(No Model.)

C. F. WILSON.

RAILWAY SWITCH.

No. 544,874. Patented Aug. 20, 1895.

Fig. 1.

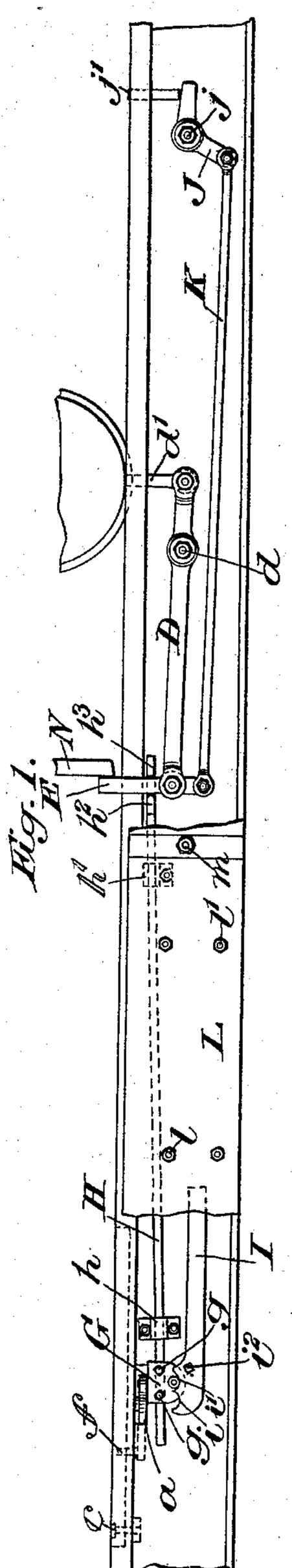


Fig. 2.

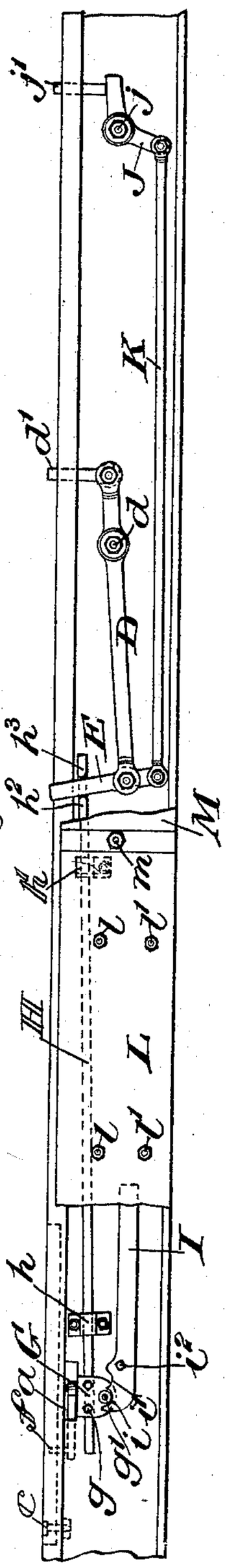


Fig. 3.

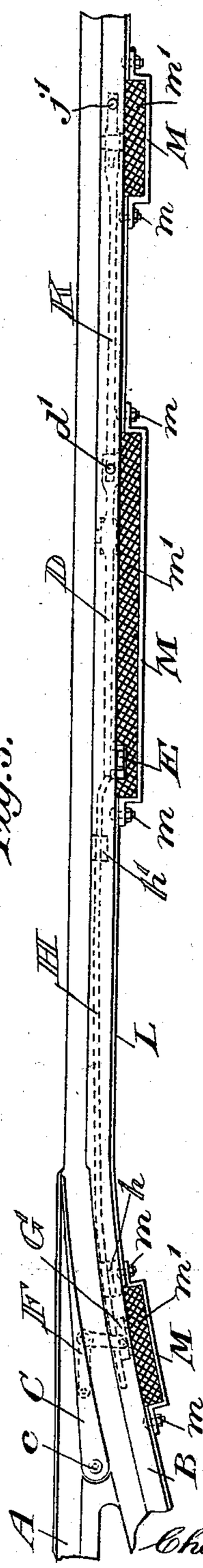
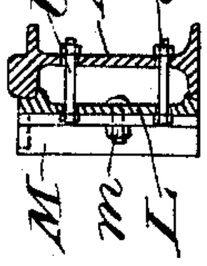


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES F. WILSON, OF BROOKLYN, NEW YORK.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 544,874, dated August 20, 1895.

Application filed March 29, 1895. Serial No. 543,636. (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 simple and effective device is provided for operating the switch, whereby the cars passing along the track are directed either along the main track or shunt-track, as may be desired, the said switch-operating device being under the control of the cars. The object is to provide a device of this character of such construction that the wheels of the cars will operate the device so as to close the switch to direct the cars along the main track, the said device being further provided with a switch-operating lever adapted to be brought into position to be engaged by a suitable operating device carried by certain of the cars, whereby said cars are directed along the shunt-track.

A further object is to provide a device which may be secured to and entirely supported by the track-rail, thereby doing away with the necessity of providing large boxes for supporting the parts, the boxes shown in the accompanying drawings being simply for the purpose of getting at the several parts of the device for purposes of oiling, &c.

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

Figure 1 is a view of the switch and operating mechanism in side elevation, the parts being shown in the positions which they assume after the car-wheel has passed the pin which closes the switch and has just depressed the pin which throws the switch-operating lever up into position to be operated by the projection on the car. Fig. 2 is a similar view showing the parts in the positions which they assume after the car has passed along the shunt-track. Fig. 3 is a top plan view of the track-rail, the operating mechanism being shown in dotted lines; and Fig. 4 is a transverse section through the rail, showing the manner of attaching the protecting-plate to the rail and the boxes to the protecting-plate.

The main-track rail is denoted by A. It is extended to form a shunt-track rail, as shown at B. The rail which I preferably use is of the well-known **I** shape.

C designates the switch-tongue, which is pivoted upon a suitable spindle *c*, as is usual.

D represents a vibrating lever, which is pivoted at *d* to the rail A, so as to have a vertical swinging movement thereon. To the short arm of this lever I secure a suitable operating-pin *d'*, which extends up through a suitable opening in the top of the rail A and has a vertical movement therein.

To the end of the long arm of the vibrating lever D, I pivot the switch-operating lever E, the upper arm of the said lever being adapted to be forced upwardly at the side of the rail A above the top of the said rail when the pin *d'* is depressed. This switch-operating lever E has a swinging movement lengthwise of the rail for opening and closing the switch-tongue C, as follows: Underneath the switch-tongue C, I pivot a horizontally-swinging two-armed lever F, one arm of the said lever being provided with a pin *f*, which engages a suitable socket in the switch-tongue, the other arm of the said lever being projected through a suitable opening *a* in the web of the rail and secured to a clamp G. This clamp G is adjustably secured to the rear end of a reciprocating connecting-rod H by means of suitable set-screws *g*. The reciprocating rod H is mounted in suitable guides *h h'* and is provided at its forward end with outwardly-extending portions h^2 h^3, which partially embrace the upper arm of the switch-operating lever E, so that as the said lever E is swung forward and backward it will reciprocate the connecting-rod H and thereby open and close the switch-tongue C. The switch-tongue C is yieldingly held in its open or closed position by means of a roller or stud *g'* upon the clamp G, which rests in one or the other of two recesses *i* or *i'* of a weighted lever I, which is pivoted to the rail A at i^2. As the switch-operating lever E is swung forward and backward, the roller or lug *g'* is forced over from one recess to the other in the weighted lever I.

The lower end of the switch-operating lever E is connected to one arm of an angle-lever J by means of a suitable connecting-rod K. This two-armed lever J is pivoted to the rail A at *j*, and its upper arm is engaged by a ver-

tically-moving pin j', which passes up through a suitable opening in the rail into position to be operated by the car-wheel. This pin j' may simply rest at its lower end upon the forwardly-extending arm of the two-armed lever J, or it may be secured thereto, as the pin d' is secured to the vibrating lever D, if found more desirable.

Along the side of the rail A, I locate a protecting-plate L, which extends preferably from the base of the rail up to the head of the rail and is secured thereto by means of suitable bolts $l\,l'$, which pass through the web of the rail A. At points opposite the several levers of the switch-operating mechanism I cut away the protecting-plate L and secure boxes M to the plate by suitable bolts m, the said boxes having removable covers m'.

In operation, supposing that a car passing along the track is a shunt-line car, the wheels of the car will first depress the pin j', which will rock the switch-operating lever E, so as to close the switch C. The wheels will next engage the pin d', attached to the vibrating lever D', thereby swinging the switch-operating lever E up into position to be engaged by a suitable projection N on the car, as shown in Fig. 1 of the drawings. This projection will then engage the switch-operating lever E and swing it backwardly, thereby opening the switch, so that the car, as it passes along, will be directed onto the shunt-track. Supposing that the next car is a main-track car, the wheels of the car will first depress the pin j', which was raised above the level of the rail by the backward swinging of the switch-operating lever E. This will close the switch. The further movement of the wheels of the car will depress the pin d', which will raise the switch-operating lever E at the side of the track and above the top of the same. As the main-line car has no projection for engaging the switch-operating lever E, it will, as it passes along the track, be directed along the main track.

It will thus be seen that the cars which are required to pass along the main track simply depend upon the tread of the wheels for selecting their path.

Instead of a single pin j', a plurality of pins might be located along the track-rail and engaging the lever J if found desirable. The mechanism as thus constructed is all supported by the track-rail, and the few openings or holes cut therein do not tend in any material degree to weaken said rail. Furthermore, the said mechanism does away entirely with the use of springs, which is a very advantageous feature.

It is evident that slight changes might be resorted to in the construction and operation of the several parts without departing from the spirit and scope of my invention. Hence I do not wish to limit myself strictly to the structure herein set forth; but

What I claim is—

1. In combination, a railway rail, a switch tongue, a vertically vibrating lever, a swinging switch operating lever pivoted to one arm of the vertically vibrating lever and connected with the switch tongue, a vertically swinging angle lever located in advance of the switch operating lever and connected thereto for swinging it positively in one direction and a projection on the car adapted to engage the switch operating lever when it is raised for swinging it positively in the opposite direction, substantially as set forth.

2. In combination, a railway rail, a switch tongue, a horizontally swinging angle lever for swinging the tongue, a vertically vibrating lever, a forward and backward swinging switch operating lever mounted upon one arm of the vibrating lever, a connection between the horizontally swinging angle lever and switch operating lever, a vertically swinging angle lever pivoted to the rail in advance of the switch operating lever and connected thereto to swing it in one direction to close the switch and a projection on the car for engaging the switch operating lever when it is raised for opening the switch, substantially as set forth.

3. In combination, a railway rail, a switch tongue, a vertically vibrating lever, a forward and backward swinging switch operating lever pivoted to one arm of the vibrating lever, an operating pin engaging the other arm and projecting through the top of the rail, a connection between the switch tongue and switch operating lever, a vertically swinging angle lever pivoted to the rail in advance of the switch operating lever and connected directly thereto and a pin carried by said angle lever and projected through the top of the rail, substantially as set forth.

4. In combination, a railway rail, a switch tongue, a horizontally swinging angle lever for swinging the switch tongue, a forward and backward swinging switch operating lever, a connecting rod engaging said operating lever, a clamp on the connecting rod engaging the horizontally swinging angle lever, a projection on the clamp and a weighted lever having recesses therein engaging the said projection for yieldingly holding the switch in its open and closed positions, substantially as set forth.

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