

(No Model.)

C. B. SCHOENMEHL.
ELECTRIC BATTERY.

No. 467,240.

Patented Jan. 19, 1892.

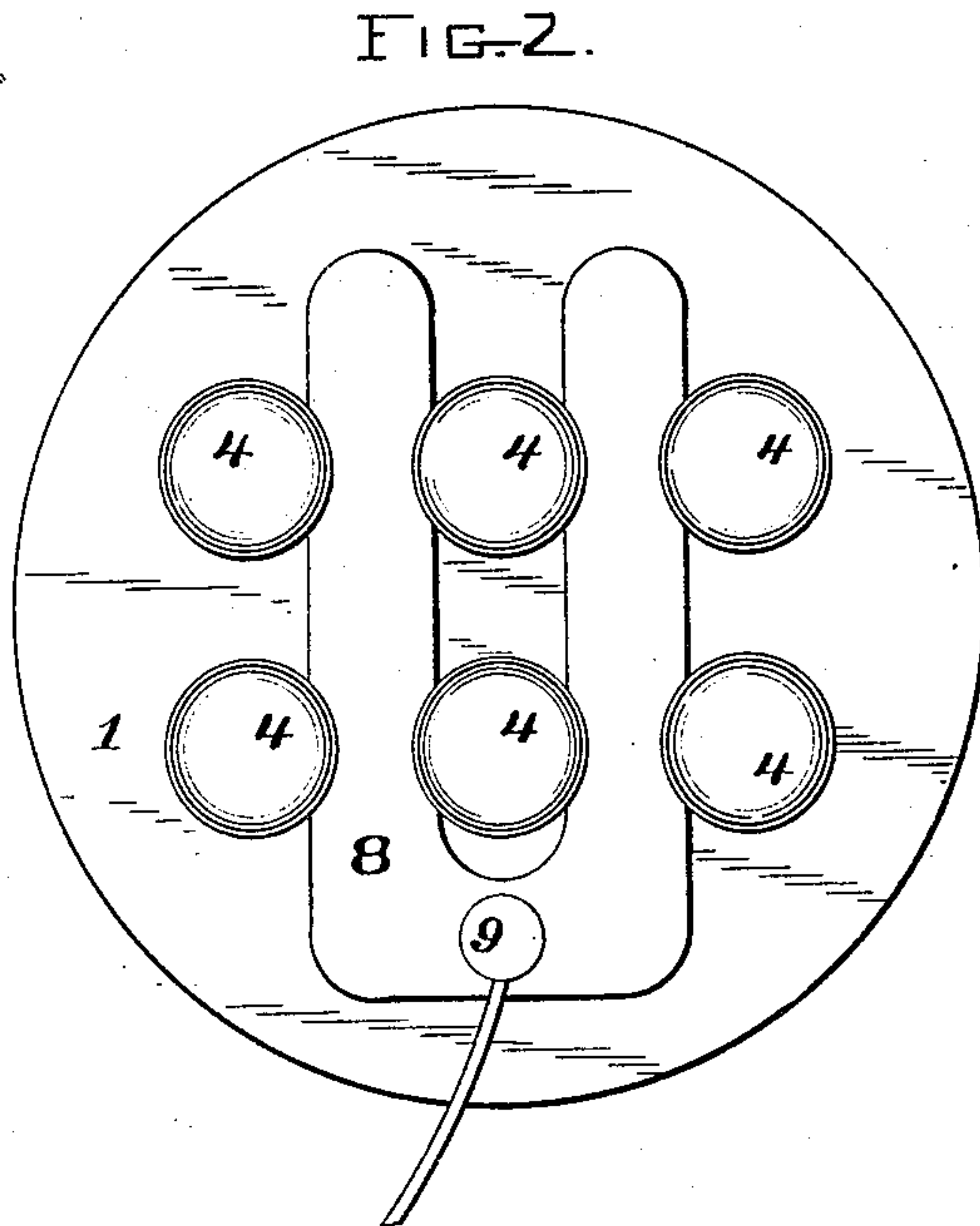
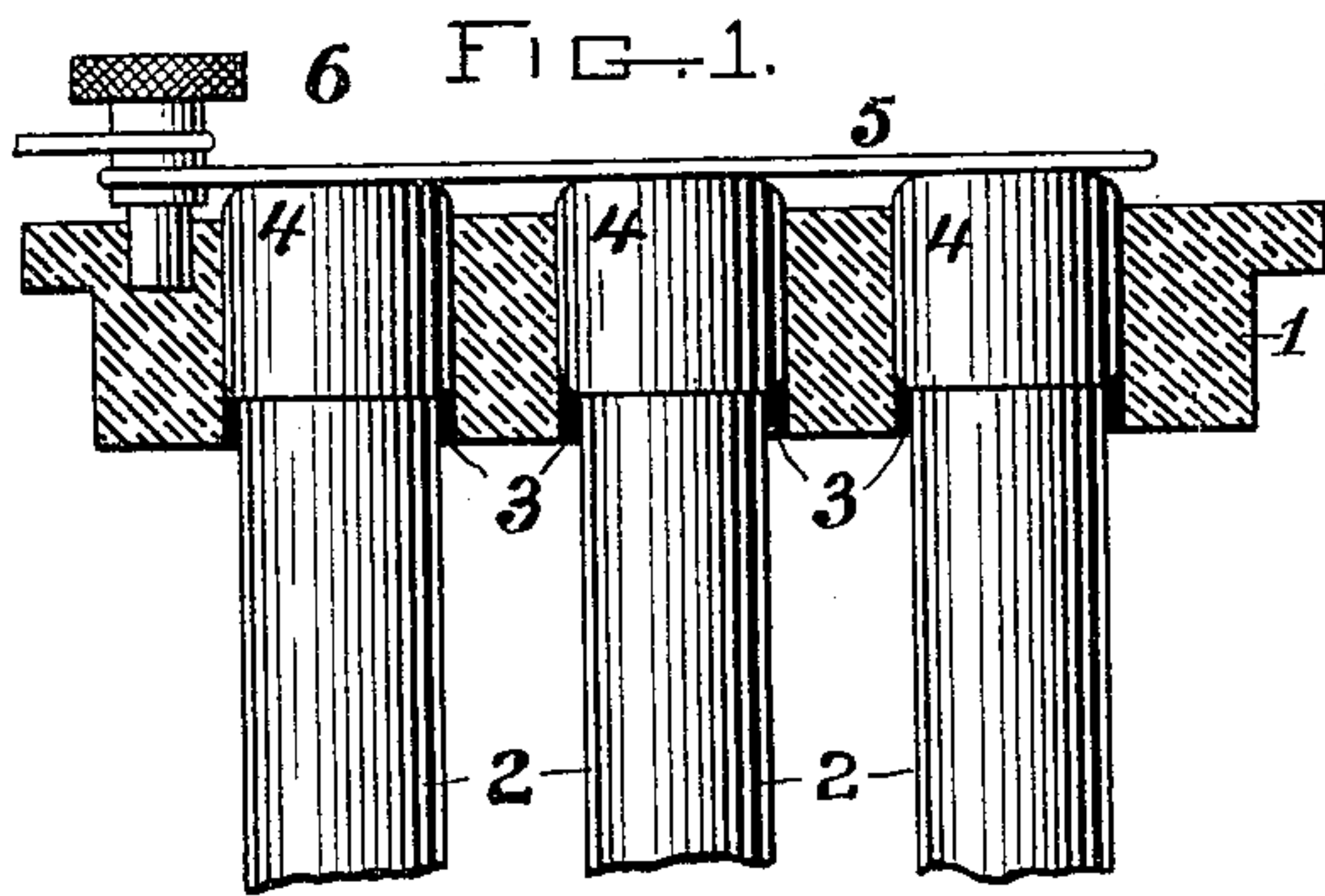


FIG. 3.

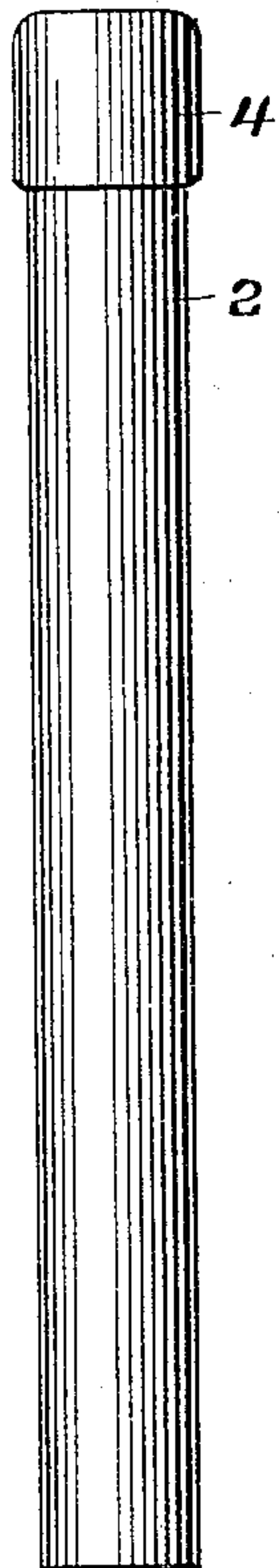


FIG. 4.

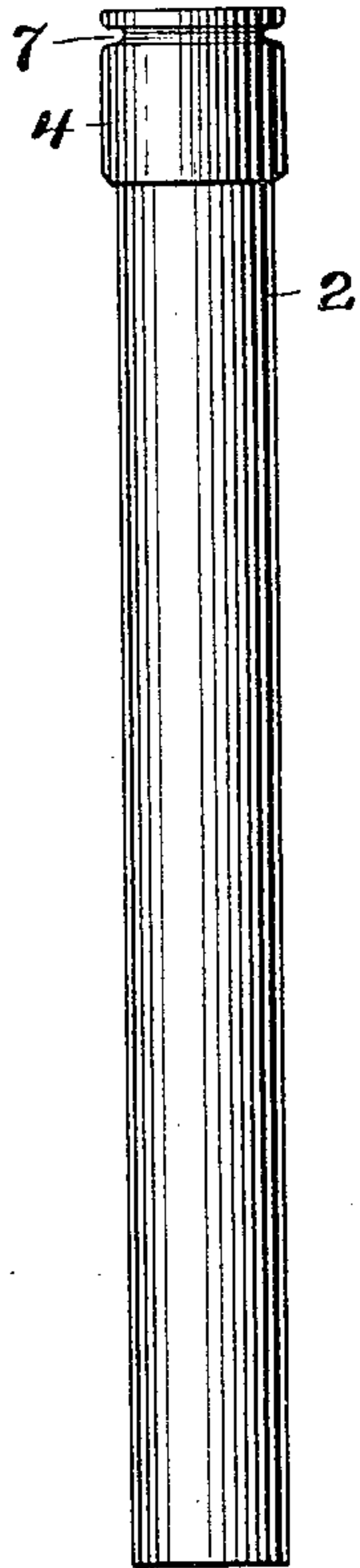


FIG. 5.

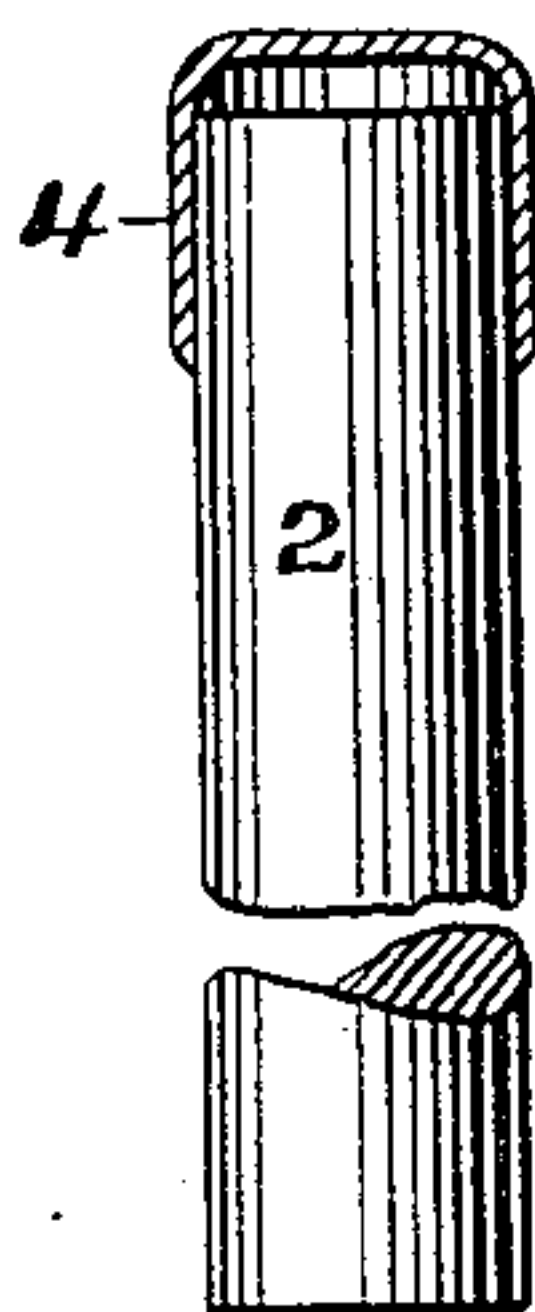


FIG. 6.

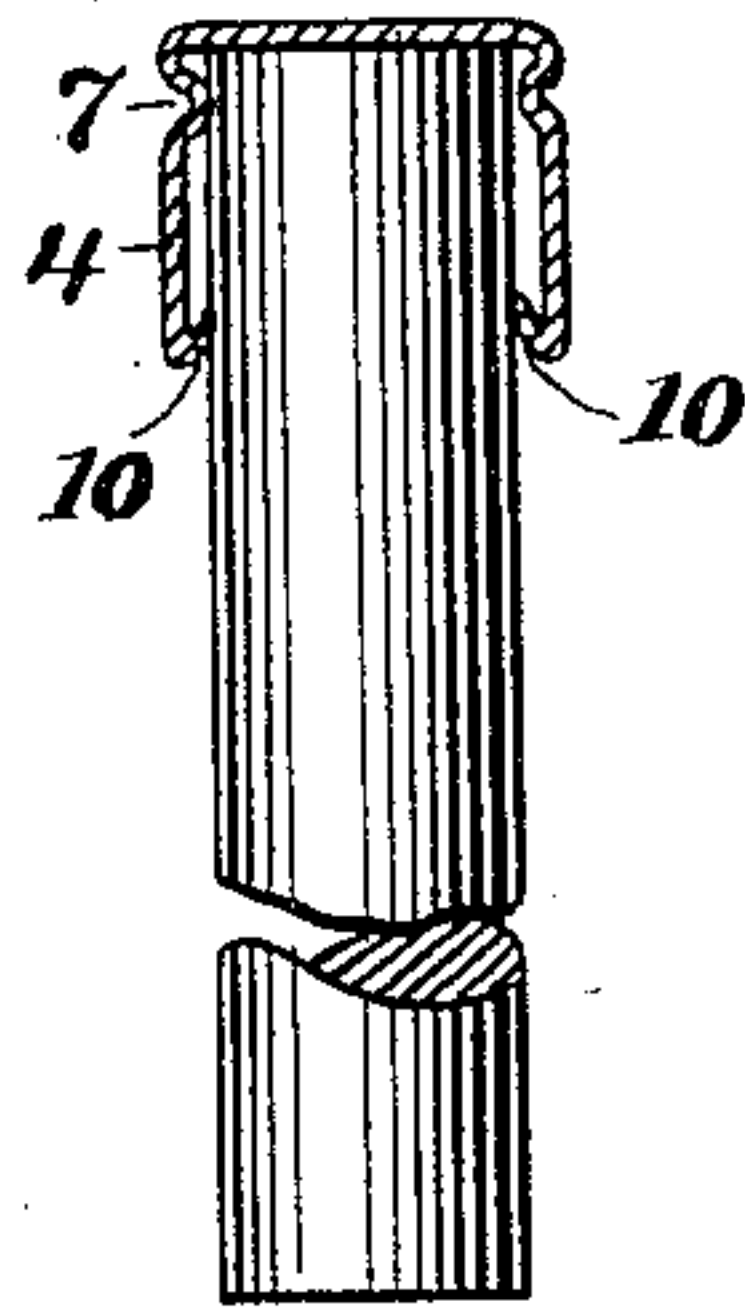
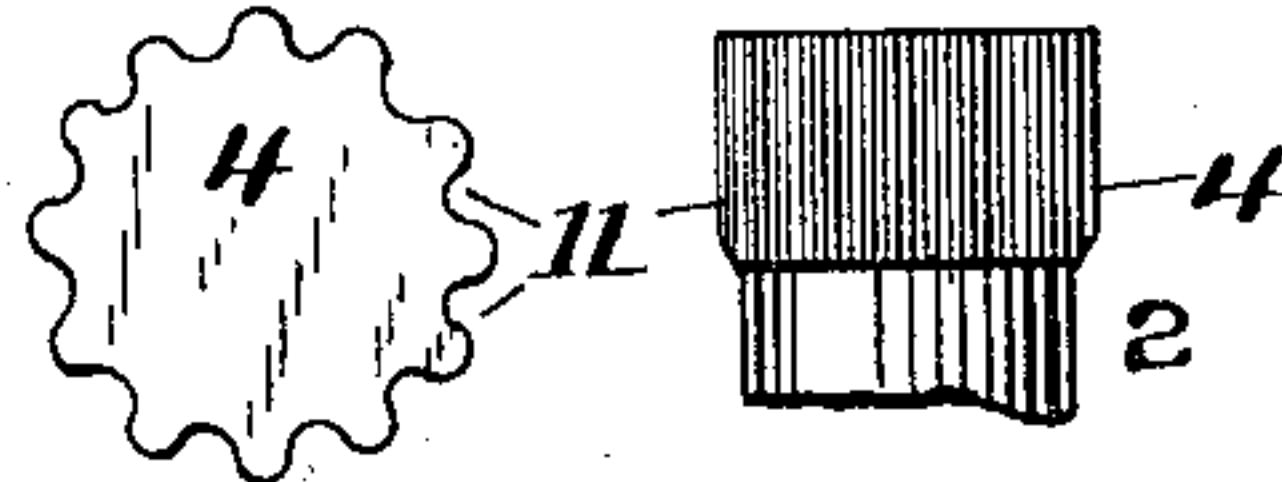


FIG. 7.



WITNESSES:

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ELECTRIC BATTERY.

SPECIFICATION forming part of Letters Patent No. 467,240, dated January 19, 1892.

Application filed April 25, 1891. Serial No. 390,398. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. SCHOENMEHL, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Electric Batteries; and I do hereby 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.

This invention relates to certain novel and useful improvements in electric batteries, but more particularly does it appertain to such batteries as are provided with a carbon element consisting of a plurality of sticks or pencils of carbon; and it is the object of my invention to furnish means which shall be simple and efficient for attaching and securing the carbons to the battery-top and at the same time establishing electrical connection between them; and with these ends in view my invention consists in the construction and combination of elements hereinafter set forth, and then recited in the claims.

In order that those skilled in the art to which my invention appertains may fully understand its construction and method of operation, I will describe the same in detail, reference being had to the accompanying drawings and the numerals marked thereon, which form a part of this specification.

Figure 1 is a vertical section showing several carbon pencils or rods secured in accordance with my invention; Fig. 2, a plan view showing a modified method of attachment; Fig. 3, an elevation of the pencil shown at Fig. 1; Fig. 4, a similar view of the pencil shown at Fig. 2; Fig. 5, a section of the cap of the pencil shown at Fig. 1; Fig. 6, a similar section showing a modification of the cap; Fig. 7, a side elevation and plan view of another.

1 denotes a battery-top, to which the elements are adapted to be attached. It is preferably of porcelain or glass, though I do not restrict myself in the matter of material. The zinc element may be attached in any manner found convenient; but as this forms no part of my present invention I have not shown it in the drawings.

2 are sticks or rods of carbon of suitable

length and size. These are to be inserted and held in holes 3 in the battery-top. It is, however, difficult to insert these sticks so that their attachment to the top shall be firm, since their ends vary somewhat in size and the carbon is hard and brittle. Furthermore, when it is attempted to hold them by insertion in holes in the top the problem of establishing electrical connection between them is presented. I therefore cap each carbon stick or rod with a drawn shell of thin sheet metal, which in its simplest form is designated by the numeral 4 at Figs. 1, 3, and 5. This shell may be fitted to the carbon by driving the latter into it or by crimping the lower edge of the shell inward against the surface of the carbon. When thus capped, the end of the carbon is so protected that it may be forced or driven into one of the close-fitting holes 3 without danger of chipping or crumbling the carbon. This is shown as effected at Fig. 1, and the electrical connection is established by means of a wire 5, soldered to the tops of the several carbons and connecting them with a binding-post 6 on the battery-top.

In Fig. 4 I show a cap or shell differing from the one heretofore described in that it is provided near its top with a groove 7 knurled into the metal. In connection with the carbon thus capped I prefer to utilize a method of attachment which is shown at Fig. 2, and which is at once simple and sufficient both to hold the carbons firmly in position and to connect them electrically. This means consists of a flat sheet-metal key 8 of such size and thickness as to slide between the carbons and engage with the grooves 7 in the metal caps. It is obvious that in this construction carbons may be removed and new ones substituted by backing the key out of engagement with the grooves.

In Fig. 6 I have shown a form of shell which is somewhat larger in diameter than the carbon rod and is not only provided with the groove 7, but with inwardly-turned points 10. In this construction the cap holds against the carbon by the inner surface of the metal, where the groove 7 is made, and the inner ends of the points 10. The object of this construction, in which the cap should be of very thin metal, is to give to said cap a slight compres-

sibility, so that it may be forced into a hole and there held by its expansive action as well as by the grasp of the key, if the latter be used. In Fig. 7 I have shown another method of effecting this by drawing the shell with corrugations 11 upon its outer surface.

I claim—

1. In a battery, the combination, with the top provided with holes and constructed of non-conducting material, of the carbon rods, a drawn sheet-metal cap or shell fitted and secured upon the top of each rod, and a connection above the battery-top whereby the rods are secured together mechanically and electrical connection established between them.

2. The combination, with the carbon pencil or rod, of a sheet-metal cap closely fitted upon

said rod and provided with an annular groove, substantially as described.

3. The combination, with the top constructed of non-conducting material and provided with openings, as described, of the carbon rods each provided with a drawn sheet-metal cap having therein a groove, and a conductive key, substantially as described, engaging said grooves and adapted to hold the carbons as against withdrawal and to connect them electrically, substantially as specified.

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

CHARLES B. SCHOENMEHL.

Witnesses:

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