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W. PILKINGTON

2,037,589

CAR STOP

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FIG. 1.

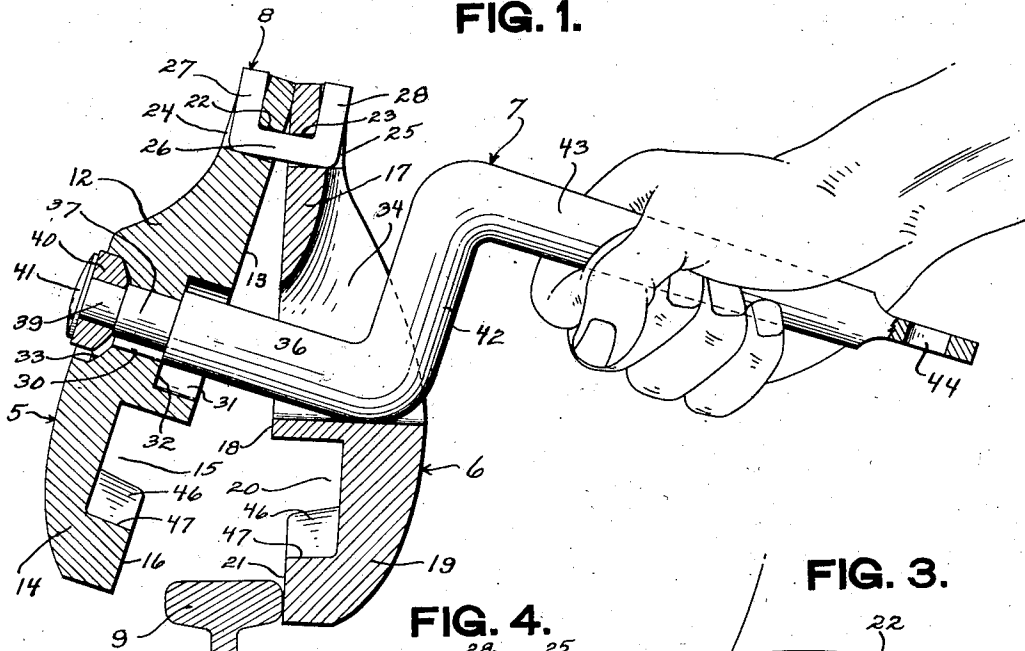


FIG. 4.

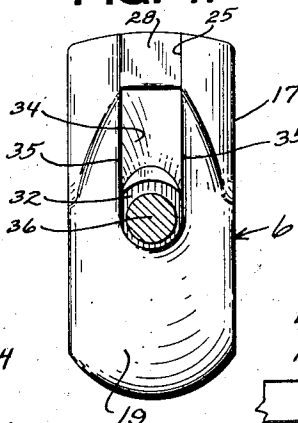


FIG. 3.

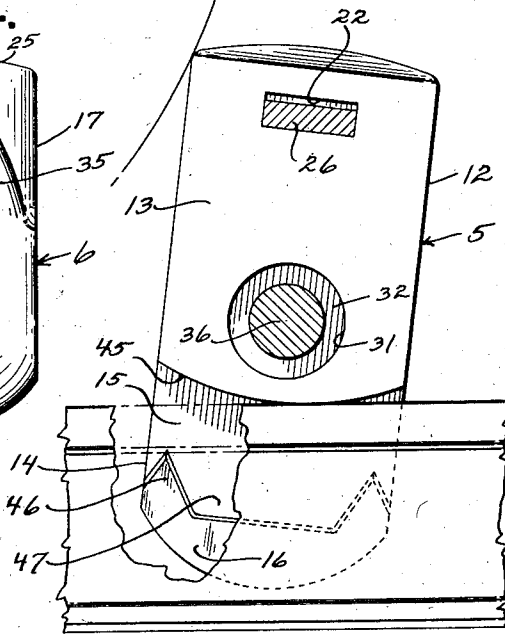
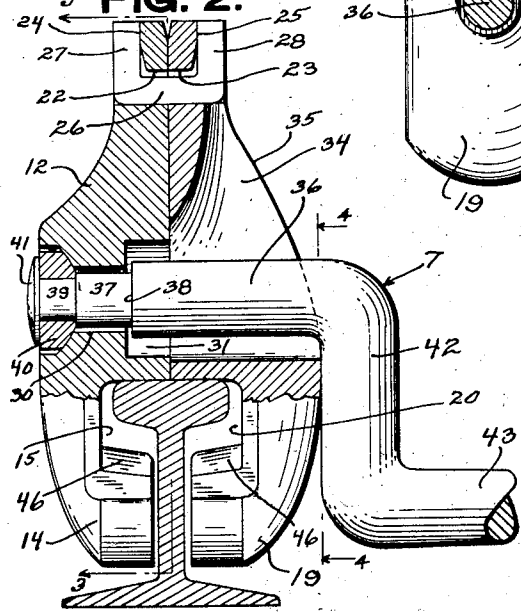


FIG. 2.



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CAR STOP

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13 Claims. (Cl. 104—258)

The present invention relates to improvements in car stops such as disclosed in my issued Patent Number 2,007,613 granted July 9, 1935 and the primary object of the present invention resides in the provision of a car stop having a construction permitting ready and easy placing and removal of the stop in operative relation upon a rail and without liability of injury to the operator.

A further object of the invention is to provide a car stop which will be opened by merely tilting the stop so as to permit easy placing of the stop downwardly over the rail at any desired point therealong.

A further object resides in the provision of a car stop which requires use of only one hand of the operator for placing or removal of the stop, and which stop also allows for the operator's hand being sufficiently spaced from the car wheel as to prevent possible injury to the operator should the car be accidentally started.

A further object resides in the novel formation of the rail engaging members ensuring gripping of the rail and permitting escape of dirt and rust from the rail, such as would tend to prevent proper functioning of the stop when engaged at either side by a car wheel.

A further object is to provide a car stop embodying a pair of pivotally connected rail engaging members adapted to be closed upon a rail with a cam action and in such manner as to prevent accidental separation of the stop from the rail.

A still further object is to provide a strong and durable car stop wherein the rail engaging members will grip the rail with a rolling clamping action when engaged by a car wheel.

Other objects and advantages of the invention will be apparent from the following detailed description, taken in connection with the accompanying drawing forming a part of this specification and in which drawing:—

Figure 1 is a central vertical section thru the stop and showing the manner in which the rail engaging members may be opened or spread by merely tilting the stop so that the stop may be easily placed and removed from the rail.

Figure 2 is a central vertical section showing the stop in a closed position upon a rail.

Figure 3 is a vertical section on the line 3—3 of Figure 2.

Figure 4 is a section on a reduced scale on the line 4—4 of Figure 2.

In the drawing and wherein like reference characters designate corresponding parts thruout the several views, the car stop comprises a pair

of stop plates or rail engaging members 5 and 6 provided with a closing or clamping member 7 which acts with a cam action upon one of the plates to close and retain the stop plates in position upon the rail A. The stop plates 5 and 6 are substantially rectangular shaped in plan and are pivotally connected at their upper ends by a hinge member 8 permitting spreading of the plates at their lower ends.

The rail A shown is of usual formation, embodying the head 9, web 10 and base flange 11. While the form of car stop herein shown and described may be made in different sizes for use upon various sizes of rails, the stop is primarily designed for use in connection with mine railways and the like.

Referring first to the specific formation of the stop plate 5, the same is formed with an upper or body portion 12 having a flat inner surface 13 and having its outer surface tapering towards the upper end of the stop plate. Provided below the body portion 12 is a grip portion 14 forming a transverse way 15 at the inner side and adjacent the lower end of the plate 5 for receiving one edge portion of the rail head 9. The flat inner surface 16 of the grip portion 14, below the transverse way 15, extends parallel to and in outwardly offset relation to the flat inner surface 13 of the body portion 12.

The stop plate 6 embodies an upper or body portion 17 having a flat inner surface 18. Provided below the body portion 17 is a grip portion 19 forming a transverse way 20 at the inner side of the stop plate disposed in confronting relation to the transverse way 15 of the companion stop plate 5. This grip portion 19 is also preferably formed with a flat inner surface 21 extending parallel to and in outwardly offset relation to the flat inner surface 18 of the body portion 17 whereby the confronting surfaces 16 and 21, when the stop plates 5 and 6 are closed as in Figure 2, are spaced apart a distance greater than the thickness of the rail web 10.

The hinge member 8 which serves to pivotally connect the plates 5 and 6 together at their upper ends, is of U-shape in formation and may easily be replaced should it become broken. The plates 5 and 6 are provided adjacent their upper ends with rectangular shaped openings 22 and 23 respectively and these openings are disposed midway between the side edges of the plates as shown in Figure 3. Provided in the outer surface of the plate 5 is a recess 24 which extends from the opening 22 to the upper end of the plate, while provided in the outer surface of the

plate 6 is a similar recess 25 which extends to the upper end of the plate 6. These recesses 24 and 25 are of a width substantially equal to the length of the openings 22 and 23 and are preferably beveled slightly as shown in Figure 2. As also shown more clearly in Figure 2, the upper ends of the inner plate surfaces 13 and 18 are also beveled slightly to permit spreading of the plates at their lower ends. The hinge member 8 is formed of a flat strip of iron providing a connecting portion 26 extending thru the openings 22 and 23, and arms 27 and 28 respectively arranged in the recesses 24 and 25. The connecting portion 26 as will be observed, extends with a loose fit thru the openings 22 and 23. In placing the hinge member 8 in position for use, or when replacing a broken hinge member, an arm is first bent at a right angle at one end of the connecting portion 26 and the metal strip cut off at the proper length so as to leave enough for formation of the other arm. The L-shaped metal strip is then heated and inserted thru the openings 22 and 23 and the other arm folded up into position in one of the recesses 24 or 25. While the member 8 is still hot, the stop plates 5 and 6 are sprung or spread apart the desired distance to permit proper hinged movement of the plates after the hinge member has cooled. Recessing of the ends of the hinge member 8 into the stop plates not only serves to limit relative lateral shifting of the plates but also reduces likelihood of the hinge member being broken.

Provided in the lower portion of the body portion 12 of the stop plate 5 is a circular opening 30 being enlarged at its inner end as at 31 providing an inwardly facing shoulder 32. Formed at the outer end of the opening 30 is an enlarged socket 33 having a rounded base. Provided in the body portion of the stop plate 6, is a vertically elongated opening 34, the lower end of which aligns with the opening in the stop plate 5 when the plates are closed. The outer surface of the plate body portion 17 extends in upwardly converging relation to the inner plate surface 18 and forms a cam edge 35 along each side of the elongated opening 34 with which the closing or clamping member 7 co-acts for closing the stop plates.

The closing or clamping member 7 may be formed from a cylindrical bar bent to form a combined coupling and pivot pin portion 36 extended loosely thru the elongated opening 34 and having its free end loosely and rotatably secured in the stop plate 5. The coupling pin portion 36 extends into the enlarged inner end 31 of the circular opening 30 and has a reduced shank portion 37 loosely rotatable in the opening 30 and forming a shoulder 38 for engaging against the shoulder 32. Beyond the shank portion 37, the pin portion 36 is further reduced as at 39 and receives a bushing or washer 40 having a rounded inner side to engage the rounded base of the socket 33. The flat outer side of the bushing 40 extends substantially flush with the outer surface of the stop plate 5, and the end of the reduced portion 39 is riveted over the outer side of the bushing as at 41 whereby the bushing serves to prevent withdrawal of the coupling pin portion 36 from the stop plate 5. Thus, the coupling pin portion 36 has a loose swivel connection in the stop plate 5.

Extending at a right angle from the outer end of the pin portion 36 is a crank arm 42 provided at its outer end with an elongated handle or

hand gripping portion 43 preferably extending in parallel relation to the pin portion 36. The outer end of the handle portion 43 is preferably apertured as at 44 for a purpose to be subsequently described. As shown in Figure 1, the pin portion 36 is of such length that when the stop plates are spread apart for placing downwardly upon a rail, the crank arm 42, at its lower portion, moves into the elongated opening 34 and is held in an upright position between the side walls of the opening.

The transverse ways 15 and 20 are each provided at their upper edge with an arcuated gripping surface 45, which, when the stop plates 5 and 6 are closed, have a rolling contact with the upper or tread surface of the rail head 9. Provided on each rail gripping portion 14 and 19, at the lower edges of the transverse ways 15 and 20, is a pair of spaced apart pointed gripping teeth 46 for cooperating with the arcuate gripping surfaces 45 when the stop is rocked in either direction longitudinally of the rail. These pointed gripping teeth 46 are spaced adjacent opposite ends of the transverse ways and provide between the teeth, a cavity or hollow space 47 which permits escape of dirt and rust loosened from the rail and allows the teeth to firmly bite into the under surfaces of the rail head at opposite sides of the web 10.

The car stop is of such construction as to permit ready and easy placing of the stop upon a rail by one hand and without likelihood of the operator being injured while placing or removing the stop. In applying the stop to a rail, the operator merely grasps the long hand grip portion 43 and allows the stop plates 5 and 6 to be rotated by gravity, due to the heavier lower ends of the plates, to a vertical position whereby the crank arm 42 aligns vertically with the elongated opening 34. The hand grip portion 43 is then tilted as in Figure 1 whereupon the stop plates will be opened at their lower ends so that the plates may be slipped downwardly over the rail until the arcuate gripping surfaces 45 engage upon the tread surface of the rail head. When the stop is so tilted, the shoulder 37 on the pin portion 36 abuts the shoulder 32 which tilts the plate 5 and allows the plate 6 to swing by gravity away from the plate 5. Limited spreading or opening movement of the stop plates may either be accomplished by the hinge member 8 or thru engagement of the outer end of the pin portion 36 with the bottom of the opening 34. The latter method will relieve strain upon the U-shaped hinge member. After the stop plates are lowered upon the rail, the hand grip portion 43 may be raised to a horizontal position allowing the stop plates to close upon the rail head by gravity action due to their heavier lower ends. The closing or clamping member 7 is then rotated in either direction about the pin 36 as an axis so that the crank arm 42 moves downwardly over one of the cam edges 35 and thus closes the stop plates upon the rail. When in this closed position as in Figure 2, the weight of the hand grip portion 43 prevents accidental turning of the clamping member 7 to allow opening of the plates 5 and 6. When removing the stop from a rail, the hand grip portion 43 is first swung upwardly so that the crank arm 42 aligns with the opening 34 and then the clamping member 7 moved toward the rail and the plates spread apart by engagement of the shoulder 38 with the shoulder 32. The entire stop is then tilted so that the stop plates assume a position as shown

in Figure 1 thus allowing the plates to be raised from the rail.

When a car wheel engages the upper portion of the stop plates at either edge thereof, the plates will have a clamping action upon the rail head and cause the teeth 46 to bite into the under side of the rail head. The rolling contact of the arcuate gripping surfaces 45 dispenses with any biting in action of the car stop tending to raise burrs upon the tread surface of the rail. The car stop is of such construction that the same may be placed upon a rail by a downward movement from above the rail and therefore may be placed at either side of the wheels of rolling stock.

The hole 44 in the end of the hand grip portion 43 will allow for a chain or the like being attached so that the car stop may be secured at a location for use, or may be hung upon the rolling stock.

Thus it will be seen that a car stop has been disclosed of a construction permitting ready and easy placing of the stop in position for use at any desired point along a rail by merely tilting the stop so as to automatically cause opening of the stop plates. The stop is also of such construction as to reduce liability of the operator being injured while placing and removing the stop, and when applied to a rail will have a rolling clamping action upon the rail when engaged at either side by a car wheel.

Changes in details may be made to the form of invention herein shown and described, without departing from the spirit of the invention or the scope of the following claims.

I claim:

1. A car stop for trackway rails, comprising a pair of stop plates hingedly connected at their upper portions for positioning in straddled relation downwardly over the rail, and a closing member acting with a cam action for closing the stop plates in operative position upon the rail, said closing member having swivel connection with one of the stop plates and restrained against longitudinal movement therein and loosely extending thru an opening of such size and contour in the companion stop plate to permit limited opening movement of said companion stop plate away from the first mentioned stop plate by tilting the stop.

2. A car stop for trackway rails, comprising a pair of stop plates hingedly connected at their upper portions, and a closing member swivelly connected at one end to the intermediate portion of one of the stop plates and loosely extending thru the intermediate portion of the other stop plate and provided at its free end with an offset elongated hand gripping portion for tilting the stop to permit opening of the stop plates about their hinge connection by gravity action.

3. A car stop for trackway rails, comprising a pair of stop plates, means connecting the stop plates with a loose hinge joint at their upper ends, and a closing member at the intermediate portions of the stop plates and acting with a cam action for closing the plates at their lower ends, said closing member having a loose swivel connection at one end with one of the plates and having a substantial hand gripping portion at its other end projecting laterally of the other plate.

4. A car stop for trackway rails, comprising a pair of stop plates having rail engaging portions at their lower ends, a U-shaped member hingedly connecting the plates together at their upper ends, and a closing member swivelly connected at one end to one of the plates and having a

portion acting with a cam action upon the companion plate for closing the plates at their lower ends upon the rail.

5. A car stop for trackway rails, comprising a pair of stop plates having rail engaging portions at their lower ends, said plates each having an opening at its upper end, a U-shaped hinge member loosely fitting in said openings to hingedly connect the plates at their upper ends, and a closing member extending through the intermediate portions of the plates for closing the plates at their lower ends upon the rail.

6. A car stop for trackway rails, comprising a pair of stop plates having rail engaging portions at their lower ends, said plates each having an opening adjacent its upper end midway between the side edges of the plates and a recess extending upwardly from the outer ends of the openings, a U-shaped hinge member connecting the plates embodying a connecting portion loosely extending thru the openings and upstanding arms fitting in the recesses, and a closing member traversing the intermediate portions of the plates for closing the plates at their lower ends upon the rail.

7. A car stop for trackway rails, comprising a pair of stop plates having rail engaging portions at their lower ends, means hingedly connecting the plates at their upper ends, a cam surface at the outer side of one of the plates, and a closing member for the plates embodying a pin portion swivelly mounted in the other plate and a crank arm for acting upon said cam surface to close the plates at their lower ends upon the rail.

8. A car stop for trackway rails, comprising a pair of stop plates having rail engaging portions at their lower ends, means hingedly connecting the plates at their upper ends, a cam surface at the outer side of one of the plates, and a closing member for the plates embodying a pin portion journaled with limited axial movement in the other of said plates, a crank arm at the outer end of the pin portion for acting upon said cam surface to close the plates, and an elongated hand gripping portion extending from the crank arm parallel to the pin portion.

9. A car stop for trackway rails, comprising a pair of stop plates having rail engaging portions at their lower ends, one of said plates having a circular opening therethru and the other plate having an elongated opening therethru, a cam edge along each side of the elongated opening at the outer side of the plate, means hingedly connecting the plates at their upper ends, and a closing member for the plates embodying a pivot pin portion journaled at one end in said circular opening and having its outer end projecting through the elongated opening, a crank arm at the outer end of the pin portion engageable with either of said cam edges to close the plates at their lower ends, and a hand gripping portion extending in right angular relation from the crank arm.

10. A car stop for trackway rails, comprising a pair of stop plates having rail engaging portions at their lower ends, one of said plates having a circular opening therethru enlarged at its inner end to form an annular shoulder and enlarged at its outer end to form a socket having a rounded base, and the other plate having an elongated opening therethru, cam projections on the latter mentioned plate providing a cam edge along each side of the elongated opening, means hingedly connecting the plates at their upper ends, and closing means for the plates comprising a

clamping lever embodying a pivot pin portion having a reduced portion loosely rotatable in the circular opening and providing a shoulder for abutting said annular shoulder to limit axial
 5 movement of the pivot pin in one direction, a bushing secured to the free end of the reduced portion and fitting in said socket, a crank arm at the outer end of the pin portion to engage either of said cam edges to close the plates, and
 10 a hand gripping portion extending from the crank arm.

11. A car stop for trackway rails, comprising a pair of stop plates having confronting transverse ways adjacent their lower ends, said transverse
 15 ways each having an arcuate gripping surface for rolling contact with the upper side of the rail head and gripping teeth for engaging the under side of the rail head, means hingedly connecting the plates at their upper ends, and means for
 20 closing the plates at their lower ends upon a rail.

12. A car stop for trackway rails, comprising a pair of stop plates hingedly connected at their upper ends and having confronting transverse ways, said ways each having an upper arcuate gripping surface for rolling contact with the rail
 5 head and spaced apart gripping teeth cooperating with the arcuate gripping surfaces, and means for closing the plates upon the rail.

13. A car stop for trackway rails, comprising a pair of stop plates hingedly connected at their
 10 upper ends and having confronting transverse ways, said ways each having an arcuate gripping surface at its upper side for rolling contact with the upper face of a rail head and a pair of spaced apart pointed teeth at the lower side of the way
 15 for biting into the under face of the rail head, said teeth providing a hollow space therebetween, and means for closing and retaining the plates in position upon a rail.

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