

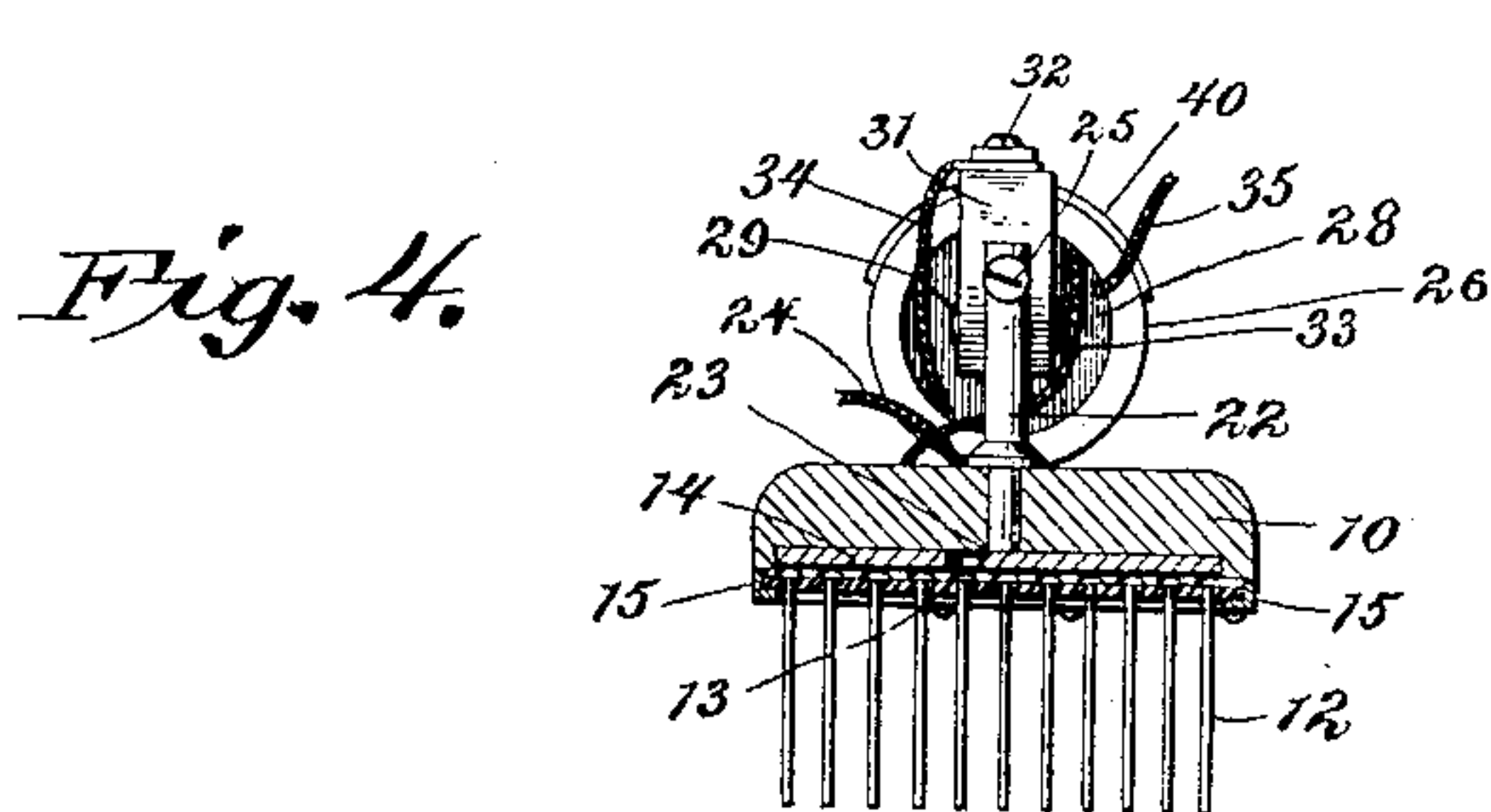
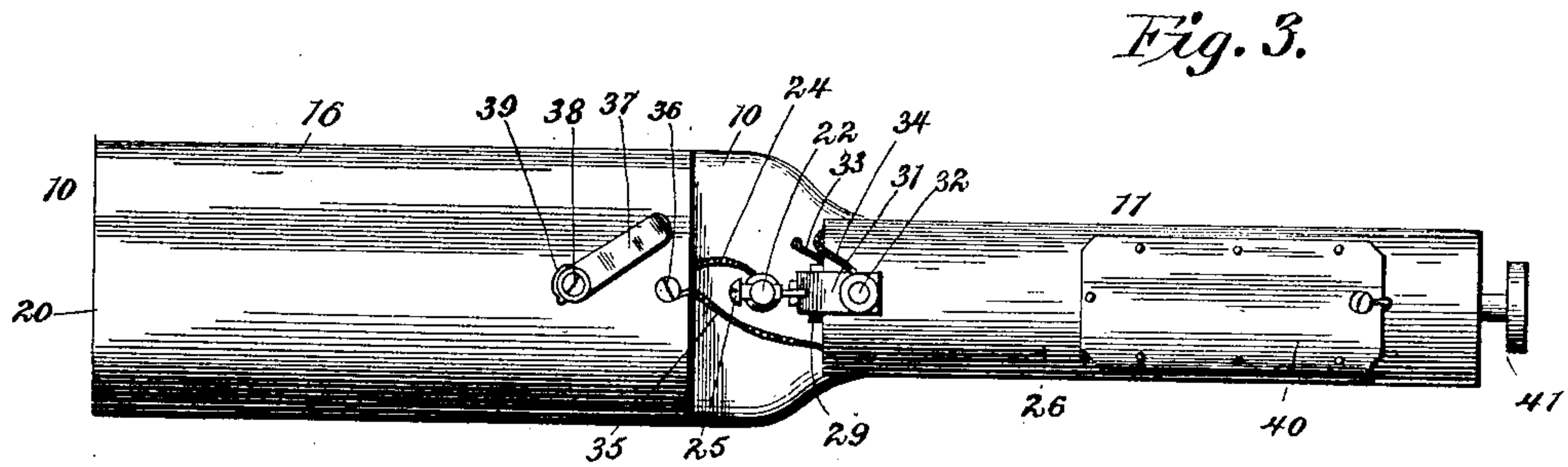
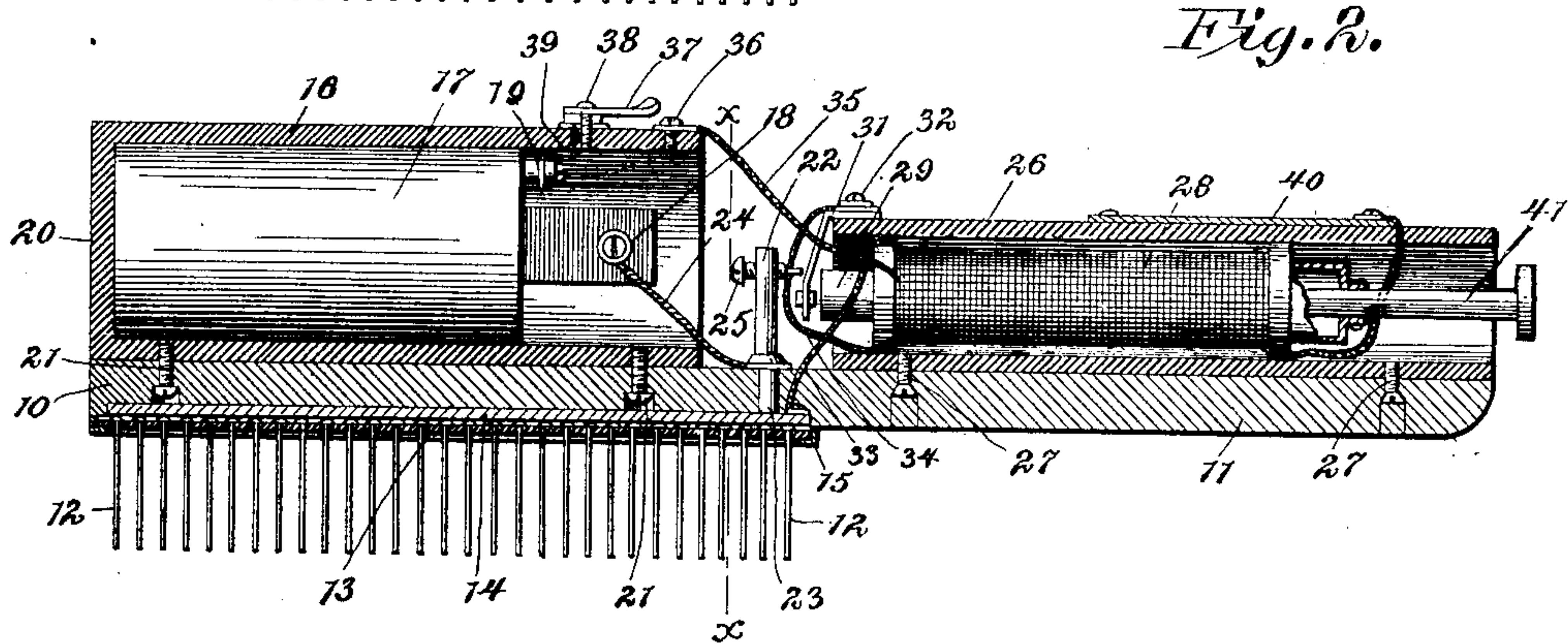
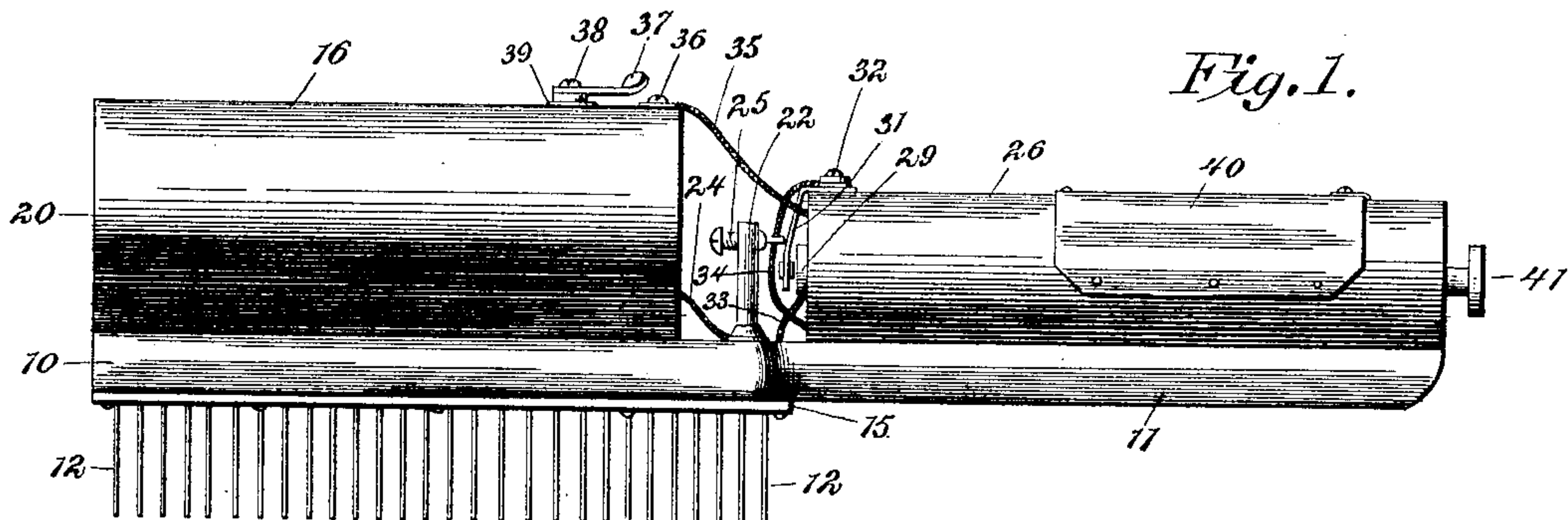
No. 640,056.

Patented Dec. 26, 1899.

W. J. WERTZ.
ELECTRIC HAIR BRUSH.

(Application filed May 10, 1899.)

(No Model.)



Witnesses
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By his Attorneys.

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UNITED STATES PATENT OFFICE.

WALTER J. WERNTZ, OF ANNAPOLIS, MARYLAND.

ELECTRIC HAIR-BRUSH.

SPECIFICATION forming part of Letters Patent No. 640,056, dated December 26, 1899.

Application filed May 10, 1899. Serial No. 716,295. (No model.)

To all whom it may concern:

Be it known that I, WALTER J. WERNTZ, a citizen of the United States, residing at Annapolis, in the county of Anne Arundel and State of Maryland, have invented a new and useful Electrical Brush, of which the following is a specification.

My invention relates to improvements in electrical brushes for therapeutical purposes; and the object in view is to provide a simple and cheap construction adapted to the employment of a dry battery to secure a compact arrangement or disposition of the battery and an induction-coil, as well as the necessary circuit connections on the brush-back, and to provide for cutting the battery out of service as may be desired.

With these ends in view the invention consists in the novel construction and arrangement of parts, which will be hereinafter fully described and claimed.

In the drawings, Figure 1 is a side elevation of an electric brush constructed in accordance with my invention. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a plan view, and Fig. 4 is a cross-section on the line *x x* of Fig. 2.

The same numerals of reference are used to indicate like and corresponding parts in each of the several figures of the drawings.

The brush-back 10 is similar to ordinary brushes and is provided with a handle 11. The bristles or pins 12 are of metal and their headed ends are confined in place by an insulating layer 13 of rubber or any other suitable material. The headed ends of the pins or bristles are confined in electrical contact with a metallic electrode 14 by means of a flanged frame 15, which embraces the insulating layer 13 and is fastened securely in place on the brush-back 10 to hold the headed ends of the metallic bristles or pins in contact with said electrode.

The dry battery is inclosed or housed within an insulating shell or jacket 16, which is arranged longitudinally on the back 10 of the brush, and said shell incloses a dry battery 17 of any approved construction. The terminals of said dry battery are represented in the form of binding-screws 18 19 for the proper connection of the circuit-conductors. This shell 16 is of hard rubber, fiber, or any

other approved insulating material, and the end of the shell or jacket contiguous to one end of the brush-back is closed by an integral head 20. The opposite end of the shell adjacent to the parts of the circuit and the induction-coil is left open for the proper battery connections, and said shell or jacket is fastened securely in place by screws 21, which are embedded in the brush-back, although any suitable fastening devices may be used.

A binding-post 22 is fixed to the brush-back at a point between the contiguous ends of the battery and the induction-coil, and the foot of this binding-post is connected electrically at 23 to the electrode 14. This binding-post is in electrical connection with the terminal 18 of the battery by a conductor 24, which extends between said post and battery and is protected by being disposed between the adjacent ends of the jackets for the dry battery and the induction-coil. The binding-post 22 is provided with a contact-screw 25, adapted to engage with a contact-spring forming a part of the make-and-break device for the circuit to secure an intermittent current, as will hereinafter appear.

The induction-coil is housed or contained within a shell or jacket 26, which is also made of hard rubber, fiber, or other insulating material, and said jacket 26 is disposed on the handle 11 substantially in alinement with the jacket for the dry battery, the jacket 26 being fastened in place to the handle by the screws 27.

The induction-coil 28 is housed or contained within the jacket 26, and it is provided with the usual core 29. A vibrating spring-contact 31 is fastened to the end of the jacket 26 adjacent to the binding-post 22 by means of a screw 32, and the free end of this contact-spring is disposed close to the pointed end of the screw 25 in the post 22 and with the extremity of said contact-spring opposite the core of the induction-coil. The coil 28 is in circuit with one terminal of the electrode 14 by a conductor 33, which extends from the coil, through one opening of the brush-back, to said electrode 14, and the contact-spring has its screw in circuit with said induction-coil by a conductor or wire 34. The conductors 33 34 are contiguous to the open inner end of the jacket 26, and they occupy such

relation to the brush that they do not interfere with the free and expeditious handling or manipulation of the implement when it is in use. The other terminal of the induction-coil has a wire 35 extended therefrom across the space between the contiguous ends of the jackets 16 26, and this wire 35 is fastened to the inner end of the jacket 16 by a screw 36, which forms a contact for the free end of a switch 37. This switch is pivoted at 38 on the jacket 16 of the battery, and from the pivot extends a short wire 39 to the other battery-terminal 19. The other electrode of the brush is indicated at 40 as mounted on the jacket 26 of the induction-coil in a position to engage with the operator's hand when the brush-handle is grasped for manipulation of the brush, and this electrode 40 is in circuit with the induction-coil by proper connection of wires from said coil to the electrode. A regulator 41 of any suitable character known to the art may be used in connection with the induction-coil to regulate the strength of the current.

When the switch is adjusted to be free from the contact formed by the screw 36, the circuit from the battery to the coil is interrupted or broken, thus reserving the energy of the battery until it is desired to use the brush. The operator may easily turn the switch to make contact with the screw 36, and thereby complete the primary circuit and energize the secondary circuit, which secondary circuit includes the induction-coil and the two electrodes 14 40, the electrode 14 serving to diffuse the current through the series of metallic pins or bristles. In using the brush the operator grasps the handle so that the electrode 40 will contact with the hand, and the application of the brush to the body or scalp will complete the circuit through the body to obtain the beneficial effects of the current of electrical energy. I attach special importance to the employment of a dry battery as a medium for supplying electrical energy to the electrodes and to the disposition of the induction-coil and battery in independent jackets or casings, which are fixed to the back and handle of the brush substantially in alinement with each other. This arrangement of the parts enables them to be compactly disposed on the brush and provides for the use of batteries and induction-coils of different sizes. The use of the battery is not limited by the fact that it is necessary to apply the induction-coil to the brush, and thus a battery of relatively large capacity may be employed in the manufacture of the device. All the circuit connections are disposed in an

exceedingly-compact and out-of-the-way manner, and the brush may thus be manipulated or used very freely and without any possibility of entanglement or displacement of the conductors.

The primary circuit is from the battery-terminal 18, the conductor 22, the screw 25, the contact-spring, the case of the induction-coil, the primary of said coil, the conductor 35, the switch, and the other battery-terminal. The current in the primary of the coil induces a current in the secondary of the coil and the secondary circuit is complete through the electrodes 14 40, the metallic bristles, and the body of the user.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what I claim is—

1. An electrical brush comprising a back, two shells or jackets arranged longitudinally of the brush substantially in alinement with each other and fastened respectively to the back and handle of the brush, a dry battery housed within one of said shells, an induction-coil within the other shell, electrodes fastened respectively to the back and the jacket containing the induction-coil, a make-and-break device, and circuit connections including the battery, the coil and the make-and-break device, substantially as described.

2. An electrical brush consisting of a back having one electrode in contact with a series of metallic pins or bristles, an induction-coil housed within a jacket which is fastened to the brush-handle and is provided with the other electrode, a dry battery contained within a jacket fastened to the brush-back, a make-and-break device including a contact-spring which is in circuit with the induction-coil and also including a post in circuit with the electrode of the brush-back, a switch-contact mounted on the jacket which incloses the battery and in electrical connection with said induction-coil, and a switch connected with one battery-terminal and mounted on the jacket which houses the battery to make electrical connection with the switch-contact, substantially as described.

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

WALTER J. WERNITZ.

Witnesses:

JOHN H. SIGGERS,
M. PERRY HAHN.