No. 786,564. PATENTED APR. 4, 1905.

E. G. HOWE.

DEVICE FOR OPERATING THE SWITCHES OF STREET RAILWAYS.

APPLICATION FILED MAY 24, 1902.

Fig. 5.

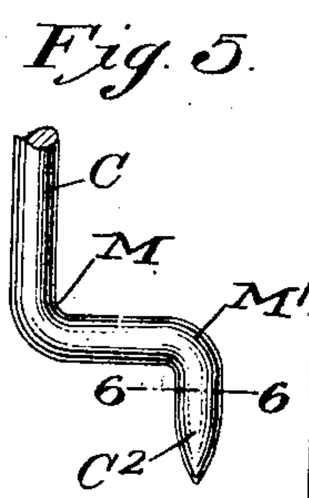


Fig. 6.

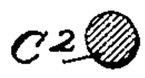


Fig. 2.

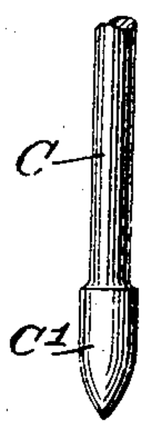


Fig. 1.

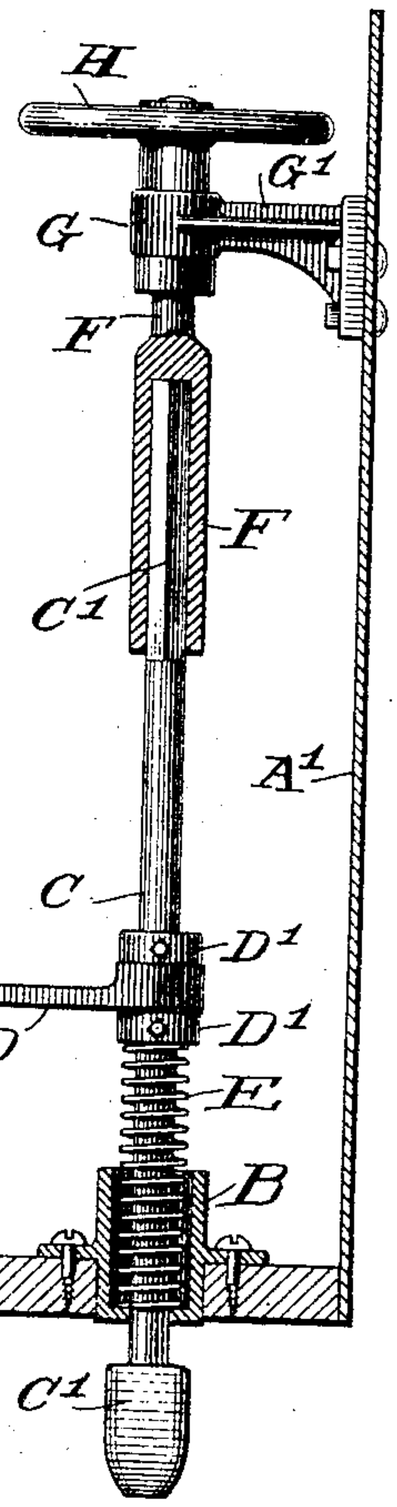


Fig. 7.

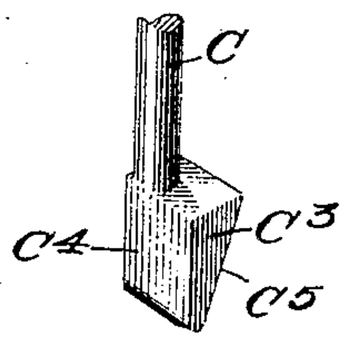


Fig. 3.

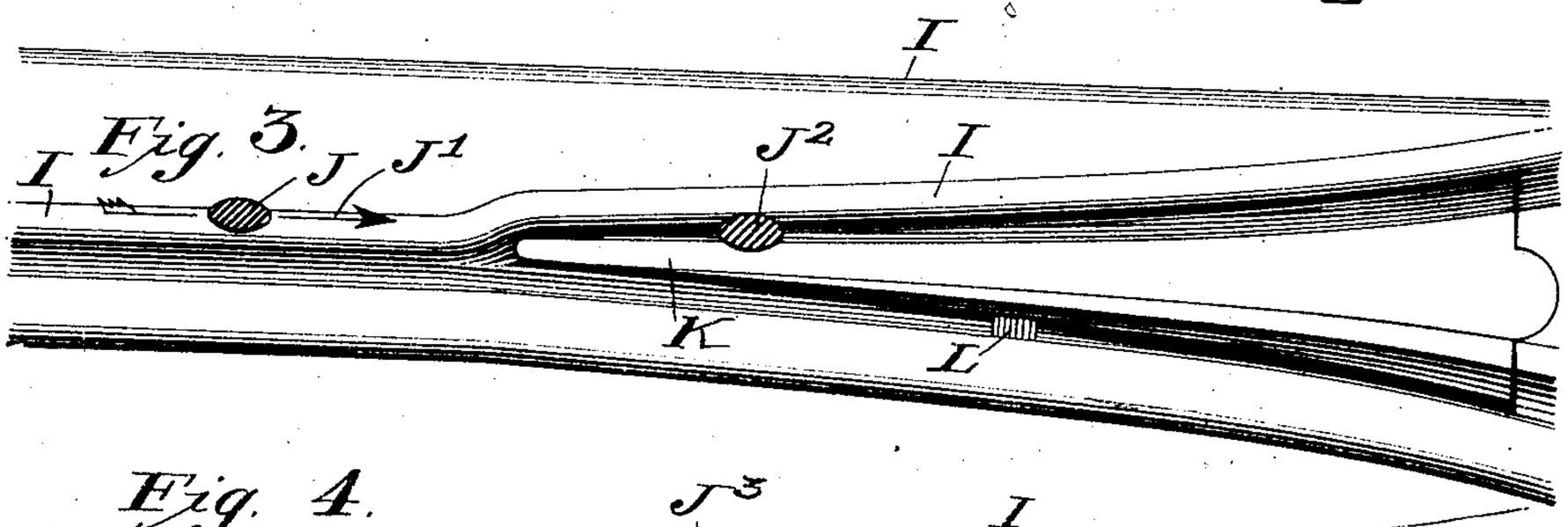
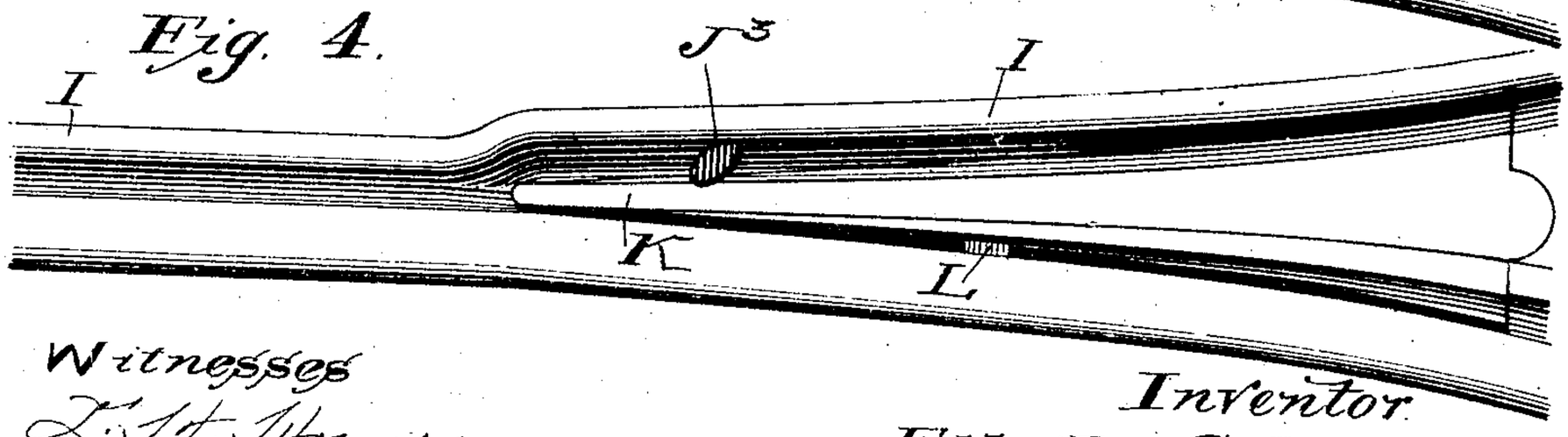


Fig. 4.



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No. 786,564. Patented April 4, 1905.

UNITED STATES PATENT OFFICE.

ELBRIDGE G. HOWE, OF MILLBURY, MASSACHUSETTS.

DEVICE FOR OPERATING THE SWITCHES OF STREET-RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 786,564, dated April 4, 1905.

Application filed May 24, 1902. Serial No. 108,767.

To all whom it may concern:

Be it known that I, ELBRIDGE G. HOWE, a citizen of the United States, residing at Millbury, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Devices for Operating the Switches of Street-Railways, of which the following is a specification accompanied by drawings forming a part of the same, in which—

Figure 1 represents in sectional view a platform of a street-railway car with my improved switch-operating device supported thereon. Fig. 2 is an edge view of the tip or lower end of the rotating spindle for opening the switch. Fig. 3 is a top view of a railway-switch in its closed position. Fig. 4 is a top view of the same with the switch represented as open. Fig. 5 is a modified form of the tip or lower end of the rotating spindle for opening the switch. Fig. 6 is a sectional view on line 6 6, Fig. 5; and Fig. 7 represents a second modification of the tip or lower end of the rotating spindle for opening the switch.

Similar reference-letters refer to similar parts in the different views.

My invention relates to a device adapted to be carried upon the platform of a street-railway car to be operated by the motorman for the purpose of opening or closing the switch of a street-railway; and it consists in the construction and arrangement of parts, as hereinafter described, and pointed out in the annexed claims.

Referring to the accompanying drawings, A represents the platform of a street-car, and A′ the dashboard, behind which is supported my improved device for operating the switch, consisting of a cup-shaped bearing B, attached to the platform and forming the lower bearing for a spindle C, having a blade or tip at its lower end adapted to be entered between the fixed rail and the switch frog. Held between collars D′ D′ on the spindle C is a bar or step D, between which and the cup-shaped bearing is a spiral spring E, which normally holds the spindle C in its raised position. The upper end of the spindle C is square in cross-section, as shown at C′, and the square section C′ is inclosed in the tubular end F of a rotating spindle F′, which is journaled in a bearing G, supported upon a bracket G′, attached to the dashboard A′. The spindle F carries at its upper end a hand-wheel H, by which the spindle C and tip C′ are rotated. As the car moves along, the tip C′ is carried a short distance above the upper surface or tread of the rail I, the position of the tip C′ being indicated in Fig. 3 by the sectional view J, while the arrow J′ denotes the direction of its movement toward the switch. When the tip C′ approaches the position J^2, Fig. 3, it is pushed between the fixed rail I and the frog K by the application of the foot to the step D. When the tip C′ has been forced between the rail, it is rotated either by the movement of the foot or step D or by means of the hand-wheel H, when the tip assumes the position shown at J^3, Fig. 4, causing the switch-frog K to be separated from the fixed rail and crowded against the spring L. When the car-wheel enters the space between the fixed rail I and the frog K, the spindle C is allowed to rise, actuated by the spiral spring E.

In Fig. 5 I have shown the lower end of the spindle C as cranked by being bent at right angles at M M′, so as to bring the tip C^2 out of alinement with the spindle C. By bending the spindle C in the form of a crank I am able not only to separate the frog from the fixed rail, but also, in the absence of the spring L, I am enabled to carry the tip C′ outside the frog and move it toward the fixed rail by the rotation of the spindle C.

In Fig. 7 I have shown still another modification of the tip, in which the rod C is provided with a tip C^3, having sides C^4 adapted to enter next the fixed rail straight, while the opposite side C^5 is beveled and adapted to press against the frog and by a downward movement of the spindle C act as a wedge to force the frog away from the fixed rail.

I have shown the several modifications C, C′, and C^3 of the frog-actuating tip to show that my improved device is not confined to any particular form of tip, my invention consisting, broadly, in the employment of a spindle carried by the platform of a car and capable of a vertical depression to cause its lower end to be entered between the fixed rail and

the pivoted switch-frog for the purpose of opening the switch.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a railway-car, of a fixed bracket G′, a spindle journaled in said bracket and held from longitudinal movement and having a tubular end provided with a square hole F, a spindle C with its upper end squared and entering said tubular spindle, a cup-shaped bearing for said spindle C, a spiral spring for holding said spindle C in its highest position, and a wedge-shaped tip on said spindle, substantially as described.

2. The combination with a railway-car, of a rotating spindle capable of a downward longitudinal movement, a spring for holding said spindle in its highest position, said spindle provided with a wedge-shaped end for entering the space between a fixed rail and a switch-frog, and means for rotating said spindle after said pointed end has entered said space.

3. The combination with a railway-car, of a fixed bracket, a spindle journaled in said bracket and held from longitudinal movement, said spindle provided with a tubular end, a second spindle entering said tubular end, a spring for holding said second spindle in its highest position, a wedge-shaped tip on said second spindle for entering the space between a fixed rail and a switch-frog, and means for rotating said second spindle after said wedge-shaped tip has entered said space.

Dated this 21st day of May, 1902.

ELBRIDGE G. HOWE

Witnesses:
RUFUS B. FOWLER,
M. M. SCHNERMANN.