No. 618,621. Patented Jan. 31, 1899.

C. S. SCOTT.

SWITCH OPERATING MECHANISM.

(Application filed Aug. 5, 1898.)

(No Model.)

Fig. 1.

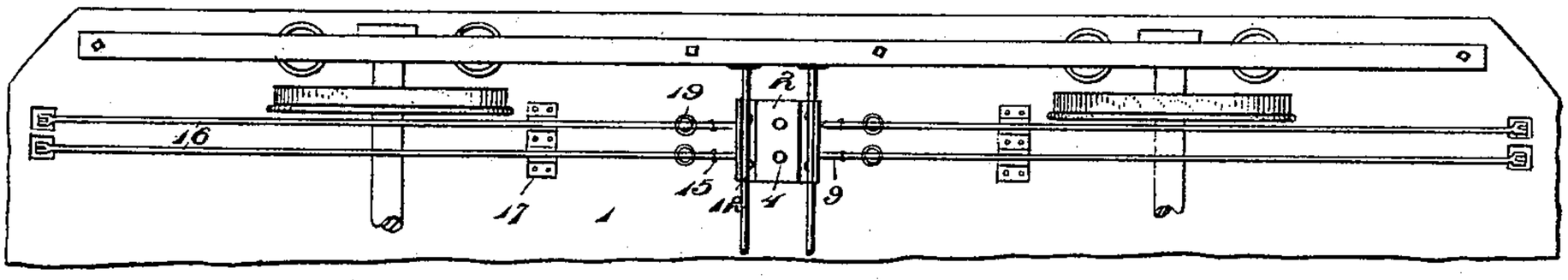


Fig. 2.

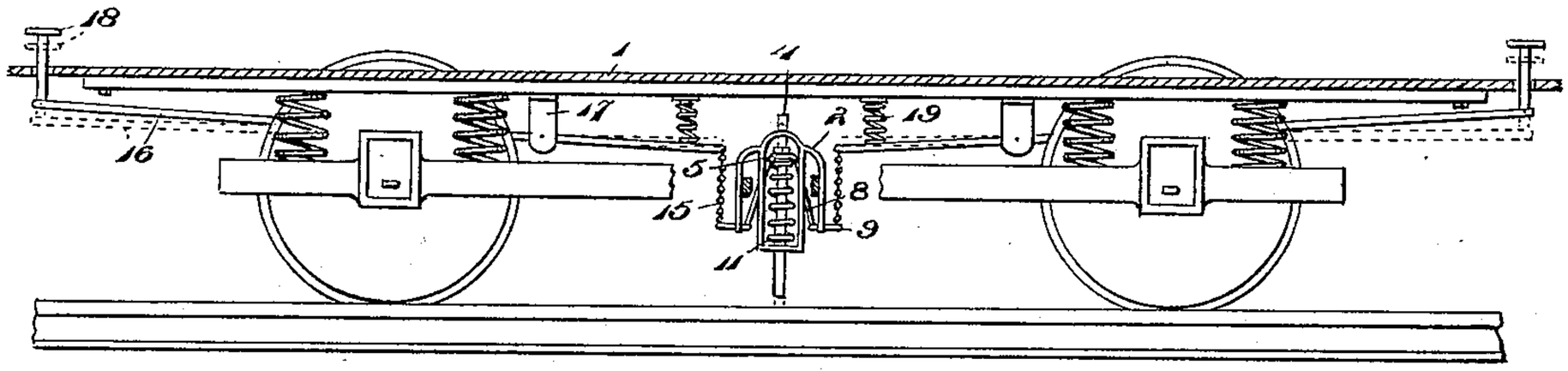


Fig. 3.

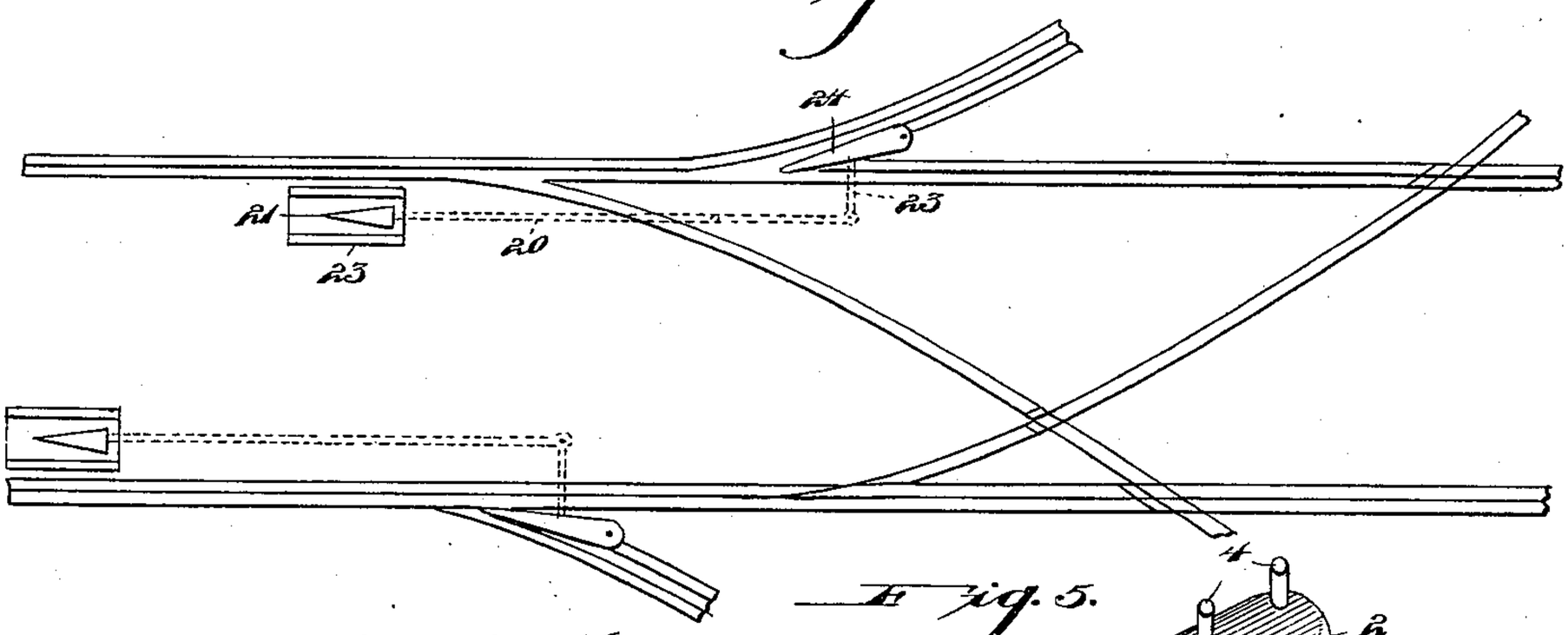


Fig. 4.

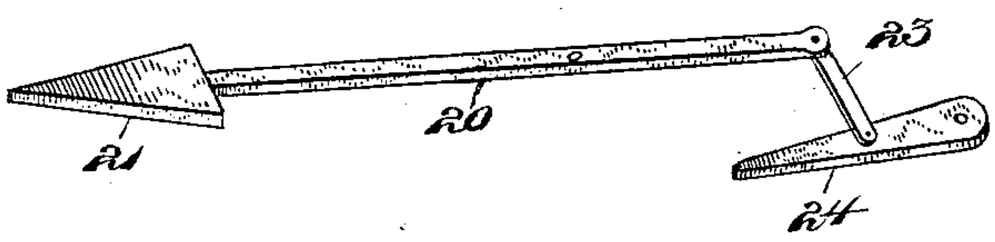


Fig. 5.

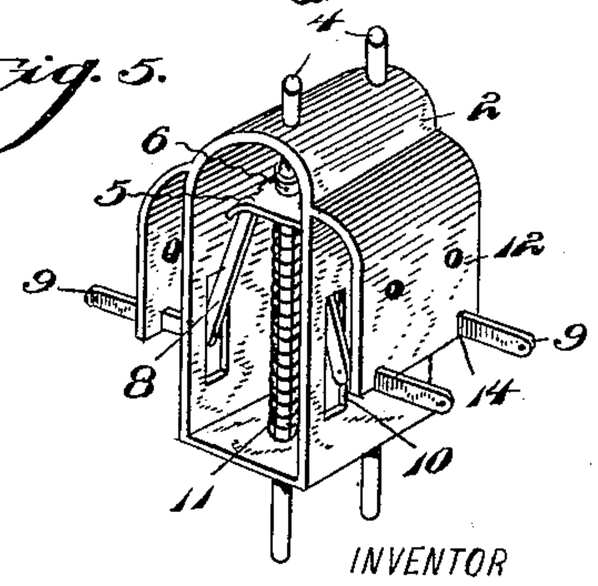
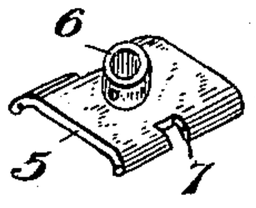


Fig. 6.



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UNITED STATES PATENT OFFICE.

CHARLES S. SCOTT, OF KEYSTONE, INDIANA.

SWITCH-OPERATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 618,621, dated January 31, 1899.

Application filed August 5, 1898. Serial No. 687,847. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. SCOTT, a citizen of the United States of America, residing at Keystone, in the county of Wells and State of Indiana, have invented certain new and useful Improvements in Switch-Operating Mechanism, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in switch-operating mechanism.

My invention has for its object to provide novel and effective means for operating the switch from the car-platform.

A further object of my invention is to construct a switch-operating mechanism of this character which can be conveniently placed upon any ordinary street-car without interfering in any manner with the other mechanism thereon.

My invention consists, briefly, in securing to the underneath part of the car-body a suitable frame in which are arranged spring-retracted plungers. These plungers are connected by a series of levers and rods to the operating-lever, which is placed at a convenient point in the car-platform.

The invention aims to construct a device of this class that will be extremely simple in its construction and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings, and particularly pointed out in the claim.

In describing the invention in detail reference is had to the accompanying drawings, in which—

Figure 1 is a top plan view of a portion of the truck, showing my improved switch-operating mechanism in position. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a top plan view of a portion of the track, showing the arrangement of switch as it may be employed in connection with my improved switch-operating mechanism. Fig. 4 is a perspective view of the switch-tongue and its operating-levers. Fig. 5 is a perspective view of the frame within which the spring-retracted plungers are arranged. Fig. 6 is a perspective view of the plate which is rigidly mounted on the spring-retracted plungers and to which the operating-levers are connected.

Referring to the drawings, in which like numerals of reference indicate similar parts throughout the several views of the drawings, 1 indicates the body of the car, to the under face of which is attached a suitable frame 2. This frame 2 is preferably located about midway of the car-wheels and may be attached to the car-body by means of the upwardly-extending brackets 3.

Within the frame 2 are arranged the spring-retracted plunger-rods 4, which are of sufficient length to extend some distance above and below the top and bottom of the frame, respectively. Mounted upon these rods and rigidly secured thereto by suitable means are plates 5, which are or may be formed with a hub 6, having a transverse aperture which registers with an aperture in the plunger-rod and is adapted to receive a fastening-pin. These plates are arranged on the plunger-rod within the frame 2, and at two opposite sides they are provided with a cut-away portion 7, which are adapted to receive the upper ends of the levers 8. These levers 8 have their lower ends pivotally connected to like levers 9, and to permit the downward movement of these levers the two closed sides of the frame are provided with vertically-extending slots 10, through which the levers 8 pass. Arranged upon the plunger-rods 4, between the bottom of the frame and the plate 5, are retracting-springs 11, which serve to elevate the plunger-rods when the pressure upon the operating-lever has been relieved. The upward movement of these plunger-rods and of the levers 9 is limited by means of wings 12, which are formed on the two closed sides of the frame and provided at their lower edge with recesses 14, adapted to receive the aforesaid levers 9. These levers 9 have chains 15 connected to their outer ends, the upper ends of said chains being attached to the rear end of the operating-lever 16. This operating-lever 16 is pivotally supported in a clevis 17, which is attached to the under side of the car-body. This operating-lever 17 extends forwardly of the car to a point underneath the car-plat-

form, where it is pivotally connected to the foot-lever 18, extending through said platform.

For assisting the retracting-springs 11 in returning the plunger-rods to the elevated position I provide resistance-springs 19, connected to the under side of the car-body and to the upper face of the operating-lever near its rear end. It will of course be understood that two of these operating-levers extend forwardly of the car on each side to engage the switch-lever in order to throw the switch in the desired direction, as will now be described.

The mechanism which I have shown herewith to be employed in connection with my operating mechanism consists of a lever 20, which is arranged in the bed of the track and is pivotally secured at or near its center. The forward end of this lever is formed with a triangular or dart-shaped head 21, which lies wholly within a bed-plate 22, which is suitably arranged in the road-bed at a point adjacent to the rail. The rear end of this lever 20 is pivotally connected to a short lever 23, which extends at right angles to the lever 20, and has its other end pivotally connected to the switch-tongue 24.

It is thought that, from the foregoing description when taken in connection with the accompanying drawings, the operation will be clearly understood, as it will be observed that when pressure is brought to bear upon foot-lever 18 the forward end of said lever will be forced downwardly and the rear end of said lever elevated, as shown in dotted lines. The elevating of the rear end of the lever 16 causes the chain to lift on the outward ends of the levers 9, and by reason of these levers being in engagement with the wing 12 the inner ends of the said levers are drawn downwardly, thus operating the plate 5 and drawing the plunger-rods 4 downwardly, where they will engage one side of the head 21 of the switch-lever 20. When the pressure is relieved, the springs 11 and 19 serve to elevate the plunger-rods to their normal position.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

In combination with a switch consisting of a pivoted switch-tongue, a toggle-lever pivotally connected to said switch-tongue, an operating-lever pivotally connected to said toggle-lever, said operating-lever having a triangular-shaped head on its free end; of an operating mechanism for said switch comprising a frame suitably supported from a car-body and having two closed sides, downwardly-extending wings formed integral with said sides and provided with notches in their lower end, said sides being also provided with vertical slots, plunger-rods operating vertically through said frame, a plate secured on each of said plunger-rods, said plate having notches in two opposite sides thereof, levers 8 pivotally secured to the plate within said notches and extending through the vertical slots in the sides of the frame, horizontal levers pivotally secured to said levers 8 and engaging in the notches in the lower ends of the wings, an operating and foot lever supported from the car-body, chains connecting said operating-levers with the horizontal levers, and retracting-springs arranged on said plunger-rods between the plate carried thereby and the bottom of the frame, substantially as shown and described.

In testimony whereof I affix my signature in the presence of two witnesses.

CHARLES S. SCOTT.

Witnesses:
A. P. HUMMER,
JOHN E. MARKLEY.