

(No Model.)

J. W. NORTON.
RAILWAY SWITCH.

No. 440,793.

Patented Nov. 18, 1890.

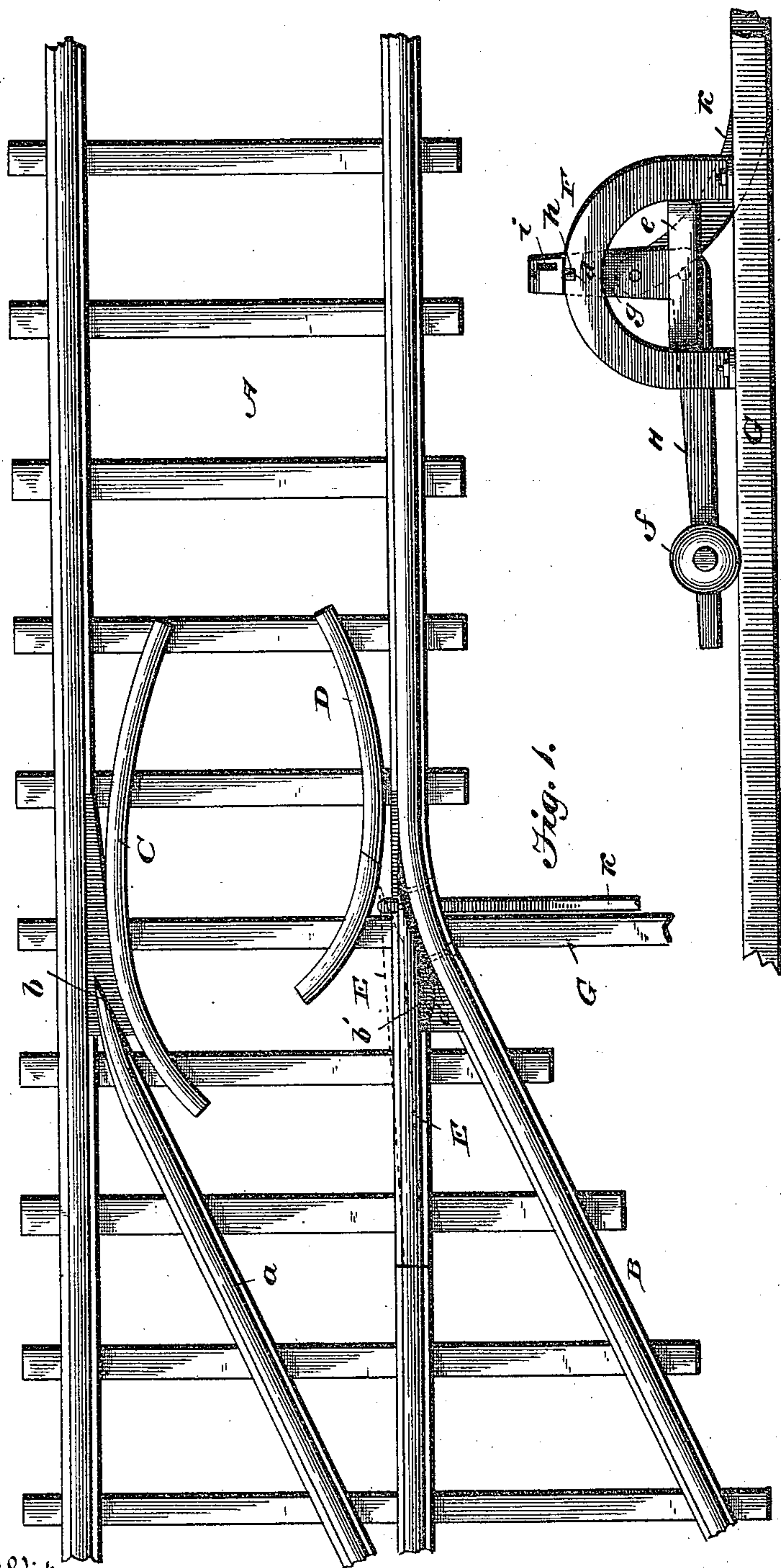


Fig. 1.

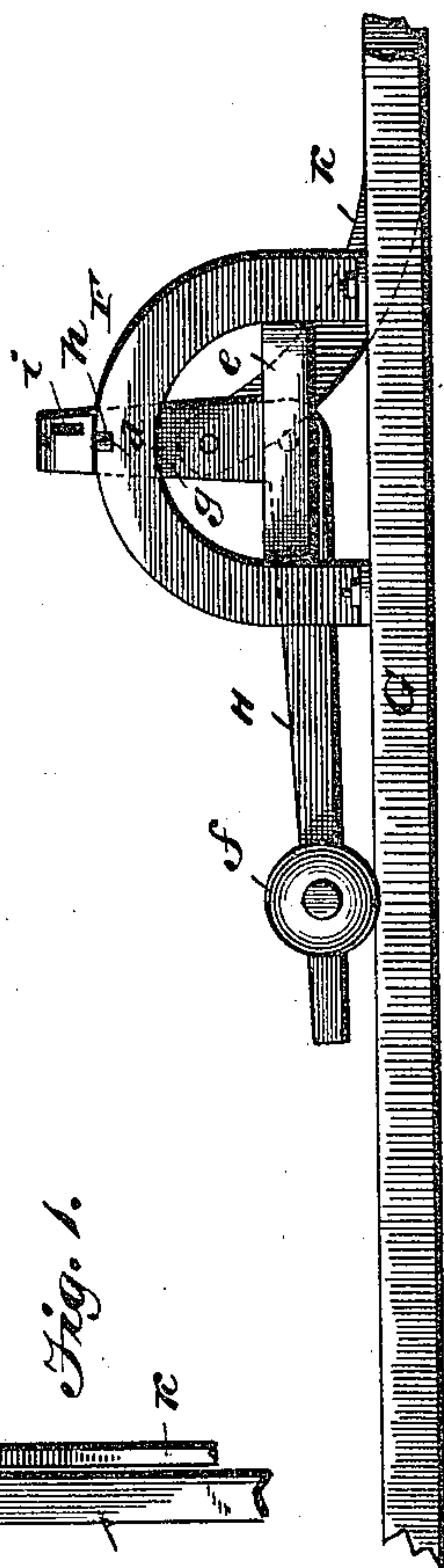


Fig. 2.

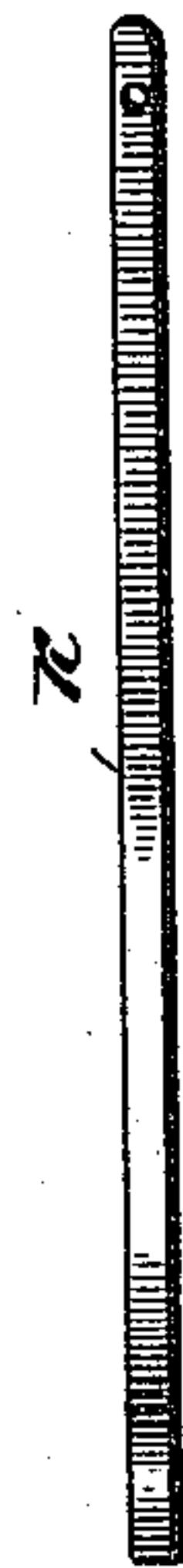


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

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RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 440,793, dated November 18, 1890.

Application filed November 30, 1889. Serial No. 332,145. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. NORTON, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Railway-Switches; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has relation to an improvement in railway-switches; and it has for its object, together with the simplicity of construction and ease of operation, the provision of mechanism adapted to operate automatically, whereby the main track may be always clear and free from danger.

A further object of the invention is to provide means whereby the switch may be operated to open the siding without necessitating the employment of an attendant to remain at the switch-lever and shift the switch-rail, so as to open up the main track again.

In the accompanying drawings, illustrating my invention, Figure 1 is a plan view of a portion of a railway, showing my improved switch-rail, the operating mechanism being broken away. Fig. 2 is a side view of the switch-stand with my improved operating device applied thereto and a portion of the connecting-rod, and Fig. 3 is a view of the connecting-rod removed.

Referring by letter to the said drawings, A indicates a railway, which may be constructed in any ordinary or approved manner, and B indicates a portion of a side track leading from the switch.

C and D indicate guard-rails, which may be of the form usually employed at the switch and arranged a sufficient distance from the main rails.

One of the rails *a* of the siding has its free end tapered, as shown at *b*, and is arranged with an interspace between its opposite sides and the inner side of the guard-rail C and one of the main rails, respectively, the space referred to being sufficient to permit the flange of a car-wheel or truck-wheel to pass on either side of the tapering point of said rail *a*.

The main rails—both the siding and main track—are firmly secured to the cross-ties.

E indicates the switch-rail, which is the only movable rail employed. This switch-rail, which forms a continuation of one of the main rails, is designed to move laterally by mechanism which will be presently explained, and has its forward end tapered, and in practice this tapered end is arranged two feet more or less in advance of the tapering point *b* of the rail *a*. The taper of the switch-rail is preferably on its outer side, and a space is normally left between the guard-rails and the adjacent main rails, so that when it is designed to have a train leave the main track for a siding it is simply necessary to move the tapering point of the switch-rail away from the adjacent main rail, so as to have the flange of the wheels on the approaching train to move between the said taper and the main rail leading to the siding.

The main rails may be secured to the ties in the ordinary manner and suitable bearings employed beneath the rails at the switch.

F indicates the switch-stand. This stand is preferably composed of a vertically-disposed semicircular frame, and may be formed from metal with its lower ends suitably secured to one of the ties or beams G. This stand is also provided at its vertical center with a socket or notch *d*, which is designed to receive a bolt or pin, as will be presently described.

H indicates the switch-lever or hand-bar. This switch-lever is of an angular form and is pivoted at its angle in a suitable bearing of the stand. In the present illustration I have shown the stand as having a cross-bar *e* to furnish a fulcrum for the pivoted lever; but I do not wish to confine myself to any manner of pivoting the lever, nor to the exact construction of the same. This hand-lever is designed to carry a movable weight *f*, such as usually employed. The short branch *g* of this operating-lever is arranged at an angle to the hand-lever slightly greater than a right angle, the object being that when the weighted branch has been raised the short branch will prevent it from remaining in a raised position unless held by an attendant or other means. The angle, of course, can

better be obtained by the mechanic. The angular portion of this operating-lever is journaled at such a point within the stand that when describing the arc of a circle the outer portion of the short branch will travel over the outer edge of the stand. The outer portion of this short branch *g* carries a lock pin or stud *h*, which may be termed a "gravity-pin," and may be inclosed, so as to prevent tampering with it. This pin, when it reaches the socket or notch in the stand, will of course seat itself therein and thereby lock the handle in a depressed position. The outer portion of this lever *H* is also provided with a key-hole *i*, so that the attendant may raise the lock-pin when it is designed to move the switch-rail.

While I have described specifically the means here shown and which I prefer to use for locking the hand-lever, yet I do not wish to be confined to such, as other means may be employed for such purpose, according to the fancy or dictation of the mechanic.

K indicates a rod or bar, which is connected at one end to the short branch of the hand-lever and at its opposite end to the free end of the movable switch-rail.

From the foregoing description and the fact that the hand-lever can be only locked in one position it will be seen that the main track is always in a position for travel in either direction, and when the switch has been moved to connect the siding it will automatically return as soon as the attendant removes his hand from the lever, the weight of the lever, together with the spring naturally obtained from the switch-rail, serving to posi-

tively move the connecting-rod and lock the short branch of the lever to the stand.

Fastened to the main rail on the side adjacent to the movable switch-rail is a piece of rubber *a'*, which is held in position by means of bolts or the like, and is designed to keep snow, ice, and the like from between the rails at that point. This rubber is secured to the rail so as to come flush with the top thereof.

The switch-rail is provided near its tapering end and on its outer side with a swell or projection *b'*, so as to assist a train in leaving the main track for the siding when desired.

Having described my invention, what I claim is—

1. The combination, with a switch-rail having a tapering movable end, of a hand-lever provided with an angular branch carrying means adapted to lock with the switch-stand and a bar or rod connecting said branch of the lever with the switch-rail, substantially as specified.

2. The combination, with a switch-stand, of an operating-lever journaled therein and having a branch arranged at an angle slightly greater than a right angle, and the said branch carrying a lock adapted to engage with the stand when the switch is in an open position with respect to the main track, substantially as specified.

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

JAMES W. NORTON.

Witnesses:

T. E. TURPIN,
M. E. MATTHEWS.