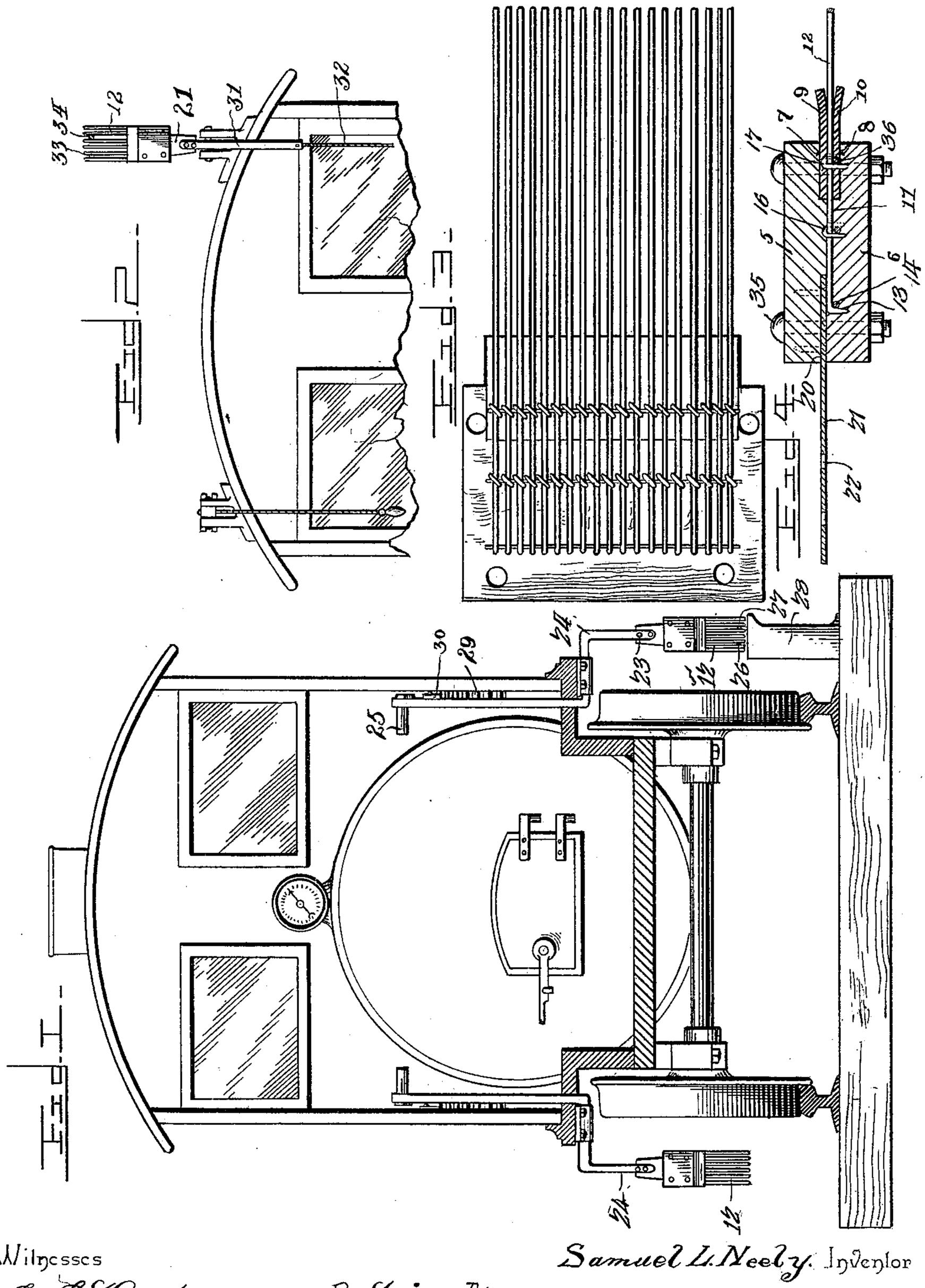
No. 653,585. Patented July 10, 1900.

S. L. NEELY.

CONTACT BRUSH.

(Application filed Oct. 23, 1899.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

SAMUEL L. NEELY, OF PIERRON, ILLINOIS, ASSIGNOR OF ONE-HALF TO HENRY F. KNEBEL, OF SAME PLACE.

CONTACT-BRUSH.

SPECIFICATION forming part of Letters Patent No. 653,585, dated July 10, 1900.

Application filed October 23, 1899. Serial No. 734,519. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL L. NEELY, a citizen of the United States, residing at Pierron, in the county of Bond and State of Illinois, have invented a new and useful Contact-Brush, of which the following is a specification.

This invention relates to contact-brushes in general, and more particularly to that class employed in connection with moving vehicles, and especially upon railway-trains, when it is desired to close an external circuit comprising conductor-wires strung along the track, the object of the invention being to provide a cheap and simple contact-brush which may be employed for closing the circuit between the two conductors with which it engages and in which no leakage of current will occur.

In the drawings forming a portion of this specification, and in which similar numerals of reference designate like and corresponding parts in the several views, Figure 1 is a view partially in section and partially in elevation and showing a locomotive-cab equipped with contact-brushes constructed in accordance with the present invention, the brushes being adapted to engage wires suitably supported adjacent to the track-rails. Fig. 2 shows a portion of the top of a locomotive-cab and illustrates the location of brushes thereon when contact is to be made with wires supported upon poles at a considerable elevation. Fig. 3 is a detail elevation showing one of the rubber insulating-plates with the brush-bristles attached thereto, said insulating-plate being mounted upon one of the side pieces of the head of the brush. Fig. 4 is a longitudinal section of the brush, showing the bristles shortened and illustrating the method of securing the bristles in place.

Referring now to the drawings, and more particularly to Figs. 3 and 4, the brush comprises a head consisting of two similar parts 5 and 6, having their adjacent faces recessed. In the recesses 7 and 8 of the inner faces of the parts 5 and 6, at the forward ends of said parts, are placed sheets of rubber 9 and 10, which extend outwardly and beyond the head, as shown. The portion 6 of the head is recessed rearwardly of the rubber plate 10, but to a less depth than the recess 8, and in this last-named recess 11 are disposed a plurality of parallel conducting-wires 12, the rear ends of which are bent laterally at right angles and forced into corresponding perforations in the element 6 of the head. Beneath the wires 12 and transversely thereof in the rear of the plate 10 are arranged cross-wires 14 and 15, upon which the wires 12 rest and through the medium of which they are electrically connected, the wires 12 being further secured in place by means of staples 16 and 17, which are arranged to straddle the wires 12 and to pass into the element 6 of the head. The staples 16 straddle also the wire 15, while the staples 17 pass through the rubber plate 10.

The element 5 of the head has a recess 19, which corresponds to the recess 8, and in this recess 19 the rubber plate 9 is placed, so that it will lie upon the opposite side of the wires 12 from the plate 10. A further recess 20 is formed in the inner face of the element 5 and at the rear end thereof, and in this recess 20 is disposed a spring-plate 21, having perforations 22 to receive the attaching-bolts 23 of a hanger 24. In Fig. 1 of the drawings this hanger 24 is formed by one end of a bell-crank lever which is pivotally mounted in the frame of the cab of the locomotive and has an operating-handle 25, through the medium of which the lever may be operated to lower the brush and engage the wires 12 thereof with conductor-wires 26 and 27, which are supported upon suitable insulators 28, arranged at one side of the trackway. The bell-crank lever may be held in this position by means of a notched segment 29, adapted for engagement by a pawl 30, carried by the bell-crank lever.

In Fig. 2 of the drawings the plate 21 is connected directly with one end of a lever 31, having a cord 32 attached to its opposite end and by means of which the lever may be operated to erect the brush and engage the wires 12 thereof with conductor-wires 33 and 34, suitably supported above the cab of the locomotive. It will be of course understood that these conductor-wires are in circuit with a suitable alarm or signal and a source of electricity and that when they are thus bridged by the brush the signal or alarm is sounded.

As shown in Fig. 4 of the drawings, the ele-

ments 5 and 6 of the head of the brush are clamped together by means of clamping-bolts 35; also, between the rubber plate 10 and the wires 12 is a third cross-wire 36, which is straddled by the staples 17.

With the foregoing construction it will be seen that the brush may be engaged and disengaged with the contact-wires when the train may be standing still or when for any other reason it may be desired to break the contact. The result will be a saving in battery, and other advantages will be evident.

What is claimed is—

1. A contact-brush comprising a head including two elements, a plurality of wires clamped between the elements, connections between the wires, and elastic plates lying between the elements and the wires.

2. A contact-brush comprising two elements having recesses in their inner faces, rubber plates disposed in the recesses, wires disposed between the plates, and electrical connections between the wires.

3. A contact-brush comprising a head including two elements having recessed inner faces, a plurality of wires disposed in the recess of one element and having their inner ends engaged with said elements, cross-wires disposed between the first-named wires and the element in the recess of which they lie, rubber plates lying at opposite sides of the first-named wires and in recesses in the elements, and an elastic plate clamped between the elements.

4. A contact-brush comprising a head including two elements, a plurality of wires having their rear ends engaged with one of the elements, cross-wires lying between the first-named wires and the elements with which they are engaged, and staples straddling the first-named wires and the cross-wires.

5. A contact-brush comprising a head including two elements having recessed inner faces, a plurality of wires disposed in the recesses of one element and having their inner ends engaged with said element, cross-wires disposed between the first-named wires and the element, in the recesses of which they lie, and means for holding the elements together.

6. A contact-brush comprising a head including two elements having recessed inner faces, a plurality of wires disposed in the recesses of one element and having their inner ends engaged with said element, cross-wires disposed between the first-named wires and the element in the recesses of which they lie, means for holding the elements together, and an elastic plate clamped between the elements.

7. A contact-brush comprising a head including two elements, a plurality of wires disposed between the elements, cross-wires in electrical contact with the first-named wires, and securing means passed over the cross-wires and the adjacent first-named wires and engaged with the elements of the head.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SAMUEL L. NEELY.

Witnesses:
LOUIS J. WICK,
LOUIS KANUPF.