near the rail 5, if deemed necessary. The rail 4 at the point where it crosses the rail 2 is divided into two sections *a* and *b*, which are movable laterally with respect to each other.

Adjacent to the ends of the rail-sections *a*

and *b* on opposite sides of the rail 2 are beveled guard-blocks *c* and *d*, which serve to protect the ends of the rail-sections when they are opened in the manner hereinafter described.

Beneath the rail-sections *a* and *b* is disposed a plurality of plates 10, which serve not only as bearing-surfaces upon which the rail-sections may slide laterally, but also as a means of elevating the rail 4 above the rail 2, this function being secured by having the upper faces of the plates beveled or inclined, as shown at 10^a in Fig. 6. The abutting end of the rail-sections *a* and *b* are cut away, as shown at 11, in such manner that when they are moved into alinement they meet above the rail 2.

Attached to the rail-section *a* is a plurality of toggle-levers 12, 13, and 14, each of which is attached at its opposite end to the rail 1. The joints of the toggle-levers are broken simultaneously by means of a rod 15, having three sets of collars 16, 17, and 18 thereon. The collars 16, which contact with the toggle-lever 12, are spaced a considerable distance apart, the collars 17, which contact with the toggle-lever 13, being set a little closer together, and the collars 18, which contact with the toggle-lever 14, being set still closer together. This arrangement of the collars compensates for the relative degrees to which the different levers bend, it being apparent that the shortest lever 12 will bend at a sharper angle than either of the other two, and, furthermore, the disposition of the collars causes the longest lever 14 to open or bend first, the middle lever 13 next, and the shortest lever 12 last. By the manner of the disposition of the toggle-levers the rail-section *a* is braced or jammed securely in place when the side line is in use, and the levers are opened successively and easily after a train has passed.

The rod 15, by which the toggle-levers 12, 13, and 14 are operated, is connected at 19 to a bell-crank lever 20, fulcrumed at 21. The lever 20 is connected, by means of a link 22, with the rail-section *b*, by which arrangement when the lever is rocked in one direction the track-sections *a* and *b* are simulta-

neously moved together, and when the lever is rocked in the opposite direction the sections are moved away from each other. It will be observed that no toggle-levers are necessary for the rail-section *b*, as the train passing along the rails 4 and 5 in either direction has a tendency to spread them apart, and consequently the rail-section *b* is adequately braced against the rail-section 2.

10 A link 23 connects the bell-crank lever 20 with a second bell-crank lever 24, fulcrumed at 25, and connecting the bell-crank lever 24 with a third bell-crank lever 26 is a rod 28, which is fulcrumed at 27. The third bell-
15 crank lever is connected with the cross-rods 7.

The operation of the improved switch will be apparent from the foregoing description in connection with the drawings. By throwing the switch-lever 8 in one direction the
20 switch-section 6 is moved away from the rail 1, the switch-section 3 is moved against the rail 2, the rail-sections *a* and *b* of the side line are moved away from each other and from the rail 2, and the main line is opened. By
25 throwing the switch-lever 8 in the opposite direction the movements described are reversed, and the main line is closed while the side line is opened.

By reason of the fact that the sections *a*
30 and *b* of the rail 4 meet above the rail 2 said rail-sections are necessarily in a comparatively high plane, which causes the rail 4 to be higher than its companion rail 5, thus grading the track properly upon a curve.

35 The guard-blocks *c* and *d*, with their beveled ends, protect the ends of the rail-sections *a* and *b*, preventing them from being battered or bent by chains or the like dragging from passing trains or from any other
40 cause.

The switch of this invention is strong, simple, durable, and inexpensive in construction, as well as thoroughly reliable in action. In its novel combination and arrangement of
45 parts and in its details of construction it presents an improvement over prior devices of a similar character.

Changes in the precise embodiment of invention illustrated may be made within the scope of the following claims without departing from the spirit of the invention.

Having thus described the invention, what is claimed is—

1. A switch having movable rail-sections, a plurality of toggle-levers connected with
55 one section to flex the same, and a rod connecting the series of levers and operating to break the joints thereof.

2. A switch having movable rail-sections, a plurality of toggle-levers progressively increasing in length in one direction, and connected with one of the rail-sections, and a rod connecting the series of levers and operating to break the joints thereof.

3. A switch having movable rail-sections, the opposed ends of which are notched to meet above an adjacent rail, a plurality of
65 toggle-levers connected with one section to flex the same, and a rod connecting the series of levers and operating to break the joints thereof.

4. A switch having movable rail-sections, the opposed ends of which are notched to meet above an adjacent rail, a plurality of
75 toggle-levers progressively increasing in length in one direction and connected with one of the rail-sections, and a rod connecting a series of levers and operating to break the joints thereof.

5. A switch having movable rail-sections the opposed ends of which are notched to meet above an adjacent rail, a plurality of
80 toggle-levers connected with one section to flex the same, a rod connecting the series of the levers and operating to break the joints thereof, and means to protect the ends of the sections when opened.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN DELLWO.

Witnesses:

AND. A. ANDERSON,
OLE ANDERSON.