

No. 770,949.

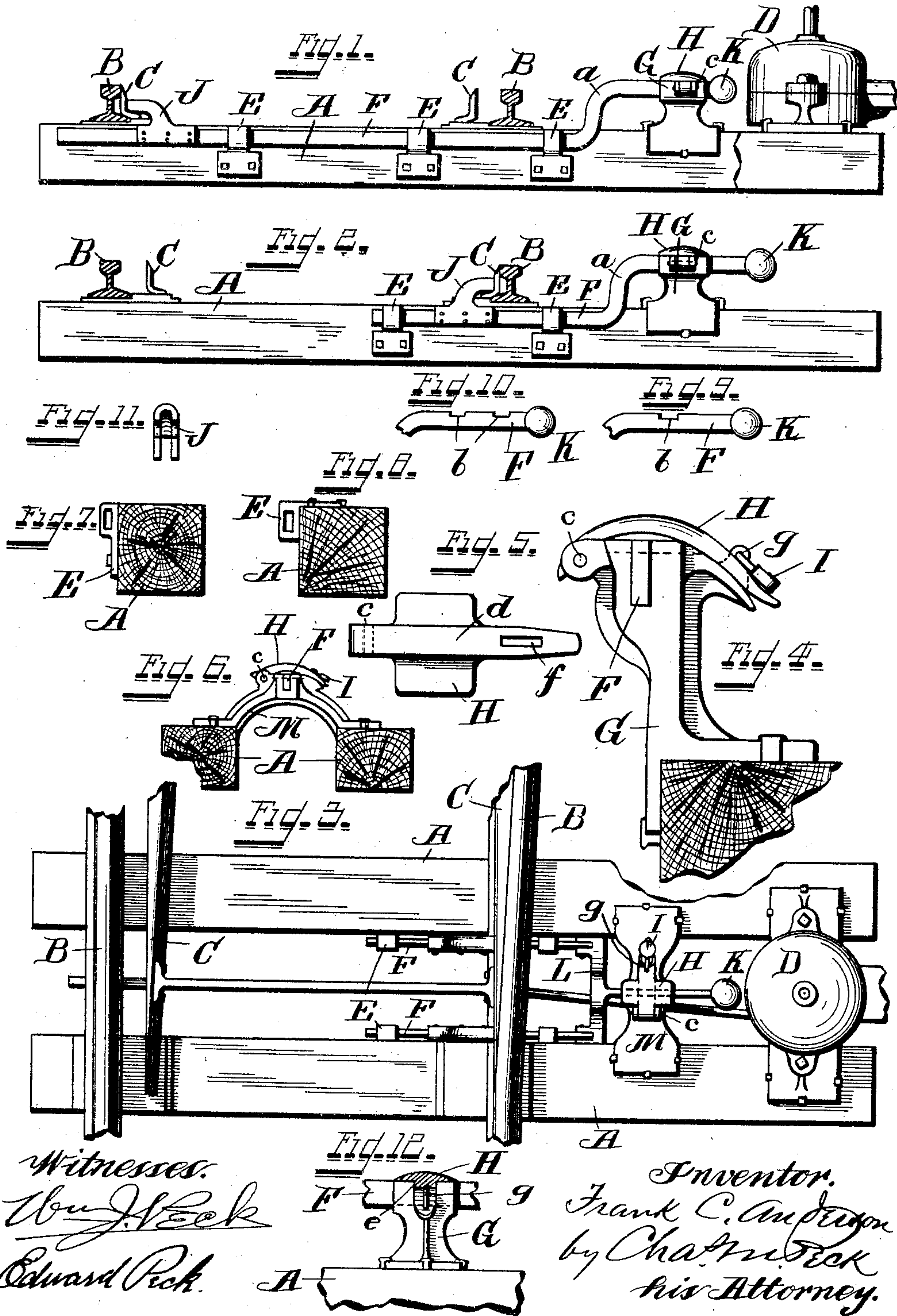
PATENTED SEPT. 27, 1904.

F. C. ANDERSON.

SAFETY LOCK FOR RAILWAY SWITCHES.

APPLICATION FILED APR. 21, 1903.

NO MODEL.



UNITED STATES PATENT OFFICE.

FRANK C. ANDERSON, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF TO AMERICAN VALVE AND METER COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF WEST VIRGINIA.

SAFETY-LOCK FOR RAILWAY-SWITCHES.

SPECIFICATION forming part of Letters Patent No. 770,949, dated September 27, 1904.

Application filed April 21, 1903. Serial No. 153,587. (No model.)

To all whom it may concern:

Be it known that I, FRANK C. ANDERSON, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Safety-Locks for Railway-Switches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to the provision of means for independently locking the switches of railway-tracks; and it has for its object the provision, construction, and operation of parts such as render it impossible for the switchman in throwing or handling the switch to lock the same when not in proper working position; and it has for a further object the provision of means which prevent the switch from being sprung open by anything dragging from the train.

The novelty of my invention will be hereinafter more fully set forth, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is an end elevation, partly in section, of the main rails and point-rails of a switch, showing the application of my invention thereto when it is desired to lock the switch in one position. Fig. 2 is a view similar to Fig. 1, but showing my invention applied for locking the switch in a position opposite to that above described. Fig. 3 is a plan view of the main and point rails of a switch, showing the construction shown in Fig. 2 duplicated as an additional precaution against accidents. Fig. 4 is an enlarged end elevation of the locking-bracket. Fig. 5 is a bottom plan view of the keeper forming part of the locking-bracket. Fig. 6 is a view corresponding to Fig. 4, but diminished, of the locking-bracket employed in the construction shown in Fig. 3. Fig. 7 is a sectional end elevation of one of the cross-ties, showing the guide-bracket attached thereto. Fig. 8 is a view corresponding to Fig. 7, showing a modified form of guide-bracket. Fig. 9 is a detail view of the locking-detent in the locking-bar. Fig. 10 is a correspond-

ing view showing two locking-detents. Fig. 11 is an end elevation of the piece which bears against the point-rail of the switch. Fig. 12 is a front elevation of the locking-bracket and showing the keeper in section.

The same letters of reference indicate identical parts in all the figures.

A represents the usual cross-ties of a railroad-track, supporting the main rails B and point-rails C of the switch. Any suitable switch-stands D may be provided for operating the switch-points C. Suitably secured upon one of the vertical faces of one of the cross-ties A adjacent to the end of the point-rails C is a series of guide-brackets E, carrying and guiding the locking-bar F. This locking-bar F is goosenecked, as at *a*, and is guided in and adapted to be locked to the locking-bracket G, which is secured upon the cross-tie adjacent to one of the main rails B, but outside of the path of travel of a train upon the track.

The locking-bar F is provided with a locking-detent *b*, as shown in Fig. 9, and this detent is in that part of the locking-bar which is guided in the locking-bracket G. Hinged to the locking-bracket G, as at *c*, is a keeper H, provided on its under face with a locking-rib *d*, Fig. 5, which is adapted to engage the locking-detent *b* in the locking-bar F. This rib *d* also engages a slot *e*, which is arranged transversely in the upper face of the locking-bracket H, as shown more clearly in Fig. 12. The locking-rib *d* transmits the strain from the locking-bar F directly to the locking-bracket H through the medium of the transverse slot *e* in said locking-bracket, as will be readily understood. The hinged keeper H is slotted, as at *f*, Fig. 5, to engage a locking-staple *g*, Fig. 4, through which is adapted to be passed the loop of a padlock I.

Suitably secured upon the locking-bar F and adjacent to the point-rail which it is desired to lock is a curved bracket J, which extends above the foot of the point-rail and is adapted to bear against the web thereof when the switch is locked. This bracket J, as shown in Fig. 11, is rounded on its upper face

in such manner that should anything drag from a train while passing over the switch it would ride over the bracket without engaging the same. Where it is desired to lock the switch in both of its positions, it is only necessary to secure a bracket J, as shown in Fig. 2, upon the locking-bar shown in Fig. 1 and to provide the locking-bar with two locking-detents, as shown in Fig. 10, as will be readily understood.

K indicates any suitable handpiece provided upon the end of the locking-bar F for moving the same to its proper position for locking.

In Fig. 3 I have shown the construction of Fig. 2 duplicated and connected together for simultaneous operation by the yoke L, which is rigidly secured to both the locking-bars F. The locking-bracket M used in this construction is similar to the locking-bracket G, above referred to, in all respects except that it is secured upon two of the cross-ties, as will be seen by reference to Figs. 3 and 6.

As will be seen from the drawings, all of the mechanism of my device which is placed between the rails of the track is below the level of the upper surface of the cross-ties, except the bracket J, which extends above the cross-ties and embraces the web of the point-rail. This construction obviates any liability of injury to my switch-lock which might result from the dragging of any part of the train along the ties.

The operation of my device is as follows:

When a switchman desires to throw the switch, he unlocks the padlock I and throws the keeper H back out of engagement with the locking-detent *b* in the locking-bar F and then operates the switch-stand in the usual manner, which being connected to the point-rails of the switch operates them to allow a train to enter the side track from the main track. When the switchman desires to reset the switch, he first operates the switch-stand and then grasps the handpiece K and restores the locking-bar to its proper position and swings the keeper H into its proper position for locking and then locks the same in position. Should any obstruction be interposed between the point-rails and the main rails, it is obvious that the point-rails will not resume their proper position against the main rails, and consequently the locking-bar and its detent could not be brought to such a position where it would be possible for the rib *d* upon the under side of the keeper H to enter the locking-detent *b* in the locking-bar F.

As switches are now constructed there are several joints in the connections between the switch-stand and the point-rails, and in these connections there is always more or less looseness or lost motion, and as switches are now locked by the same means by which they are operated there is no assurance that the point-

rails are "home" or against the main rail when the switch is locked.

By the use of my improved lock there is every assurance that the point-rails are home when the switch is locked, for the reason that it is impossible to lock the switch unless the point-rails are in their proper position, for it is to be remembered that there are no joints which can by any possibility work loose and produce lost motion between the point of contact of the bracket J with the point-rail C and the locking-bracket G, which is rigidly secured to the tie.

One of the essential features of my present invention is the placing of the locking mechanism outside of the track in such manner that the switchman is not compelled to go between the rails to assure himself that the switch-points are in proper position, for it is obvious that if the switch-points are not in proper position it is impossible to lock the switch.

Having thus fully described my invention, I claim—

1. In safety-locks for railway-switches, the combination with a main rail, of its shiftable point-rail, a guided locking-bar with an extension thereon adapted to bear against said shiftable point-rail, and locking mechanism for said locking-bar independent of the switch-stand, substantially as described.

2. In safety-locks for railway-switches, the combination with a main rail, of its shiftable point-rail, a guided locking-bar with an extension thereon adapted to bear against said shiftable point-rail, and locking mechanism outside of the track for said locking-bar and independent of the switch-stand, substantially as described.

3. In safety-locks for railway-switches, the combination with a main rail, of its shiftable point-rail, a guided locking-bar with an extension thereon adapted to bear against said shiftable point-rail, a locking-detent in said locking-bar, a locking-bracket independent of the switch-stand adjacent to said locking-detent, and a keeper adapted to engage said locking-bracket and said locking-detent, substantially as described.

4. In safety-locks for railway-switches, the combination with a main rail, of its shiftable point-rail, a guided locking-bar with an extension thereon adapted to bear against said shiftable point-rail, a locking-detent in said locking-bar, a locking-bracket independent of the switch-stand adjacent to said locking-detent, a keeper adapted to engage said locking-bracket and said locking-detent, and means for retaining said keeper in its locked position, substantially as described.

FRANK C. ANDERSON.

Witnesses:

WM. J. PECK,
EDWARD PECK.