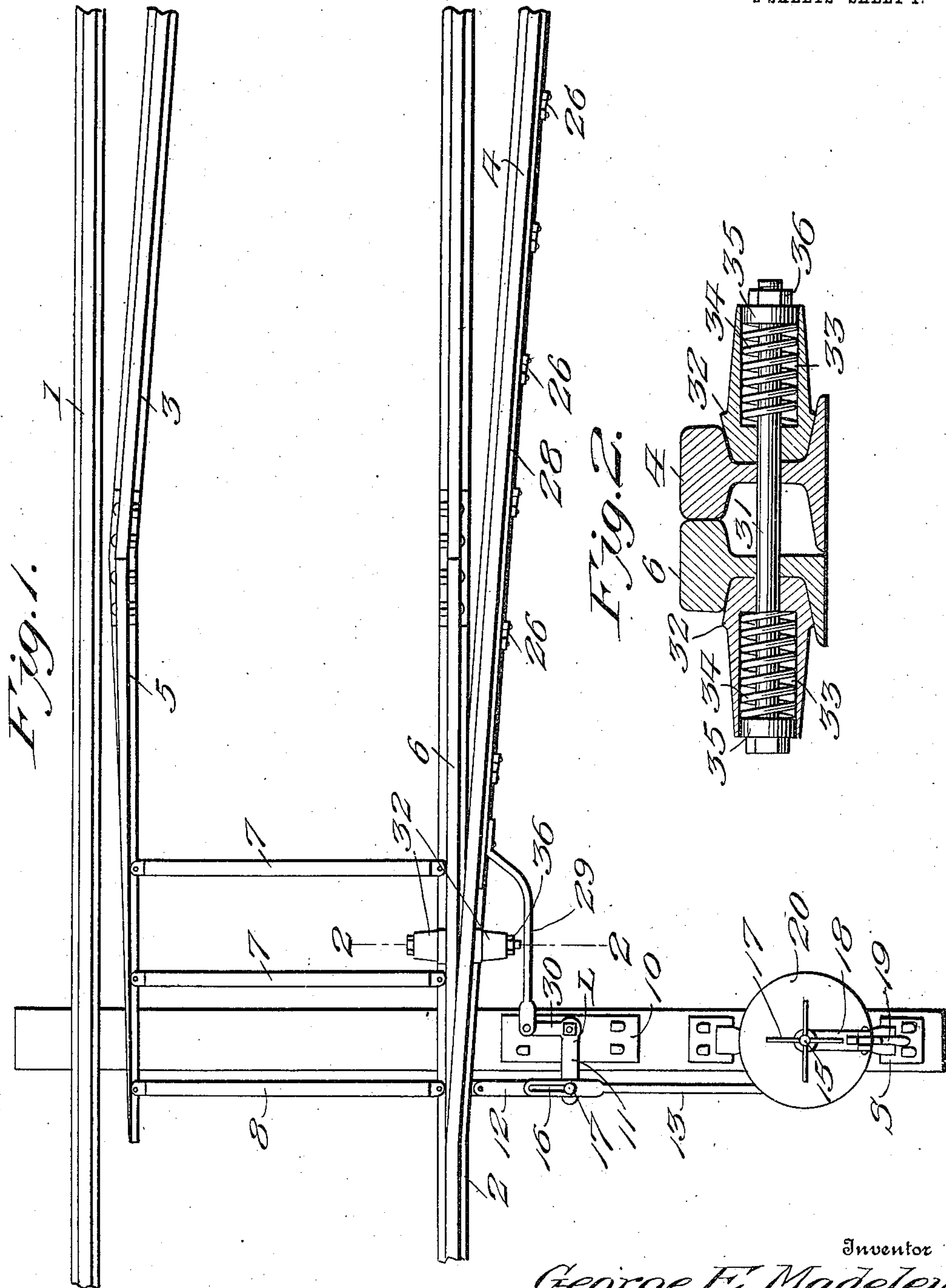


No. 847,089.

PATENTED MAR. 12, 1907.

G. E. MADELEY.
RAILROAD SWITCH.
APPLICATION FILED JULY 11, 1906.

2 SHEETS—SHEET 1.



Witnesses

Edmund G. McKee
Wm. H. North

Inventor

George E. Madeley

By

Victor J. Evans

Attorney

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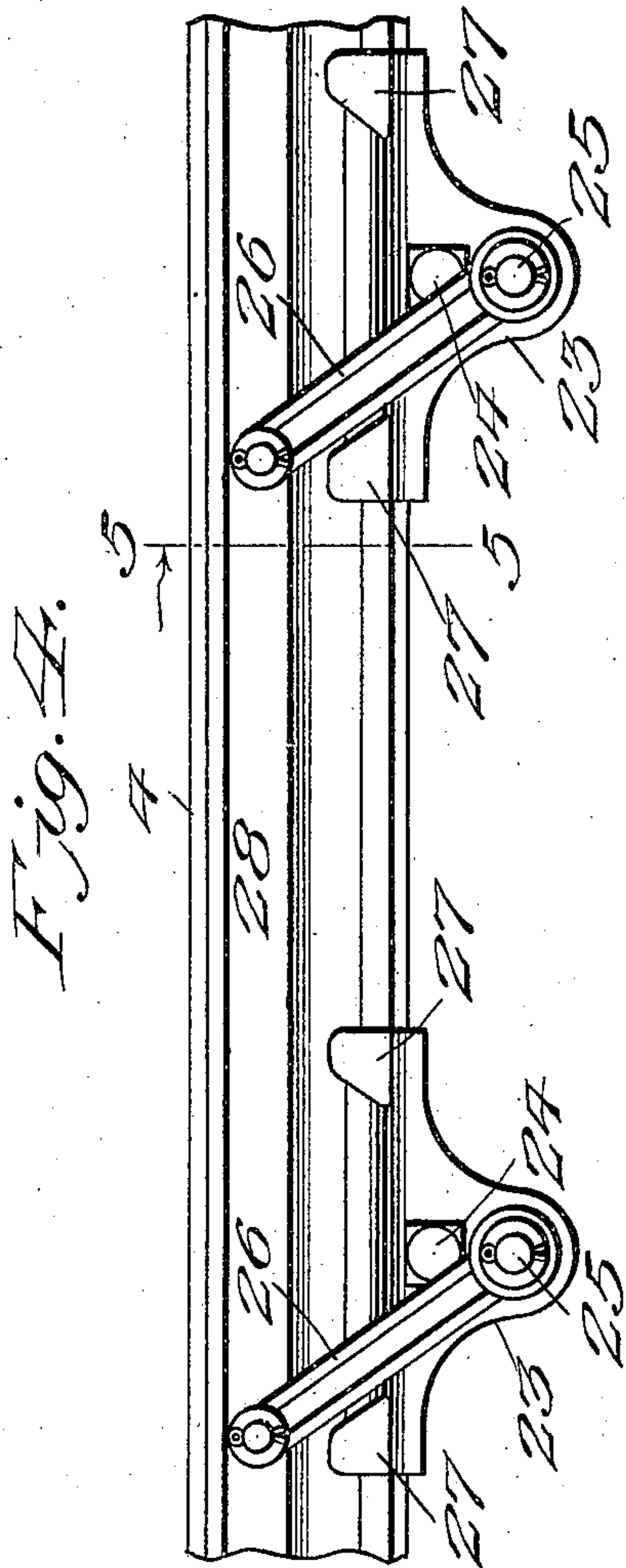


Fig. 6.

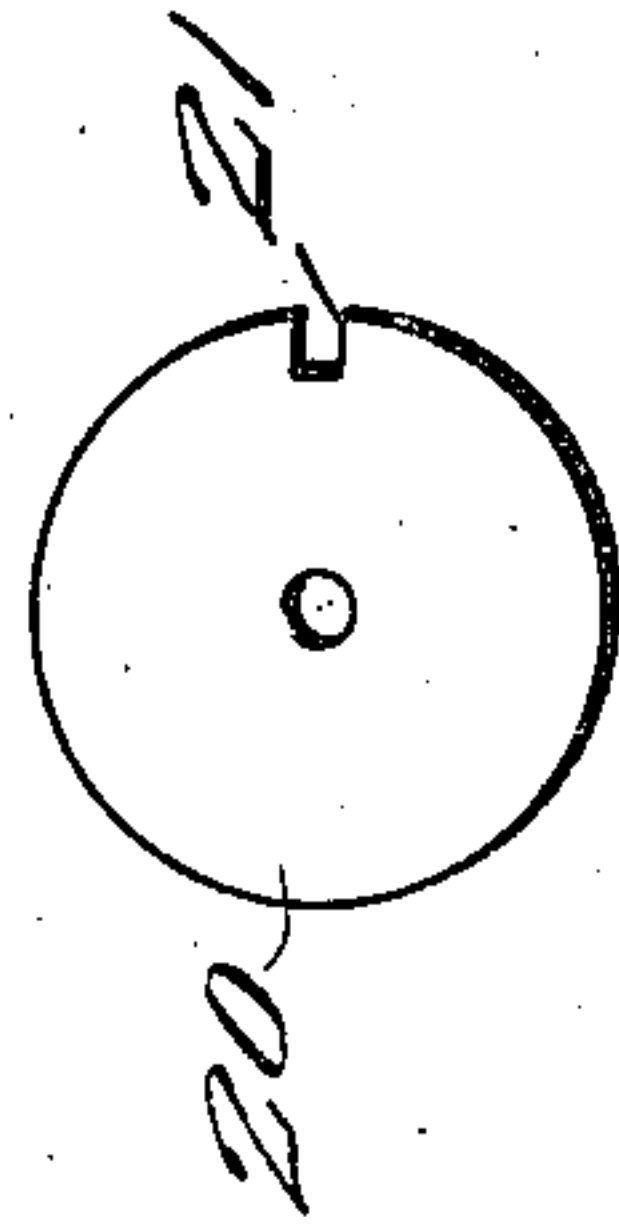
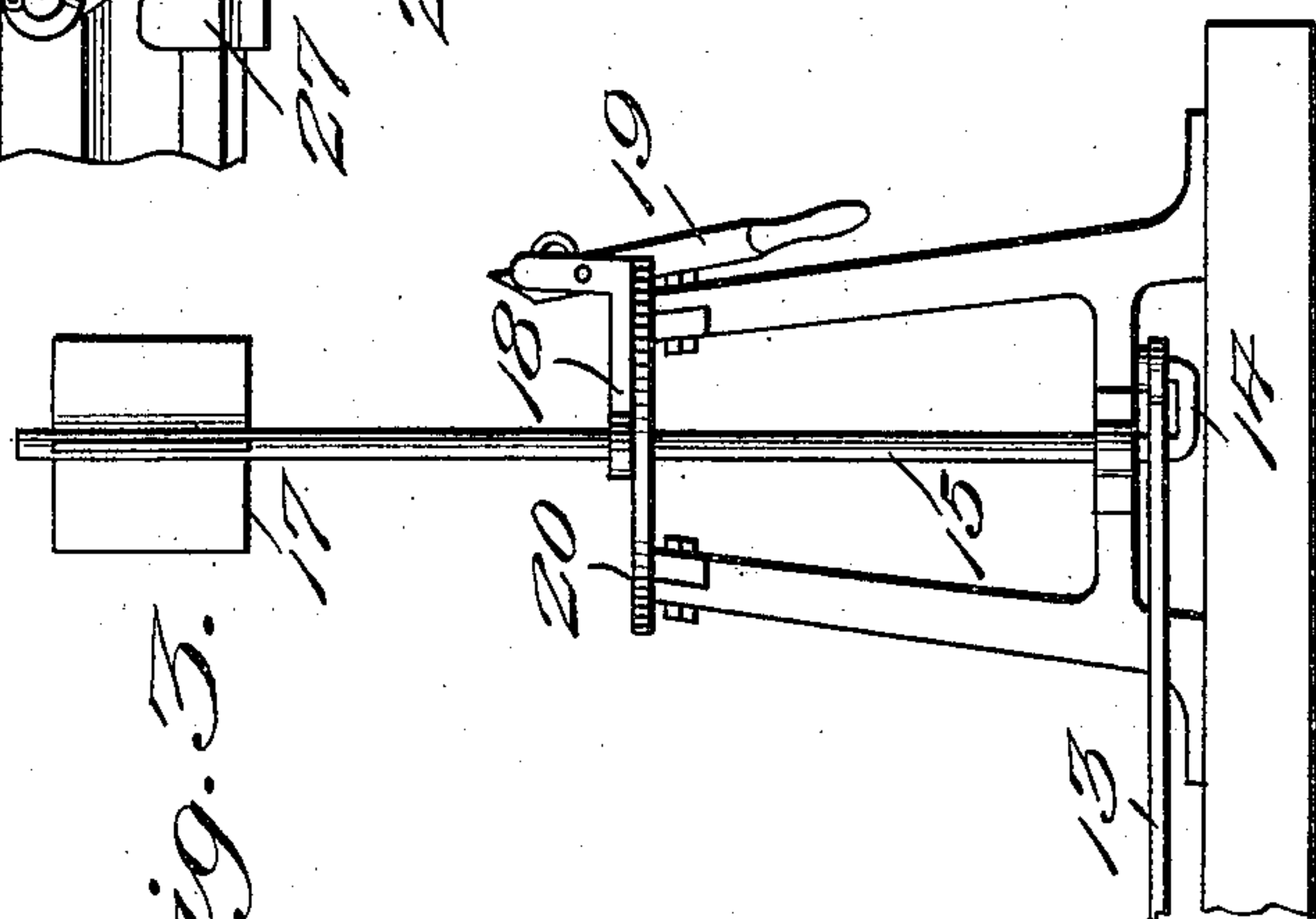
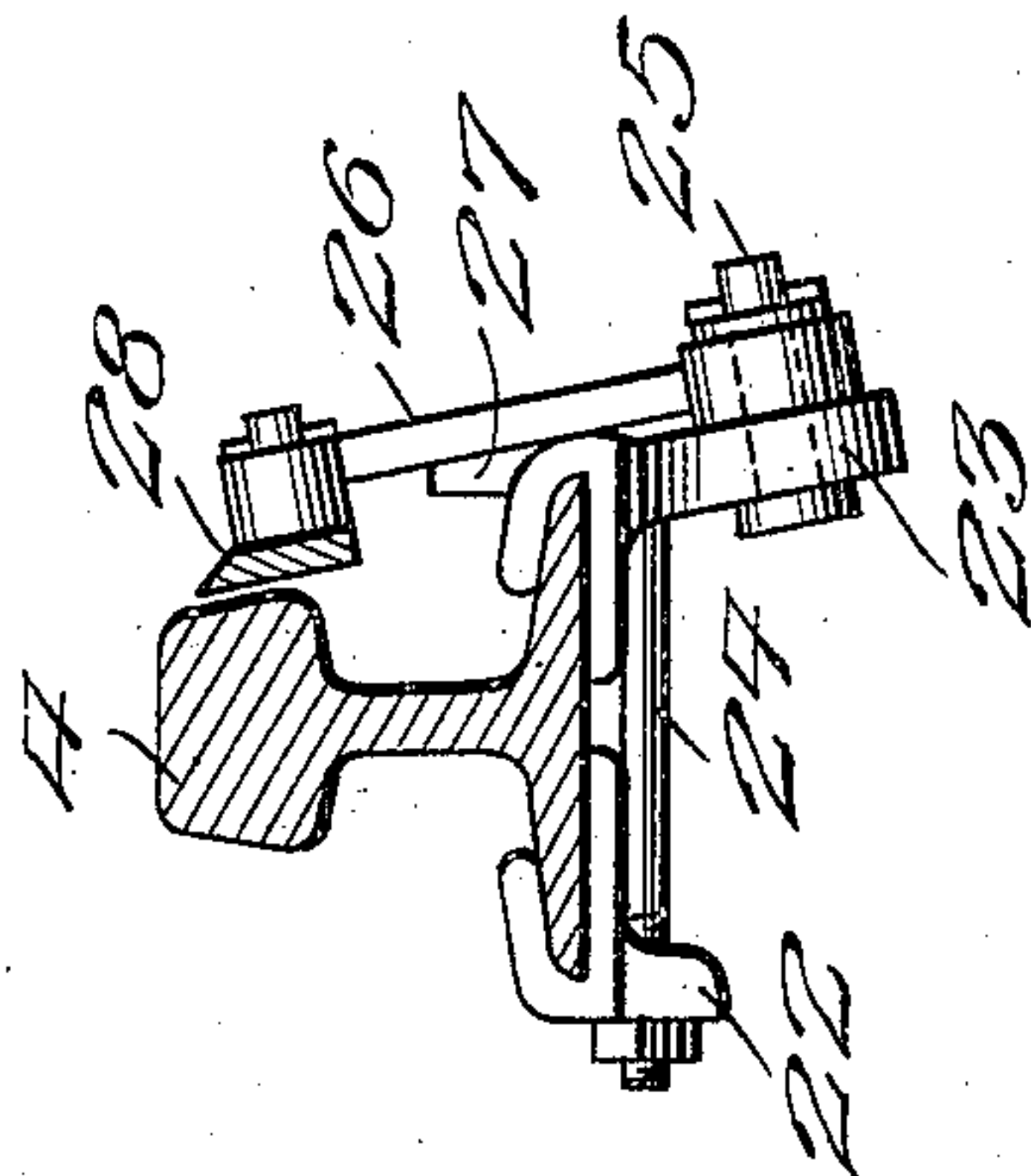


Fig. 5.



Witnesses

Edwin G. McKee
Wm. North

Inventor

George E. Madeley

By

Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

GEORGE E. MADELEY, OF KAUFMAN, TEXAS.

RAILROAD-SWITCH.

No. 847,089.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed July 11, 1906. Serial No. 325,619.

To all whom it may concern:

Be it known that I, GEORGE E. MADELEY, a citizen of the United States of America, residing at Kaufman, in the county of Kaufman and State of Texas, have invented new and useful Improvements in Railroad-Switches, of which the following is a specification.

This invention relates to that class of railroad-switches which are equipped with a so-called "detector-bar" and in which pressure of the wheels of the rolling-stock upon the detector-bar operates to hold the switch open to the siding while cars are passing from the track of the main line onto such siding.

The invention has for its objects to simplify and improve the construction and operation of this class of switches; and with these and other ends in view, which will readily appear as the nature of the invention is better understood, the said invention consists in certain improvements in the manner of mounting the said detector-bar and the means for connecting the same with its operating mechanism.

The invention also consists in improved means for automatically closing the switch after the passage of cars or rolling-stock from the main line onto the siding.

The invention further consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations, and modifications within the scope of the invention may be resorted to when desired.

In the accompanying drawings, Figure 1 is a top plan view of a railroad-switch constructed in accordance with the principles of the invention. Fig. 2 is a sectional detail view, enlarged, taken on the plane indicated by the line 2 2 of Fig. 1. Fig. 3 is a view in side elevation of the switch-stand. Fig. 4 is a side elevation illustrating a portion of the detector-bar. Fig. 5 is a transverse sectional view taken on the plane indicated by the line 5 5 of Fig. 4. Fig. 6 is a plan view of the top plate of the switch-stand detached.

Corresponding parts in the several figures are denoted by like characters of reference.

The rails of the main line are designated, respectively, 1 and 2, and the siding-rails 3 and 4, the latter rail merging with the rail 2 of the main line in the customary manner. A switch-tongue 5 is joined to the rail 3 by means of an ordinary rail-joint, and a switch-tongue 6, which is ordinarily or normally held adjacent to and in contact with the rail 4, is in like manner joined to the rail 2. The switch-tongues 5 and 6 are connected with each other by means of tie-bars, as 7 7 and 8, the latter of which extends beneath the rail 4 and a short distance adjacent to the other side of the latter. The joints which connect the switch-tongues 5 and 6 with the rails 3 and 2 are of such a nature as to permit the said tongues to move sufficiently to enable the switch to be opened and closed in the usual manner.

Upon the switch-tie which supports the switch-stand S there is spiked or otherwise secured a plate or casting 10, upon which is pivoted a bell-crank lever L, capable of moving in a horizontal plane. One arm 11 of the bell-crank lever L is connected by a link 12 with the projecting end of the tie-bar 8. The arm 11 of the bell-crank lever is also connected, by means of a link 13, with a crank 14 at the lower end of an approximately vertical shaft 15, which is supported for rotation in the switch-stand. The link 13 is provided with a slot 16, engaging the pin or bolt 17, whereby it is pivotally connected with the bell-crank lever in order that the latter, as will be hereinafter described, may under certain circumstances move independently of the link 13.

The shaft 15 carries at its upper end a signal 17 of ordinary construction. Said shaft is also provided with a radially-extending arm 18, carrying a pivoted arm or handle 19, whereby it may be operated for the purpose of rotating the shaft 15 in its bearings. One of the bearings of said shaft is formed by the top plate 20 of the switch-stand, and said top plate is provided with a single notch 21, adapted to be engaged by the handle 19 for the purpose of so locking the shaft as to secure the switch in what is usually known as a "closed" position—that is to say, the switch may be secured in a position in which it is closed to the siding, but open to the main line. No means are provided for locking or securing the switch in a position where it is open to the siding.

Upon the siding-rail 4 there are secured a

plurality of pairs of clips 22 23, said clips consisting of castings adapted to engage the rail-flange and to be secured upon the latter by means of bolts 24, extending transversely beneath said flange. The clips 23 are provided with laterally-extending pins or bolts 25, upon which are pivotally mounted short arms or links 26, the free ends of which are free to swing in short arcs, the extent of their movement being limited by means of lugs or bosses 27, formed upon the clips 23. The free upper ends of the links 26 carry the detector-bar 28, which latter lies adjacent to the head of the rail and is adapted when the links 26 assume an approximately vertical position to project above the rail-head, this being the normal position of the detector-bar when the switch is closed to the siding. The detector-bar is connected, by means of a link 29, with the arm 30 of the bell-crank lever L, which extends at an approximately right angle to the arm 11 of said bell-crank.

The switch-tongue 6 near its free end and approximate portion of the rail 4 are provided with apertures for the passage of a bar or bolt 31, which latter extends through a pair of sockets 32, the inner ends of which are fitted to bear against the webs of the tongues 6 and the rail 4. The sockets are provided with cylindrical recesses 33, in which are placed springs 34, which latter are held under tension by means of washers 35, sliding in the recesses or sockets, the tension of said springs being capable of regulation by tightening the nut 36 upon the bolt 31. These springs are of sufficient strength to move the switch-tongues 5 and 6 normally to a position where the switch is closed to the siding—that is to say, where the tongue 6 lies in contact with the rail 4—and the springs also have sufficient strength to operate the shaft 15 and the intermediate connections.

As previously stated, when the switch is closed to the siding the detector-bar projects above the head of the rail 4. In this position the handle 19 engages the locking-notch 21 of the top plate of the switch-stand, so as to lock the switch in a closed position. In order to open the switch to the siding, the handle 19 is released from the notch 21 and is utilized to turn the shaft 15 in its bearings. The crank 14 of said shaft through the medium of the link 13 will rock the bell-crank lever L, and the latter, through the medium of the link 12 and tie-bar 8, will move the switch-tongues 5 and 6, so as to open the switch to the siding. By the same movement of the bell-crank lever L the latter, through the medium of the link 29, will actuate the detector-bar, swinging or moving the latter to a position where its upper edge will be nearly flush with or slightly beneath the upper surface of the head of the rail 4. By the same movement the springs 33 are placed under tension, so that it will be necessary to

hold the operating-handle by manual force until the detector-bar is engaged by the wheels of rolling-stock moving onto the siding. As soon as the detector-bar is thus engaged the handle may be released, since the weight of the rolling-stock upon the detector-bar will retain the parts in adjusted position and the switch open. The operating-handle may now be restored to its initial position in engagement with the locking-notch 21, the slot 16 in the link 13 permitting it to be thus moved. The switch will remain open until the entire train has passed onto the siding. As soon as the last wheels pass out of engagement with the detector-bar the springs 33 will automatically throw or restore the switch-tongues to a position where the switch will be closed to the siding, but open to the main line. If the shaft 15 has not already been restored to its initial position manually, it will be thus restored by the movement of the bell-crank L, as will be clearly understood.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of this invention will be readily understood by those skilled in the art to which it appertains. The construction is simple and effective and of such a nature that the switch will be automatically held in an open position while rolling-stock is passing from the main line onto the siding, and it will be automatically restored to closed position without danger of failure immediately after the passage of the rolling-stock.

What is claimed is—

1. In a railroad-switch, a pair of switch-tongues, tie-bars connecting said tongues, spring means for forcing one of the switch-tongues in the direction of the adjacent siding-rail to keep the switch normally closed to the siding, a bell-crank supported for movement in a horizontal plane, a vertically-movable detector-bar normally supported above the surface of the head of the siding-rail, a link connecting the detector-bar with one arm of the bell-crank, a link connecting the other arm of the bell-crank with one of the tie-bars connecting the switch-tongues, a switch-stand, a shaft supported for rotation in said stand and having an operating-handle, a crank at the lower end of said shaft, and a link connecting said crank with the arm of the bell-crank which is connected with the tie-bar of the switch-tongues; said link being provided with a slot having slidable engagement with the pin whereby it is connected with the arm of the bell-crank.

2. In a railroad-switch, a pair of suitably-connected switch-tongues, spring means actuating said tongues to keep the switch normally closed, a detector-bar pivotally supported above the plane of the tread of a siding-rail, clips for supporting said detector-

bar, a bell-crank, links connecting the arms of said bell-crank respectively with the detector-bar and with the switch-tongues, and means for actuating the bell-crank to simultaneously open the switch to the siding and depress the detector-bar to a position below the tread of the siding-rail adjacent to which it is supported.

3. In a railroad-switch, a pair of suitably-connected switch-tongues, spring means actuating said tongues to keep the switch normally closed, a detector-bar normally supported above the plane of the tread of a siding-rail, a bell-crank, links connecting the arms of said bell-crank respectively with the detector-bar and with the switch-tongues, a switch-stand having a table provided with a single locking-notch, a shaft journaled in the switch-stand and extending through the table, a radial arm upon said shaft having a pivoted handle adapted to engage the locking-notch, a crank upon the shaft, and a link

connecting said crank with an arm of the bell-crank lever; said link having a slot slidably engaging the pin, whereby it is connected with the bell-crank.

4. In a railroad-switch, the combination with a siding-rail, of clips engaging the rail-flange, bolts connecting the clips beneath the rail-flange and clamping said clips in position, pins extending from the clips at one side of the rail, links or arms pivoted upon said pins, a detector-bar carried by said links or arms and held normally above the surface of the rail, lugs formed upon the clips supporting the links or arms to limit the movement of the latter, a switch-stand, and connection between said detector-bar and switch-stand.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE E. MADELEY.

Witnesses:

GEORGE G. SHAW,
R. D. BRYAN.