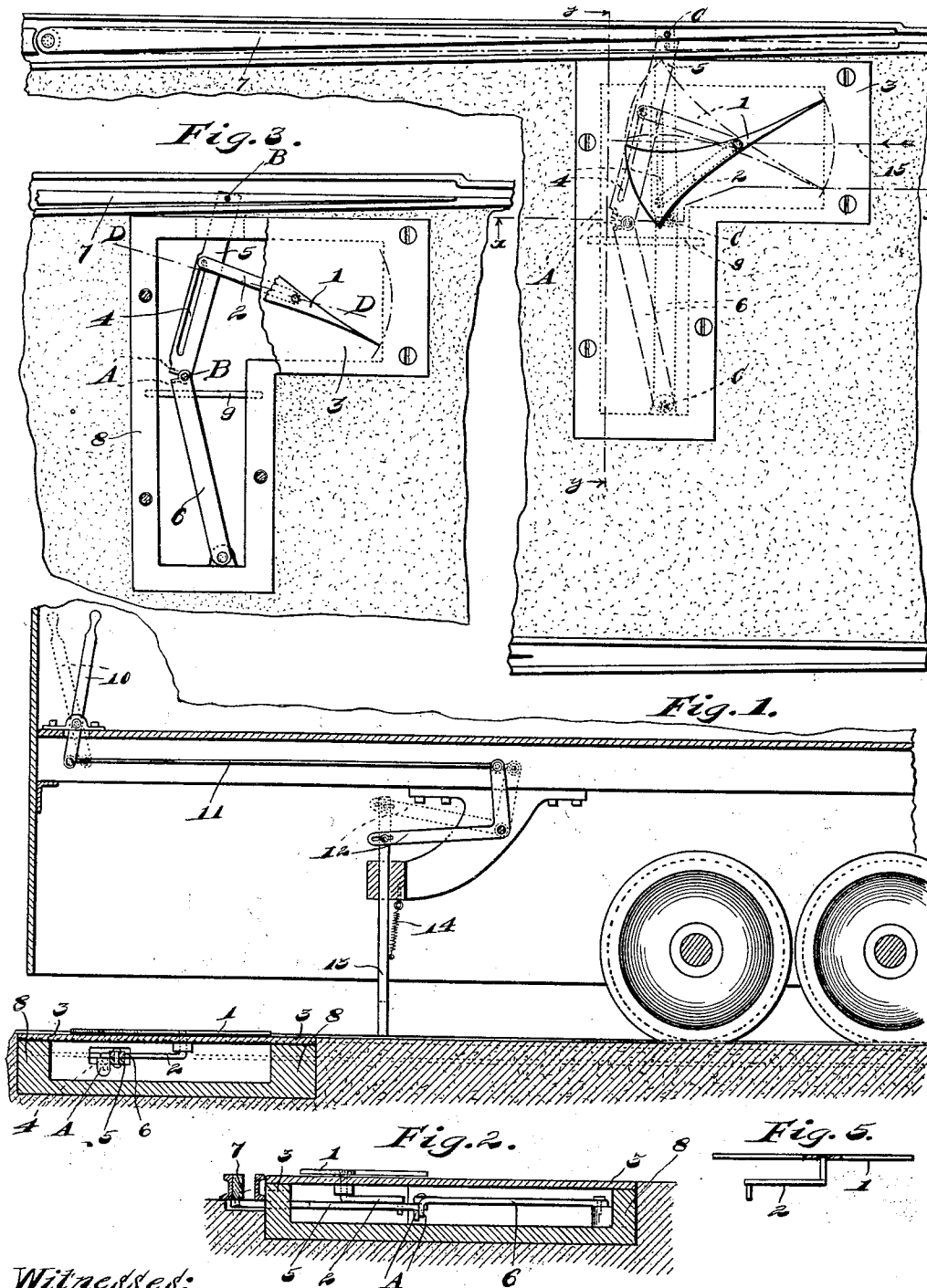


D. H. McCLELLAND.
 OPERATING AND LOCKING APPARATUS.
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1,050,035.

Patented Jan. 7, 1913.



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OPERATING AND LOCKING APPARATUS.

1,050,035.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, DAVID H. McCLELLAND, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Operating and Locking Apparatus, of which the following is a specification.

My invention relates more particularly to that class of apparatus which will alternately operate and hold any object to which it may be properly applied.

Further objects in this invention are to provide apparatus of such a character with such combination of parts and members that lock when required, release and operate when required, and of such a type that it may be applied to railroad track switches, and particularly that class of switches used in tracks on which street cars operate, and for convenience may be called, "railroad switch."

Further objects in this invention are to provide apparatus of such a character that it may be operated from the car without stopping the car.

With the above and other objects in view, the invention consists of the novel provision, construction, association and relative arrangement of parts and members as hereinafter described, and shown in the accompanying drawing.

In the drawing:—Figure 1 is a top plan view of my improved switch. Fig. 2 is a view of portion of car, also view of a device which may be used to operate switch, also a sectional view taken on the line *x x* of Fig. 1. Fig. 3 is a top plan view of my improved switch with portions broken away to expose movable mechanism. Fig. 4 is a sectional view taken on line *y y* of Fig. 1. Fig. 5 is a detail view of crank 2, and plate 1, showing that by reason of being securely fastened together, they become one member.

Similar letters refer to similar parts and members throughout the several views.

In the drawings:—1 is a plate resting upon and pivotally secured to a metal covering 3.

2 is a crank securely fastened to plate 1, and its free end so fashioned as to travel in slot 4, in rod 5. One end of rod 5 is pivotally secured to rod 6, the other end of rod 5 is pivotally secured to the free end of the pivoted switch rail 7. Rod 6 is pivotally secured to casting 8. Rods 5 and 6 have

lugs A, which are adapted to press together, as hereinafter described. Plate 9 is securely fastened to casting 8, and is adapted to support rod 6. Lever 10 is pivotally secured to the floor of the car within easy reach of the motorman. A portion of said lever extends through and below the floor of the car where link 11 connects with bell crank 12. Bell crank 12 is pivotally secured to rod 13. A coil spring 14 holds rod 13 in its proper position when not in use. Rod 13 should be made of steel of the proper temper, and of a required size, which would permit it to spring laterally sufficient to pass plate 1, at a point where plate 1 is pivotally secured to cover, and also to permit it to spring backward, and clear plate 1 in case the switch rail 7 should be clogged in any manner, to prevent its operation.

The operation of my improved switch is as follows: When the motor-man desires to shift the switch rail 7, he pulls the free end of lever 10, which causes rod 13 to descend by reason of its connection with bell crank 12 and link 11. Rod 13 is placed on the car in such relative position that when rod 13 descends, it will alight upon cover 3, at a point indicated by dotted dash line 15. As the car proceeds, rod 13 will travel as indicated by arrow, and press against plate 1, whereupon rod 13 will deviate from its path of travel sufficient to pass that portion of plate 1, where plate 1 is pivotally secured to cover 3. Rod 13 now bears against plate 1, both laterally and forward, causing plate 1 to swing upon its bearing from the position shown in Fig. 1, and stops at a position indicated by dotted dash line. As previously stated, crank 2 is securely fastened to plate 1, therefore the free end of crank 2 has traveled with plate 1 from a position indicated by dotted lines in Fig. 1 to a position as clearly shown in Fig. 3. The free end of crank 2 is so fashioned that it protrudes through rod 5 in slot 4, as seen in Fig. 4. Therefore the described movement of crank 2 has carried rods 5 and 6 from a position as shown by dotted lines in Fig. 1, to a position shown by dotted dash lines, and more clearly seen in Fig. 3. This action of rods 5 and 6 causes switch rail 7 to move from position as shown in Fig. 1, to a position as shown by dotted dash line, and clearly shown in Fig. 3. Particular attention is now called to crank 2, as shown in Fig. 3. It has in the described movement approached

and passed a position of right angles with rod 5, as shown by dotted dash line D D. Therefore, any pressure brought to bear upon switch rail 7 positively cannot move it. 5 It will be now observed that the slender portion of plate 1 has passed to the opposite side of line 15 from where it previously stood. Therefore, if rod 13 were again used as previously described, the reverse move- 10 ment would take place in all the movable members, and in so doing, pivot bearings B B would approach and pass an imaginary straight line to a position shown at C C C. Lugs A now press together, preventing rods 15 5 and 6 from going farther. Thus, rods 5 and 6 again securely hold switch rail 7, and any pressure brought to bear upon switch rail 7 positively cannot move it. Thus it is clearly shown that this invention, by reason 20 of its peculiar construction, combination and association of parts and members will lock and securely hold switch rail 7 in each of its two extreme positions, and will also lock and securely hold any other object to 25 which it may be properly applied, and release and move same when so desired.

I do not desire to be understood as limiting myself to the relative size and construction of parts and members, but reserve the 30 right to vary the same in adapting the improvement to various conditions of use, without departing from the spirit of this invention, and the terms of the following claims.

35 And now, having fully described my invention, what I claim as new and desire to secure by Letters Patent, is—

1. In a switch having a casting to which is pivotally secured a switch rail which has 40 its free end pivotally secured to a rod having its free end pivotally united with a second rod, which is pivotally secured to the casting; a crank having a pin which travels

in a slot in the first-mentioned rod, which may cause the rods to stand in alinement 45 when operating means engages a sheet metal member secured to the crank and in so doing will cause the switch rail to move to one of its extreme positions and lock and hold it there substantially as shown and de- 50 scribed.

2. In the combination of a switch, of a member composed of a piece of sheet metal and an arm, of a casting containing a recess, of a cover for same containing a bearing 55 for the arm, of a rod containing a slot in which the free end of said arm travels, of a joint intermediate from the extreme ends of the rod, one end of the rod being secured to the casting and the other end pivotally 60 secured to the free end of a pivoted switch rail, said switch rail to be thrown when operating means is lowered from the car, and remain automatically locked when thrown, substantially as shown and de- 65 scribed.

3. In the combination of a switch, of a casting having a cut-away portion, of a switch rail movably mounted upon the casting, of a link pivotally mounted to the free 70 end of said switch rail, of a pivot bearing in the cut-away portion of the casting adapted to movably secure the end of said link, of a plate spanning the cut-away portion in the casting adapted to support the hinged 75 portion of said link, of an arm movably mounted to the cover of the casting, a pin on the free end of said arm which travels in a slot in the said link, of a piece of sheet metal rigidly secured to said arm adapted 80 to engage operating means on a car, substantially as shown and described.

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