

(No Model.)

R. C. HOPSON.
ELECTRIC TROLLEY SWITCH AND TRIP.

No. 442,623.

Patented Dec. 16, 1890.

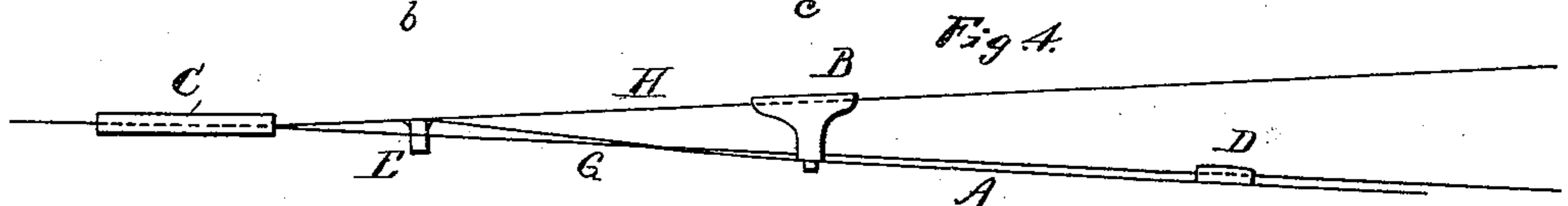
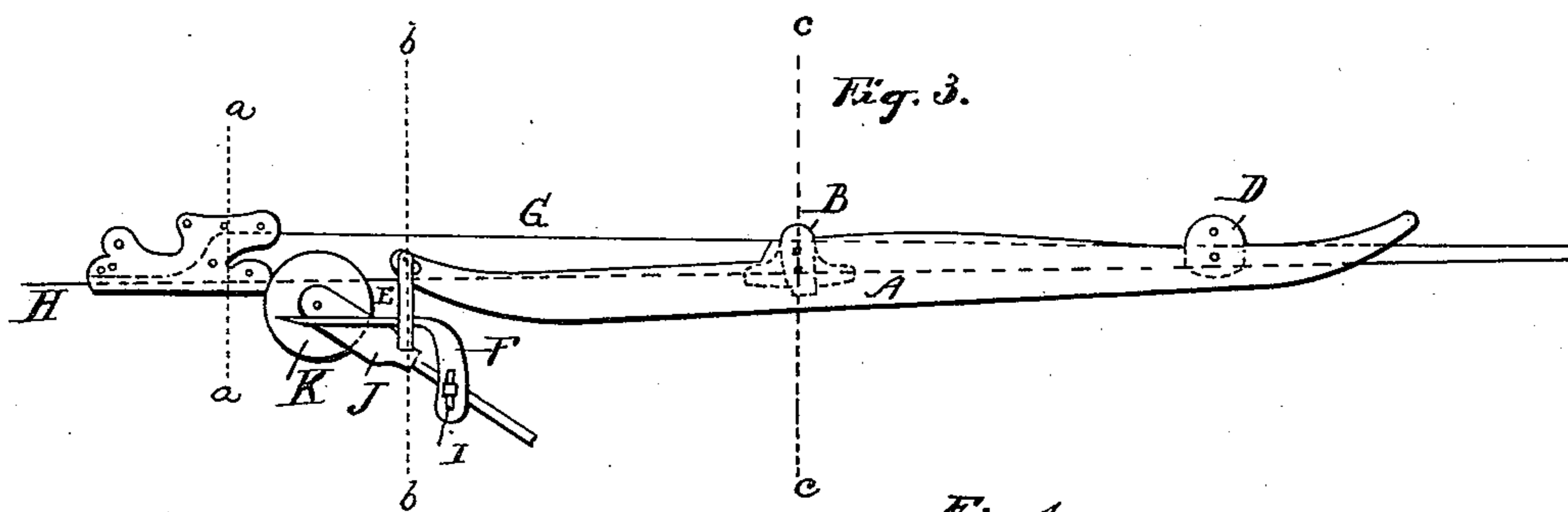
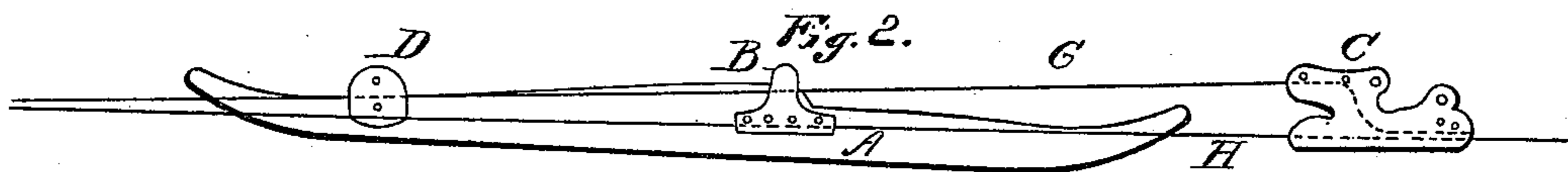
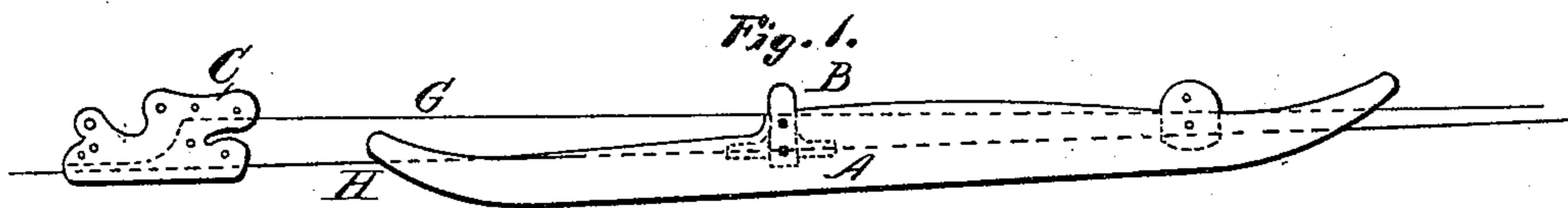
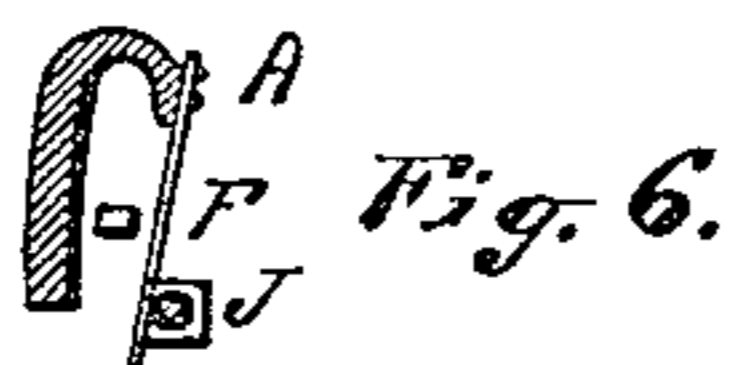


Fig. 5.



WITNESSES

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RICHARD C. HOPSON, OF SAGINAW, MICHIGAN.

ELECTRIC TROLLEY SWITCH AND TRIP.

SPECIFICATION forming part of Letters Patent No. 442,623, dated December 16, 1890.

Application filed May 5, 1890. Serial No. 350,722. (No model.)

To all whom it may concern:

Be it known that I, RICHARD C. HOPSON, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Electric Trolley Switches and Trips; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an electric trolley-switch; and its object is to provide a simple, safe, and inexpensive switch and junction-trip. This I accomplish with the following mechanism, viz:

Figure 1 is a side view of a right-hand switch. Fig. 2 is the reverse of Fig. 1. Fig. 3 is a side view of switch with junction-trip attached. Fig. 4 is a top view of switch. Fig. 5 is sectional view of clamp C; Fig. 6, a sectional front view of trip E F. Fig. 7 is a sectional front view of connection B.

A is the switch-plate, which I make three and one-half feet long, three inches wide at connection B, and at each end about one and one-half inch. The plate is one-twelfth of an inch thick. Of course any other size may be used. The lower edge of the plate A is convex, and the ends bow up, so that when the plate is fastened to the wires at B the ends will pass above the wires G and H and the body bow below.

G and H are electric trolley-wires. They are clamped together by the clamp C.

C' and C² are holes in clamp C for guy-wires G. The switch-wire is raised above main wire H about two inches at point of entering clamp C and is directly over it.

B is the connection-securing blade A to switch-wire G, and bowing over is clamped to wire H, as shown in Fig. 7. The plate A is also secured to switch-wire G at D.

K is the trolley-wheel, and J is the trolley-pole, both of the usual pattern. The switch-plate A, being of steel and very thin, is quite flexible at its loose end L. The connection B holds the loose end L of switch-plate A against wire H. As the trolley runs along the

wire H, being the main electric wire, in the direction indicated by the arrow in Fig. 1, it easily pushes the switch-plate A away from wire and passes through. On its return, upon striking the end L of switch-plate A it is switched off onto switch-plate A and runs along the length of switch-plate A, and as the trolley reaches end of switch-plate A it passes off onto wire G, thus switching the trolley from H to G in a very simple and sure manner. It is obvious that by changing the switch-plate to the other wire a left-handed switch would be made.

E is a hanger firmly secured to top of end of switch-plate A at L, extending downward, but far enough away from plate A to admit of free passage of trolley-wheel K.

F is the trip secured to trolley-pole through slot I, adapted to be raised or lowered, as desired. The trip F extends upward to and inside of E, then turns at right angles toward and across trolley-wheel K. From the point of its striking the projection E the trip widens toward the trolley K, so that as the trolley K passes along the wire toward the switch-plate A it strikes the projection E, and the switch-plate is pulled away from the wire H, and the trolley passes freely on main line.

One special feature of my invention is the mechanism by which one wire is placed above the other, so that the trolley-wheel when coming in contact with the switch-plate is not thrown down to any extent, as is usual, and often throwing it from the wire entirely. I make the connection and clamps of brass, so that the current is not interrupted.

I do not wish to be understood as confining myself to any special form or construction of plate or connection, and therefore any change may be made as comes within ordinary mechanical skill without departing from the principle of my invention.

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

1. As a new article of manufacture, an electric trolley-switch and junction-trip consisting of main wire and switch-wire clamped together at terminal of switch, the switch-wire over and a few inches above main wire, and a concave switch-plate extending from the junction of the wires, with one end pressed against

- the main wire, the other end secured to the switch-wire, the two wires being stayed by a brace at middle of switch-plate, the switch-plate thus serving to divert the trolley upon the switch-wire, and the said switch-plate having at its point of junction with the main wire a hanger extending below the switch-plate and far enough from it to admit of the passage of the trolley-wheel, and being long enough to engage a "trip" that may be upon the trolley, whereby the switch-plate is pulled away from the main wire and the trolley allowed to pass the switch-plate without being diverted onto the switch-wire, substantially as set forth.
2. A switch for electric conductors, consisting of a main wire H and a switch-wire G, and the clamp C, secured to the main wire H, holding the switch-wire G above the main wire H and engaging it to the main wire H within the clamp C, and the concave switch-plate A, having one end secured to switch-wire G at D and the other end pressing against main wire H at or near clamp C, the two wires and switch-plate being held rigidly in position by brace B, so that the concave edge of switch-plate A is below wires G and H, operating to divert the trolley-wheel off of the main wire H onto the switch-wire G, substantially as set forth.
3. In an electric trolley-switch, the combination of the main wire and switch-wire clamped together at terminal of switch, with the switch-wire over and a few inches above the main wire, with a concave switch-plate with one end pressed against the main wire near the clamp and the other end secured to the switch-wire, the wires and switch-plate being held rigidly in position by a brace connecting them in middle of switch-plate, whereby the trolley-wheel is diverted from main wire to switch-wire, substantially as set forth.
4. In an electric trolley-switch, the combination of the main wire H and switch-wire G, and the clamp C, secured to main wire H and holding the switch-wire G a few inches above main wire H and engaging it to main wire H within clamp C, with the concave switch-plate

A, having one end held against main wire H near clamp C and other end secured to switch-wire G, and the brace B, holding the switch-plate A and wires H and G rigidly in position.

5. In an electric trolley-switch, the combination of main wire and switch-wire and clamp holding switch-wire to main wire at terminal of switch, and concave switch-plate having one end secured to switch-wire and the other end held against main wire and being stayed by a brace at middle of switch-plate and holding both wires rigidly, with a hanger secured to the loose end of switch-plate so as to admit of the free passage of trolley-wheel, and extending downward far enough to engage the trip on the trolley-pole, and the trip secured to the trolley-pole and adapted to engage the hanger on the inside and push the hanger with the switch-plate away from the main wire, and thus allow the trolley to pass without being diverted onto the switch-wire, substantially as described.

6. In an electric trolley-switch, the combination of the main wire H and switch-wire G and clamp C, holding switch-wire G above and engaging it to main wire H within the clamp C, and the switch-plate A, having one end loosely held against main wire H near clamp C and the other end secured to switch-wire G and supported by brace B, rigidly holding main wire H and switch-wire G and switch-plate A in position, and hanger E, secured to loose end of switch-plate A and extending downward far enough to engage trip F, with trip F secured to trolley-pole J by means of slot I, adapted to be raised and lowered as desired, substantially as described, and for purposes set forth.

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

RICHARD C. HOPSON.

Witnesses:

J. T. PHILLIPS,

JENNIE E. SACKRIDER.