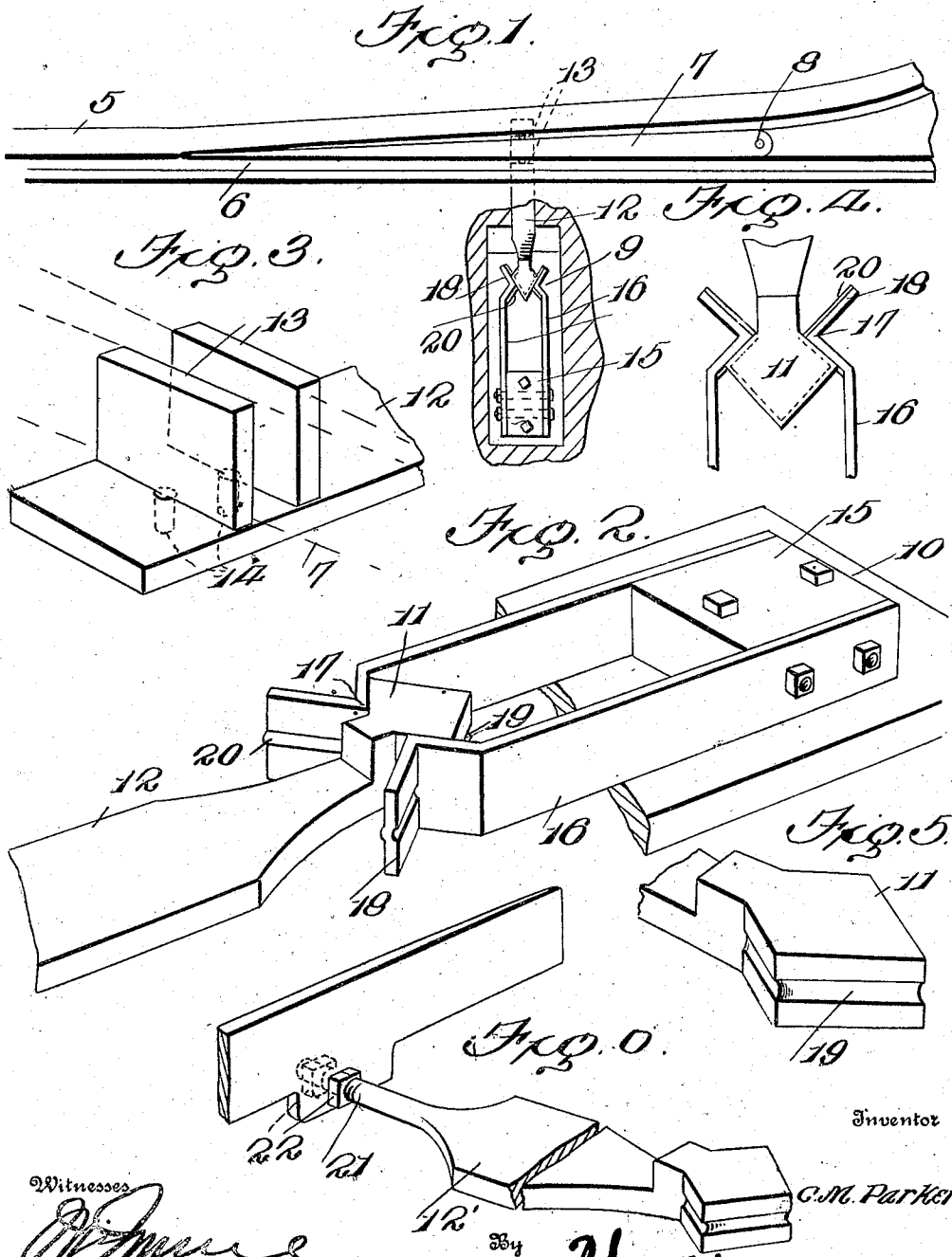


C. M. PARKER.
SAFETY SWITCH.
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Witnesses
W. H. Anderson
W. H. Anderson

Inventor
C. M. Parker
By *W. H. Anderson*
Attorneys

UNITED STATES PATENT OFFICE.

CLOYD M. PARKER, OF PITTSBURG, PENNSYLVANIA.

SAFETY-SWITCH.

933,387.

Specification of Letters Patent.

Patented Sept. 7, 1909.

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To all whom it may concern:

Be it known that I, CLOYD M. PARKER, citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Safety-Switches, of which the following is a specification.

This invention relates to railway switches and more particularly to improved means for locking the point or tongue of the switch in either of its working positions.

The object of the invention is, in a thoroughly feasible and practical manner, positively to prevent accidental movement of the switch point when the latter is in either open or closed position thus to insure effective operation of the switch at all times.

A further object of the invention is to provide a temporary locking device for switch points including a tongue having means at one end for attachment to the switch point and provided at its opposite end with an enlarged head having a peripheral groove formed therein and adapted to register with and receive a corresponding rib on the deflected ends of the resilient arms of the keeper, thereby to assist in guiding the head of the tongue between the arms of the keeper and also to prevent vertical movement of one member relatively to the other.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions, and minor details of construction may be resorted to within the scope of the appended claims.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a top plan view partly in section of a switch point or frog provided with a temporary locking device constructed in accordance with my invention; Fig. 2 is an enlarged detail perspective view of the co-acting members constituting the locking device; Fig. 3 is a detail perspective view showing the manner of connecting the inner end of the tongue to the switch; Fig.

4 is a top plan view showing the tongue locked in engagement with the resilient arms of the keeper; Fig. 5 is a detail perspective view of the arrow head of the sliding tongue; Fig. 6 is a perspective view partly in section illustrating a modified form of the invention.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The improved switch mechanism forming the subject matter of the present invention is principally designed for use on street railways, interurban railways, and similar traction lines, and by way of illustration is shown in connection with such a railway structure in which 5 designates the track, 6 the depression or pocket, and 7 the switch point or tongue pivotally mounted at 8 in said depression.

Mounted on the road bed near the switch point 7 is a plate or support 9 to which is secured to a keeper 10 arranged to receive the enlarged head 11 of a sliding tongue 12.

The tongue 12 is preferably formed of a flat bar of metal the inner end of which extends through a suitable slot in the casing of the switch point 7 and is provided with spaced upstanding lugs 13 arranged to embrace the opposite longitudinal edges of the switch point so that when the switch point is moved either to open or closed position a corresponding movement will be imparted to the tongue 12.

Attention is here called to the fact that the upstanding plates or lugs 13 are provided with depending pins 14 which engage correspondingly shaped openings formed in the upper surface of the tongue 12, so as to allow said lugs to be adjusted at an angle or inclination to each other and thus accommodate the tapered switch point.

The keeper 10 comprises a spacing block 15 to the opposite sides of which are bolted or otherwise rigidly secured a pair of resilient arms 16 having their free ends bent inwardly to form substantially triangular projections 17, the apexes of which are arranged in transverse alinement, said arms terminating in laterally deflected lips 18 which assist in guiding the head 11 of the tongue to operative position between the arms 16.

The head 11 is preferably of a height equal to the height of the resilient arms 16, thus to insure positive contact of the head with said arms throughout the entire height of the latter.

Formed in the peripheral edge of the arrow head 11 is a circumferential groove 19 which registers with and receives a correspondingly shaped rib 20 formed on the guiding lips 18 of the resilient arms, there being similar lips formed on the inner walls of the projections 17 and adapted to enter the groove 19 at the base of the arrow head when the latter is moved to a position between the resilient arms and at the rear of said projections.

The co-acting ribs 20 and grooves 19 not only serve to positively guide the arrow head 11 to operative position between the resilient arms of the keeper, but also serve to prevent vertical movement of one member relatively to the other. Thus it will be seen that when the switch point is moved manually or otherwise in one direction, the head 11 will force the free ends of the resilient arms laterally so as to permit the passage of said head and allow the grooves at the rear of the head to register with the ribs on the inner sides of the angular projections 17, the inherent spring action of the arms serving to automatically return said arms to normal position and thus prevent accidental separation of the head from the keeper. When the switch point is moved in the opposite direction the inclined faces of the head at the rear thereof, will bear against the inclined walls of the angular projections 17 and force the arms laterally so as to permit the passage of the head therebetween, the pressure of the terminal guiding lips 18 on the forward inclined faces of the head serving to prevent rearward movement of said head until the switch is again moved in the opposite direction.

In Fig. 6 of the drawing there is illustrated a modified form of the invention in which the upstanding lugs 13 are dispensed with, the inner end of the tongue 12' being reduced to form a threaded extension 21 which passes through the adjacent portion of the pivoted switch point or tongue for engagement with suitable clamping nuts 22, the latter being designed to bear against the opposite longitudinal edges of the switch point and thus hold the tongue 12' rigidly combined with said switch point.

Having thus described the invention, what is claimed as new is:

1. The combination with a railway switch including a movable switch point, of a keeper, a tongue having one end thereof secured to the switch point and its opposite end provided with a head for engagement with the keeper, and means for preventing

vertical movement of one member relatively to the other.

2. The combination with a railway switch including a switch point, of a keeper having a guiding rib formed thereon, and a tongue having one end thereof secured to the switch point and its opposite end provided with an enlarged head having a groove formed therein and adapted to register with and receive the guiding rib of the keeper.

3. The combination with a railway switch including a movable switch point, of a keeper comprising spaced resilient arms having their free ends deflected laterally to form guiding lips and provided with laterally extending ribs, a tongue having its inner end secured to the switch point and its outer end provided with an angular head movable to operative position between the resilient arms of said keeper, there being a circumferential groove formed in the head and adapted to receive the guiding ribs.

4. The combination with a railway switch including a switch point, of a keeper comprising spaced resilient arms, a tongue having its inner end secured to the switch point and its outer end provided with an enlarged head movable to operative position between the arms of the keeper, and means for preventing vertical movement of the head relatively to the keeper, said head being of approximately the same height as the arms of said keeper.

5. The combination with a railway switch including a movable switch point, a keeper comprising spaced resilient arms having their inner faces formed with intermediate guiding ribs, and a tongue secured to the switch point and having its outer end provided with an enlarged head and having an intermediate peripheral groove for registration with the guiding ribs of the resilient arms.

6. The combination with a railway switch including a movable switch point, of a keeper comprising spaced resilient arms having their inner faces formed with angular extensions each provided with a longitudinally disposed rib, a tongue provided with an angular head having a peripheral groove for the reception of the ribs, and spaced upstanding lugs pivotally mounted on the tongue and arranged to embrace the switch point.

7. The combination with a railway switch including a movable switch point, a support arranged adjacent the switch point, a keeper mounted on the support and comprising spaced resilient arms having their outer ends bent inwardly to form inwardly projecting portions terminating in laterally extending guide lips, guiding ribs formed on the angular projections of the guide lips, a tongue slidably mounted on the support and

having its inner end provided with means
for attachment to the switch point and its
outer end formed with an enlarged head of
substantially the same height as the resilient
5 arms, there being a peripheral groove
formed in the said head for registration
with the guiding ribs.

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

CLOYD M. PARKER. [L. s.]

Witnesses:

P. J. MANN,
CHAS. W. McCHESENEY.