(No Model.)

R. E. WILLIAMS.

ELECTRIC BRUSH.

No. 479,321. Patented July 19, 1892.

Fig. 1.

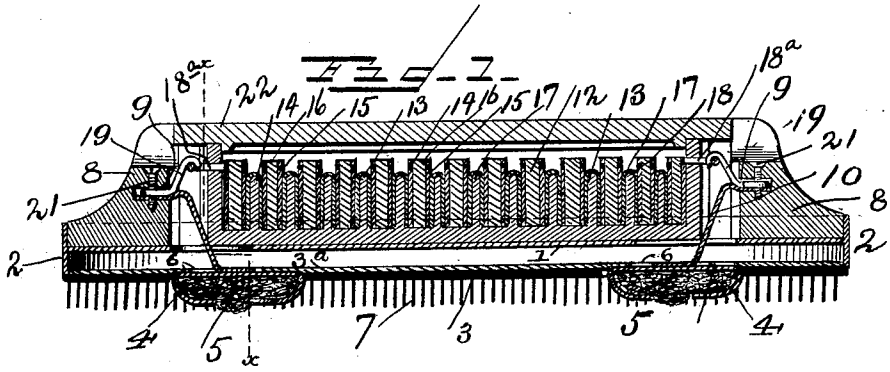


Fig. 2.

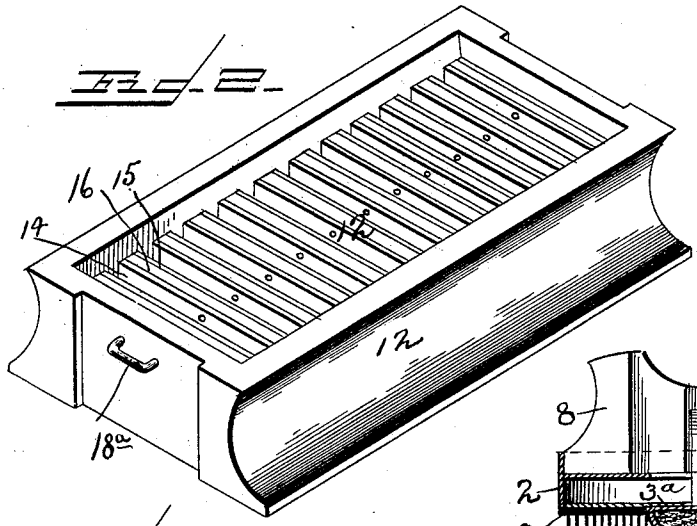


Fig. 6.

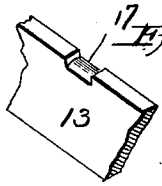


Fig. 3.

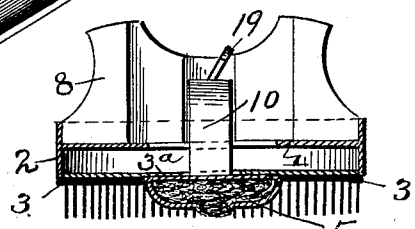


Fig. 4.

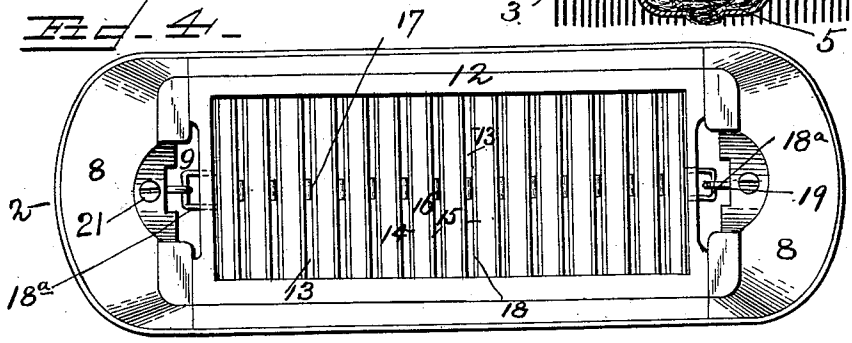
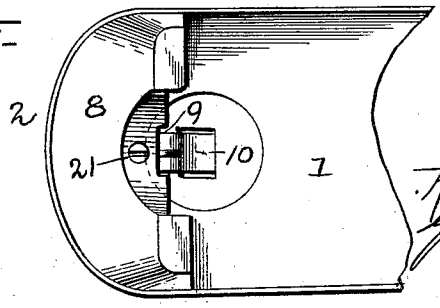


Fig. 5.



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UNITED STATES PATENT OFFICE.

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ELECTRIC BRUSH.

SPECIFICATION forming part of Letters Patent No. 479,321, dated July 19, 1892.

Application filed January 2, 1892. Serial No. 416,876. (No model.)

To all whom it may concern:

Be it known that I, ROBERT E. WILLIAMS, a citizen of the United States, and a resident of Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Electric Brushes; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in electric brushes, and is more particularly adapted for use as a body or flesh brush.

The object of the invention is to provide an improved construction of brush of the above character in which the battery may be readily removed and used for other purposes, when desired, and replaced without difficulty. It is also the object of the invention to improve said brushes in general, whereby I attain superior advantages with respect to simplicity and economy in construction and efficiency in operation.

The invention consists in the novel construction and combination of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a brush constructed in accordance with my invention. Fig. 2 is a perspective view of the battery detached. Fig. 3 is a cross-section on the line *x x*, Fig. 1, the battery and electrodes being removed. Fig. 4 is a plan view of the brush, the battery-cover being removed. Fig. 5 is a similar view, the battery being removed. Fig. 6 is a detail view of a portion of one of the battery partitions.

In the said drawings the reference-numeral 1 designates a metallic plate having rounded ends and provided with an upwardly and downwardly projecting rim 2. Resting against the under or outer side of this plate is a correspondingly-shaped plate 3 of some non-conducting material—such as hard rubber—provided near each end with recesses 4 to receive the electrodes 5 and with apertures 6, the plate 1 being also provided with registering apertures. To the plate 3 are secured the rubbers or bristles 7. In the present instance the plate 3 is shown as being provided with a stiffening plate or backing 3^a of metal or other suitable material. At each end of plate 1 upon the upper side is an upwardly-projecting plate or block 8. These plates or blocks are provided on their inner faces with recesses 9, in which are located conducting-strips 10, connected with the electrodes and secured to the blocks. These blocks are made of hard rubber or other non-conducting material.

The numeral 12 denotes a galvanic battery, consisting of a rectangular-shaped trough of non-conducting material provided with a series of transverse partitions 13, which divide the same into a number of cells to receive the copper and zinc plates 14 and 15, and the interposed absorbent material 16. Each of the partitions 13 at its upper edge at or near the center is provided with a notch 17 to receive a bent conducting-strip of metal 18, which contacts, respectively, with the copper plate of one cell and the zinc plate of the next adjoining cell. At each end the trough is provided with a looped wire 18^a, the ends of which pass through said ends and connect with the positive and negative poles, respectively, of the battery elements. These wires also contact with conductors 19, electrically connected with the conducting-strips 10, said conductors consisting of a rod or wire bent inwardly at right angles at their upper ends, so as to engage with said loops and hold the battery in place. At their other ends they are pivoted to screws 21 in the blocks 8, so that they can be moved into and out of engagement with the loops, so as to make and break the circuit and hold and release the battery. The trough is provided with a cover 22. The battery elements 14 and 15 near their upper edges are provided with holes or apertures to receive a hook, by which they may be readily withdrawn from the cells.

In practice the battery is placed upon plate 1 and secured thereto by means of the loops 18 and the bent conductors 19. An exciting

liquid is then placed in the cells, and when the brush is applied to the body an electric current will be established, as is well known to those skilled in the art to which the invention pertains. When it is desired to remove the battery for use for other purposes, the conducting wires or rods 19 are turned upon their pivots, so as to become disengaged from the loops 18^a, when the battery can be readily detached.

To remove the battery-plates for the purpose of cleaning or otherwise, an ordinary button-hook can be inserted in the holes therein, by which they may be withdrawn from the cells.

Having thus described my invention, what I claim is—

1. In an electric brush, the combination, with the metal plate having an upwardly and downwardly extending rim, the non-conducting plate upon the under side thereof, the electrodes, the conducting-strips connected with the electrodes and secured to blocks upon the upper side of said metal plate, and the pivoted conductors electrically connected with said strips, of the battery adapted to rest upon the metal plate, having conducting-loops at each end, with which the pivoted conductors engage, substantially as and for the purpose set forth.

2. A galvanic battery for an electric brush, comprising a trough divided into a series of cells by transverse partitions having notches in their upper edges, the bent metal plates seated in said notches, the battery elements contacting with said plates, and the conductors in the ends of the trough, substantially as described.

3. A galvanic battery for electric brushes, comprising a series of cells and the positive and negative plates located in said cells, having holes or apertures near their upper edges, substantially as and for the purpose described.

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

ROBERT E. WILLIAMS.

Witnesses:
AUGUST PETERSON,
ARTHUR B. SEIBOLD.