(No Model.)

C. F. WILSON.

RAILWAY SWITCH.

No. 519,464. Patented May 8, 1894.

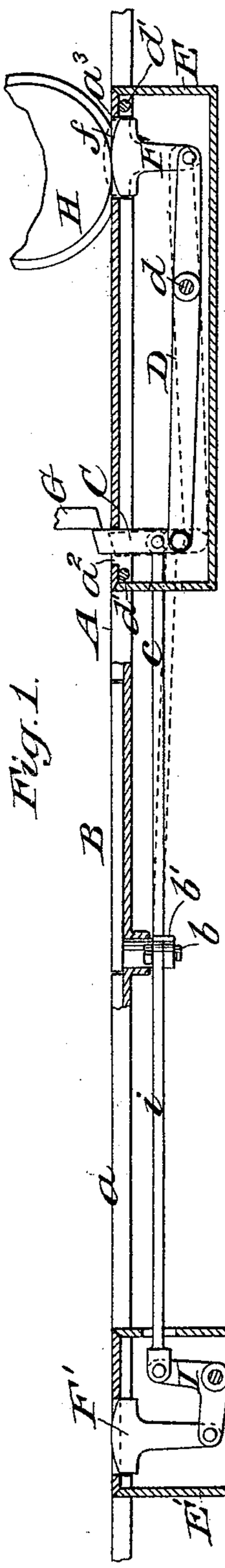


Fig. 1.

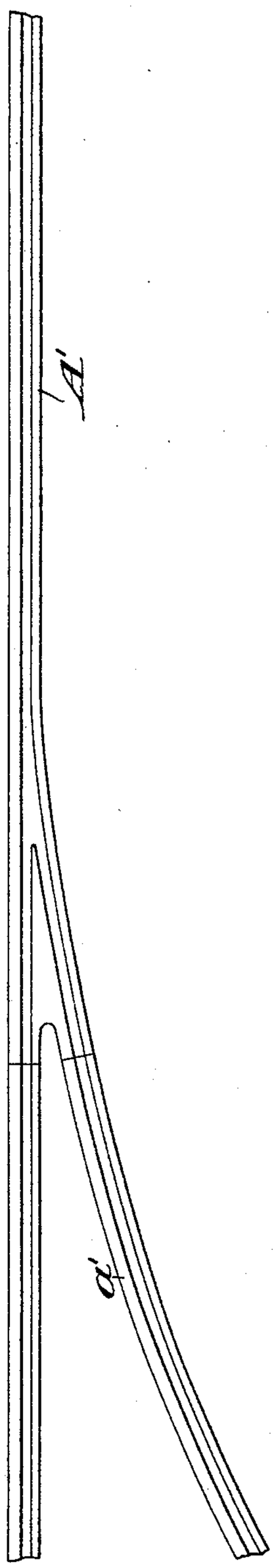
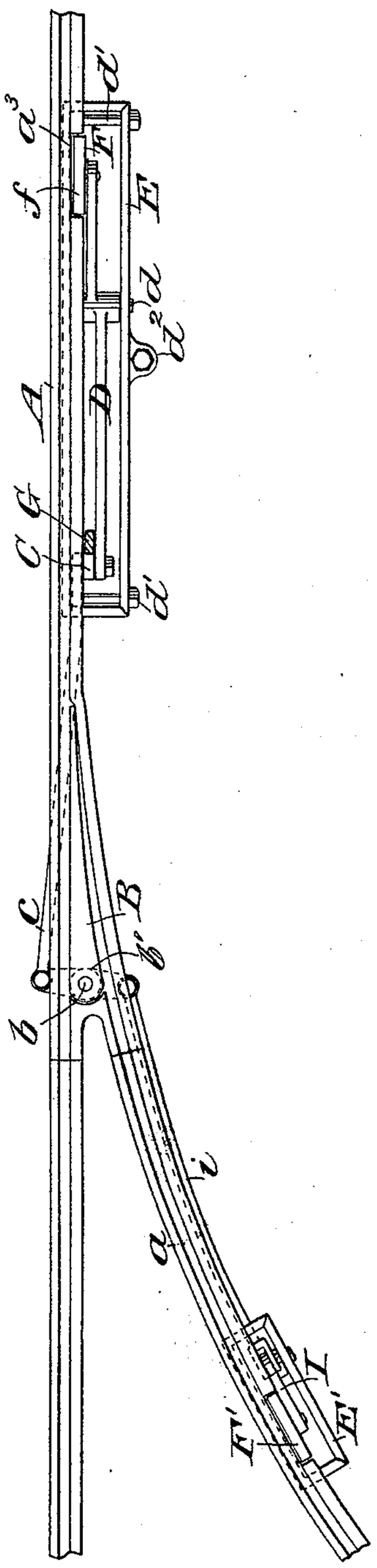


Fig. 2.



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CHARLES F. WILSON, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF TO GEORGE F. MALBY, OF SAME PLACE.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 519,464, dated May 8, 1894.

Application filed November 22, 1893. Serial No. 491,676. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. WILSON, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Railway-Switches, of which the following is a specification.

My invention relates to an improvement in railway switches in which a swinging switch tongue is placed under the control of a vertically movable and swinging operating lever adapted to be thrown into and out of operative position by the pressure of the car wheel on a vertically movable bearing piece at the side of the track.

The object is to provide a simple and effective mechanism for placing the operation of the switch under the control of the approaching car and so construct it as to admit of utilizing parts which are not liable to become broken or deranged by heavy traffic across the tracks, as in case of trucking across street railway tracks.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 is a view of the switch operating mechanism in side elevation at the side of the track, the housings being shown in section, and Fig. 2 is a top plan view of a portion of a main track and portion of a shunt track diverging therefrom, showing the switch track and its operating mechanism in top plan.

The main and shunt rails, between which the swinging switch tongue is located, are denoted respectively by A and a and the corresponding rails at the opposite side of the track are denoted by A′ and a' respectively. The pivoted switch tongue is denoted by B and is fixed to its spindle b which spindle also has fixed thereto, below the rail, a cross head d'. One arm of the cross head, in the present instance that extending inwardly toward the center of the track, is connected with a switch operating lever C by means of a connecting rod c. The lever C is fulcrumed at the end of the long arm of a vibrating lever D extending in a general horizontal direction at the side of and below the rail A and the said operating lever C extends upwardly from its pivotal point through a hole a^2 in the top of the box E. The rod c is connected with the lever C at a point intermediate of its free end and its fulcrum.

The vibrating lever D is pivoted, as at d, to the sides of a box E and its short arm carries a bearing piece F which extends upwardly through the top of the box and through a recess a^3 in the side of the rail occupying, when in normal position, the position shown in dotted lines in Fig. 1. The upper face of the bearing piece F is preferably rounded, as shown at f, for the purpose of causing the wheel of the car to ride smoothly over it and gradually depress it.

It is intended that the box E; which forms a housing for the bearing piece F, the vibrating lever D and the operating lever C; shall be bolted to the side of the rail, as at d', and to further hold it in firm position, it may be bolted to an ordinary cross tie by means of a bolt extending through the laterally projecting perforated lug d^2. The bearing piece F and the operating lever C are so arranged with respect to the movements of the lever D that when the lever D is in its normal position with the top of the bearing piece F extending above the surface of the rail, the upper end of the operating lever C will be down, substantially on a level with the surface of the rail, but when the bearing piece F is depressed down to a level with the surface of the rail, as shown in full lines in Fig. 1, the operating lever C will be thrown upwardly above the top of the rail in position to catch the end of an operating arm G, attached to the car.

H indicates the wheel of an ordinary car and G indicates an operating arm which may be fixed to the body or platform of the car in any well known or approved manner so as to be lowered, when desired, into position sufficiently near the surface of the rail to catch the operating lever C. The operating arm G and wheel H must also be made to bear such relative positions that when the wheel H is on the bearing piece F, the operating arm G will be in a position to engage the lever C.

In operation: If the car-driver, motor-man or grip-man as his car approaches the switch wishes to turn his car on to the shunt track, he simply drops the arm G. As the wheel H of the car engages the bearing piece F and

depresses it, the lever C will be thrown up in front of the arm G and the latter pressing against its free end in the direction in which the car is traveling will thereby, through the connecting rod *c* and cross head *b'*, throw the switch tongue over into contact with the inner wall of the rail A, thereby guiding the wheel onto the shunt track. If, on the other hand, it be desired that the car pass along on the main track, the arm G will not be lowered and the wheel H will simply depress the bearing piece F as it passes over it, throwing the lever C upward, the latter falling back without any effect upon the switch tongue. In constructing the operating mechanism it is intended that the longer arm of the vibrating lever D and the parts carried thereby shall overbalance the shorter arm and bearing piece carried thereby so that the bearing piece F will be at all times returned to its normal position under the influence of gravity as soon as free from the wheel.

In order to re-seat the switch tongue B in position to leave the main track open after a car has passed onto the shunt track, I locate a second bearing piece F', quite similar to the piece F herein above referred to, at the side of the shunt rail *a* and connect it with one arm of an angle lever I pivoted in a box E', fixed in position at the side of the rail and connect the opposite arm of said angle lever by means of a rod *i* with the other arm of the cross head *b'* on the spindle of the switch tongue B. The operation of the switch tongue B, swinging its free end over to guide the car onto the shunt track, will rock the angle lever I in a direction to lift the bearing piece F' above the rail and the subsequent passing of the car over said lifted bearing piece F' will again—through the angle lever I and connecting rod *i*—rock the switch tongue B back toward the shunt rail leaving the main track open.

It will be observed that the several parts of the switch are so constructed that they may be made very strong and for the most part roughly finished, the parts which normally project above the rail into position to engage the wheels of trucks or other vehicles being of such a character that they may be acted upon without any liability of breaking them or of deranging the switch mechanism, while the only care required on the part of the person guiding the car is that he determine within reasonable time before reaching the switch whether he wishes to guide the car on to the shunt track or permit it to pass along the main track.

It is obvious that springs of ordinary form might be employed to assist the action of the parts in case it should be found expedient, but I find it preferable to utilize gravity only wherever it can be relied upon.

What I claim is—

1. In combination, the horizontally arranged vibrating lever, the bearing piece mounted on one arm of the lever, the switch operating lever mounted on the other arm of the vibrating lever and free to swing in the direction of the moving train, the swinging switch tongue and the connection between the switch tongue and the operating lever whereby the forward thrust of the switch operating lever advances the connection in a longitudinal direction to swing the switch tongue, substantially as set forth.

2. In combination, the swinging switch tongue, the vertically movable operating lever located in advance of the switch tongue and having a swinging movement in the direction of the moving train, the bell-crank lever located on the opposite side of the switch tongue, the arms extending in an opposite direction from the pivot to which the switch tongue is secured, connections leading from the said operating and bell-crank levers to the arms upon the pivot and bearing pieces connected with said levers and under the control of a passing car to swing the switch tongue in opposite directions substantially as set forth.

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