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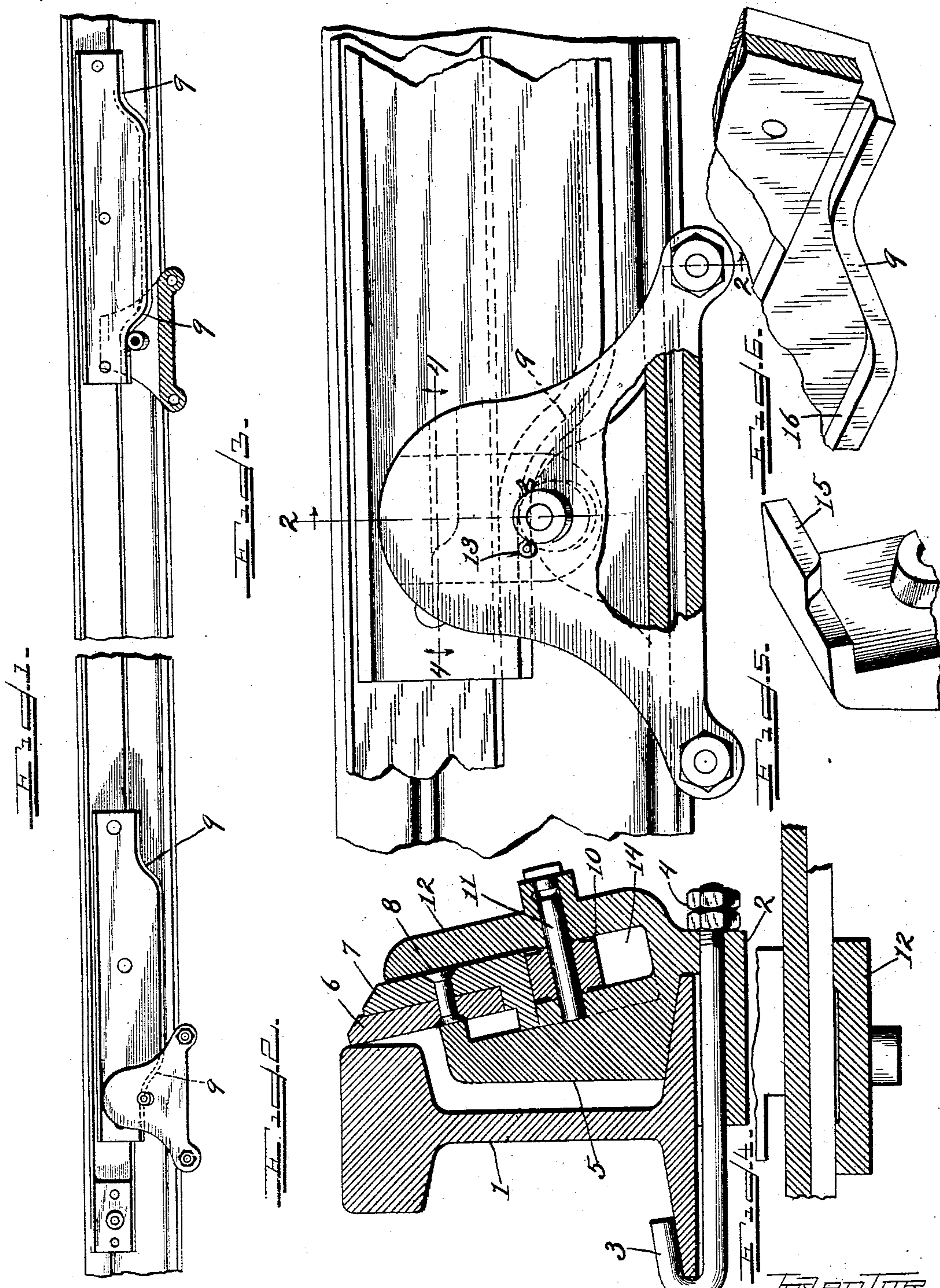
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CLIP FOR SAFETY DEVICES FOR RAILWAY SWITCHES.

(Application filed Feb. 20, 1901.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## CLIP FOR SAFETY DEVICES FOR RAILWAY-SWITCHES.

SPECIFICATION forming part of Letters Patent No. 713,619, dated November 18, 1902.

Application filed February 20, 1901. Serial No. 48,033. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. DUNHAM, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Clips for Safety Devices for Railway-Switches, of which the following is a full, clear, and exact specification.

My invention relates to that class of clips employed for holding and actuating the detector-bar of a railway-switch safety device of the character in which the detector-bar is so arranged longitudinally of the railway-rail that when the rolling-stock is standing on or adjacent to the switch the latter will be prevented from being operated by the detector-bar coming into contact with the wheel-treads, and my invention has for its primary object to provide improved and simple means whereby this vertical movement or action of the detector-bar may be produced by longitudinal movement thereof.

A further object of my invention is to provide a clip of an improved and simple construction, whereby the support for the detector-bar on the clip may be readily substituted by a larger or smaller support, thus adapting the device for rails of different heights.

With these ends in view my invention consists in certain features of novelty in the construction, combination, and arrangement of parts by which the said objects and certain other objects hereinafter appearing are attained, all as fully described with reference to the accompanying drawings and more particularly pointed out in the claims.

In the said drawings, Figure 1 is a side elevation of a railway-rail, showing a pair of my improved clips applied thereto for supporting the detector-bar shown in connection therewith, one of said clips being illustrated in vertical section. Fig. 2 is an enlarged transverse sectional view taken on the line 2 2, Fig. 3. Fig. 3 is a side elevation with a part of the clip-casting broken away. Fig. 4 is a detail plan section taken on the line 4 4, Fig. 3. Fig. 5 is a perspective view of the inner member of the rail-clip looking toward the inner face thereof; and Fig. 6 is a detail perspective view of one end of the cam or incline bar, showing a portion of the detector-bar in connection therewith.

1 represents the railway-rail, to the side of which at suitable intervals apart are secured my improved clips, each of which is formed with a base portion 2, passing under the rail, and through which base portion passes a number of horizontal hook-shaped bolts 3, which have their hook ends engaged over the opposite side of the rail-flange and their threaded ends projecting from the base 2 and provided with lock-nut 4 or other suitable device for rigidly holding the clip on the rail. Each of these clips is also formed with an inner member 5, which rests upon the upper side of the foot-flange of the rail and constitutes, with the base 2, a V-slot, in which the foot-flange engages as the bolts 3 are tightened up.

6 represents the detector-bar, which extends longitudinally of the rail and is normally located below the level of the rail-head or at such a level as to not interfere with or be struck by the wheel-treads. This detector-bar 6, as is of course understood, is connected at one end in any suitable manner with the switch-operating mechanism and at the other end with the switch, so that in order to throw the switch it will be necessary to move the detector-bar 6 longitudinally, and if this longitudinal movement also causes the bar to ride upwardly or move vertically it necessarily follows that should the wheels of the rolling-stock be standing on the rail at any point in the length of the detector-bar the treads of the wheels would prevent the detector-bar from thus rising, and as a consequence would also prevent it from moving longitudinally for operating or throwing the switch. In order to produce this vertical or rising movement of the detector-bar by moving the bar longitudinally, I provide each of the clips with a cam or incline bar 7, secured to the detector-bar by any suitable means, such as rivets 8, and having its under side provided, preferably at each end, with a cam or incline 9, which when the detector-bar is in its normal position, as shown in the drawings, rests upon a suitable support carried by the clip; but when the bar 6 is moved longitudinally such cam or incline 9 will ride upwardly over said support and lift the detector-bar into engagement with the wheel-treads. This support preferably consists of



an antifriction-roller 10, pivoted on a pin 11, having its inner end seated in the clip member 5 and its outer end seated in an outer member 12 of the clip. This pin 11 is removably held in place in said members 5 12 by means of a cotter-pin 13 or other suitable device, so that when desired the roller 10 may be exchanged for a larger or smaller roller, thus adapting the device for application to rails of different sizes, sufficient space 14 being left between the clip members 5 12 below the pin 11 to allow for a wide range of variation in the sizes of the rollers. The clip members 5 12 are set at such an inclination 15 as to bring the detector-bar 6 contiguous to the upper edge of the rail-head, and if the device is to be applied to a larger rail the roller 10 would be exchanged for a larger roller, so as to give the bar 6 a higher initial or normal position, it being understood that 20 the base or foot flange of the rail being proportionately increased in size the clip would be prevented from slipping as far up on the rail as would be possible with a smaller rail, and consequently the base of the clip would stand off a sufficient distance to maintain the proper inclination to bring the detector-bar 6 against or adjacent to the side of the rail-head.

30 The detector-bar 6 and cam or incline bar 7 are located between the clip members 5 12, and in order that they may not be accidentally dislodged or dislodged by mischievous persons from this position the upper edge of the clip member 5 is provided on its inner face with a stop 15, and the inner face of the cam or incline bar is provided along its lower edge with a laterally-projecting flange 16, extending under the stop 15 in such a manner that 40 the cam or incline bar 7 cannot be lifted above a certain height without striking the stop 15. There is sufficient play between the flange 16 and stop 15, however, to allow for a considerable range of variation in the size of the supporting-roller 10. It will also be seen that the flange 16 follows the line of the cam or incline on the lower edge of the bar 7 and that the stop 15 is so arranged that as the bar 7 rises on the roller 10 said flange 16 will maintain a uniform distance from the stop 15, the end of the stop 15 being located substantially over 50 the center of the roller 10.

Having thus described my invention, what I claim as new therein, and desire to secure by 55 Letters Patent, is—

1. A device for the purpose described comprising in combination a clip and a locking-bolt respectively adapted to embrace the op-

posite base-flanges of a railroad-rail, a lock-nut upon the bolt bearing against the clip, 60 said clip being provided with an inner member having an inwardly-projecting stop, and an outer member inclined toward the rail, an inclined bar and a detector-bar riveted thereto, said bars closely fitting and projecting between said members, the inclined bar having 65 a portion of its lower edge provided with an incline, a roller between said inner and outer members supporting the inclined bar from its lower edge, and a flange projecting laterally from said edge and adapted to engage 70 the stop on the inner member of the clip, substantially as set forth.

2. A device for the purpose described comprising in combination a clip and a locking-bolt respectively adapted to embrace the opposite base-flanges of a railroad-rail, a lock-nut upon the bolt bearing against the clip, 75 said clip being provided with an inner member having an inwardly-projecting stop, and with an outer member inclined toward the rail, an inclined bar and a detector-bar riveted thereto, closely fitting and projecting between said members, said inclined bar having a portion of its lower edge provided with an incline, 85 a roller between said inner and outer members supporting the inclined bar from its lower edge and a flange projecting laterally from said edge in a plane normally below said stop on the inner member and adapted to engage 90 said stop, substantially as set forth.

3. A device for the purpose described comprising in combination a clip and a locking-bolt respectively adapted to embrace the opposite base-flanges of a railroad-rail, a lock-nut upon the bolt bearing against the clip, 95 such clip being provided with an inner member having an inwardly-projecting stop, and with an outer member inclined toward the rail, an inclined bar and a detector-bar riveted thereto closely fitting and projecting between said members, said inclined bar having a portion of its lower edge provided with an incline, a roller between said inner and outer members in a plane elevated above the bottom wall of said members and in permanent engagement with and supporting the inclined bar from its lower edge, and a flange projecting laterally from said edge and adapted to engage the stop on the inner member of the 110 clip, substantially as set forth.

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