

C. ADAMS-RANDALL.  
ELECTROMECHANICAL APPARATUS FOR VIBRATORY MASSAGE.

APPLICATION FILED FEB. 9, 1904

2 SHEETS—SHEET 1.

Fig. 2.

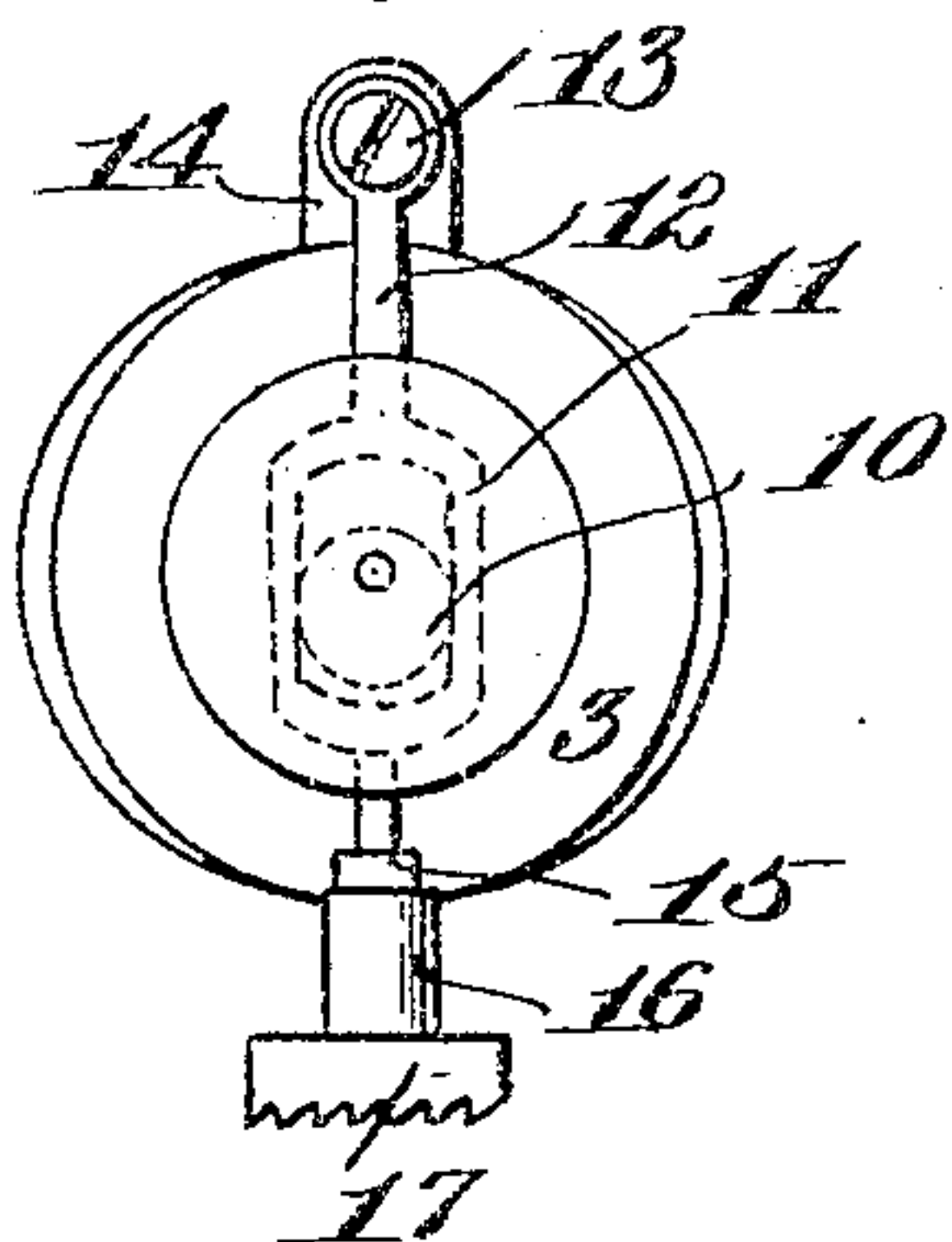


Fig. 3.

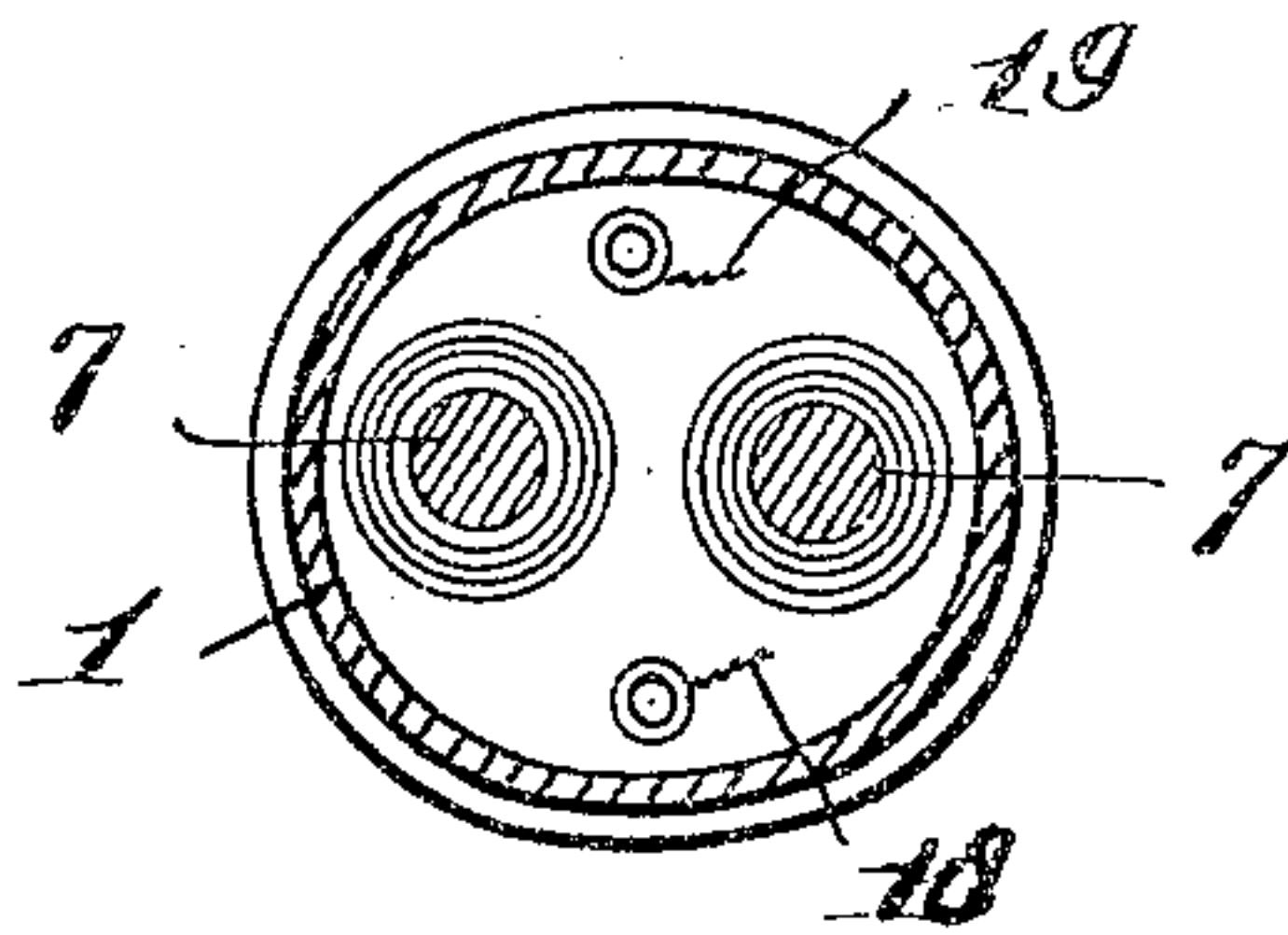


Fig. 1.

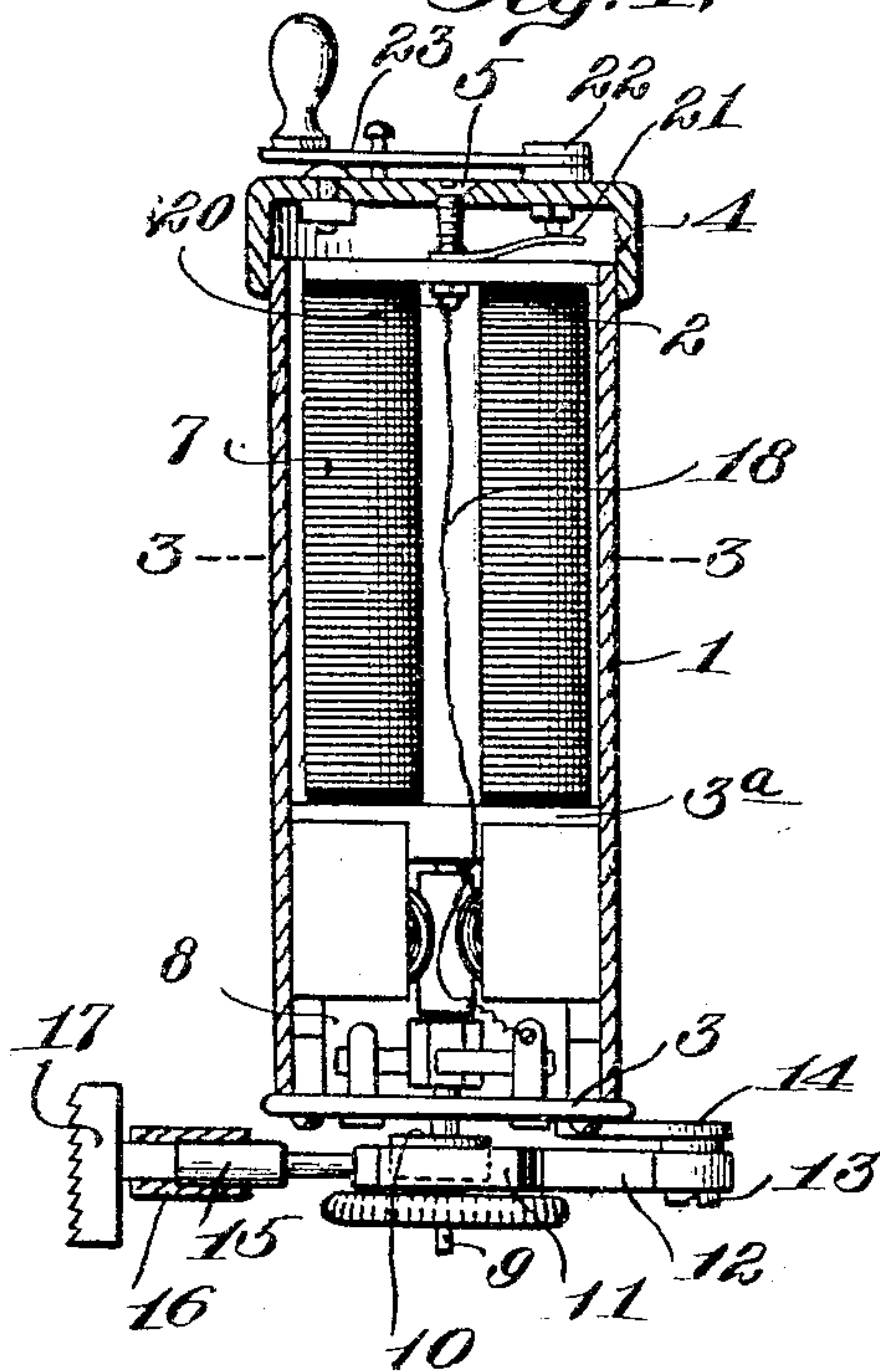


Fig. 4.

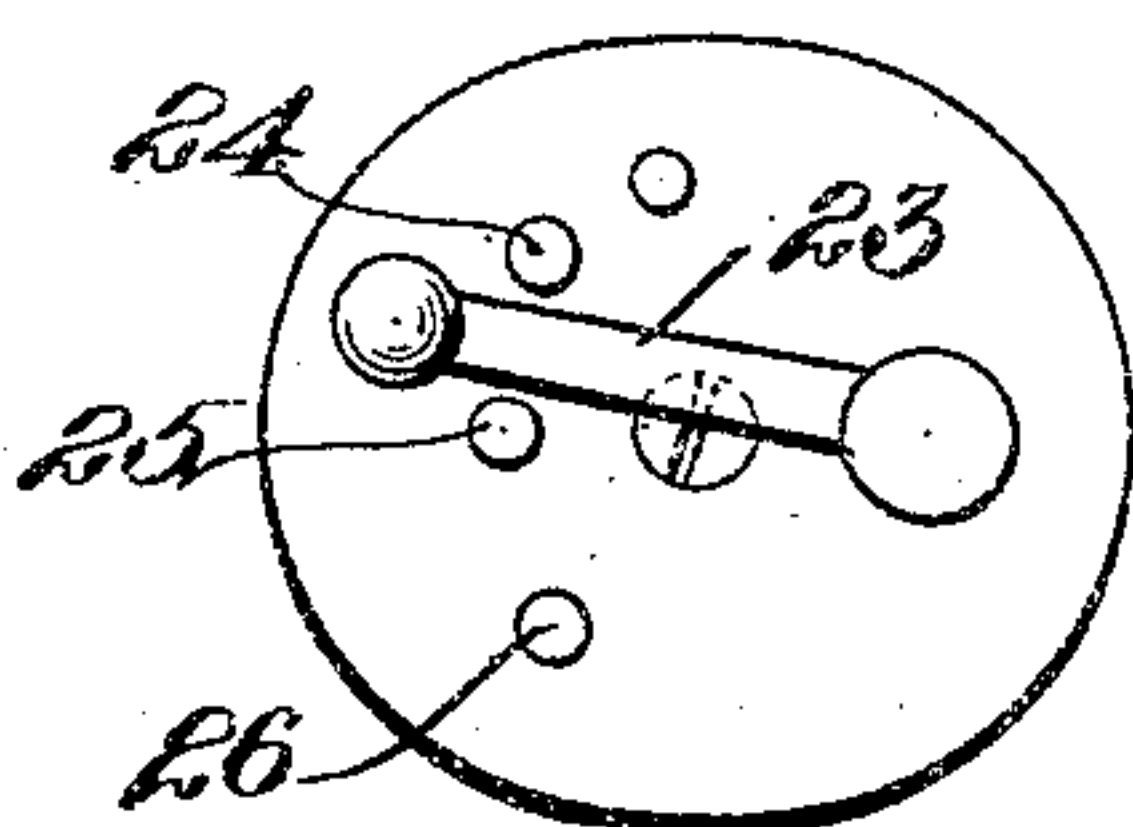


Fig. 5.

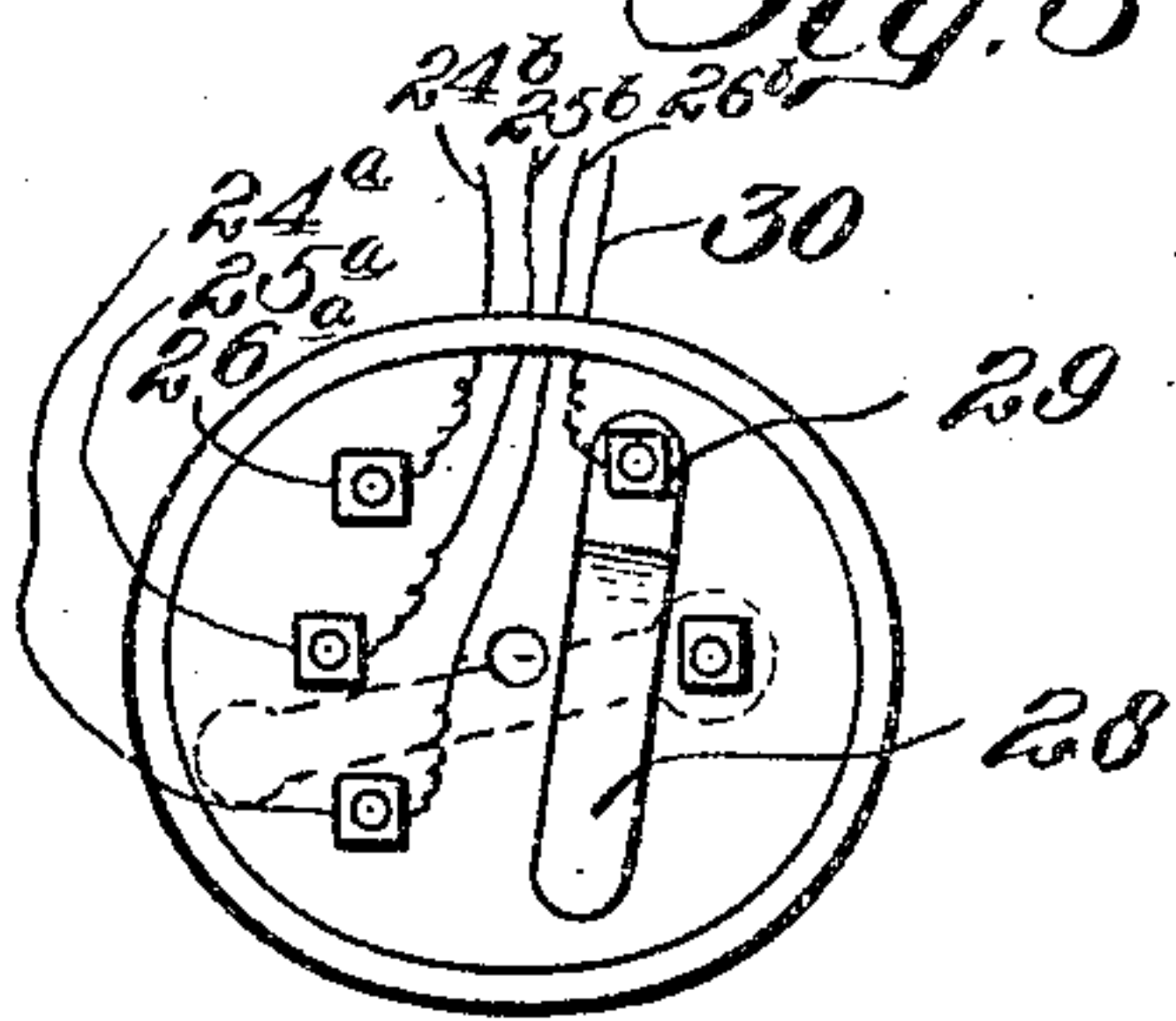
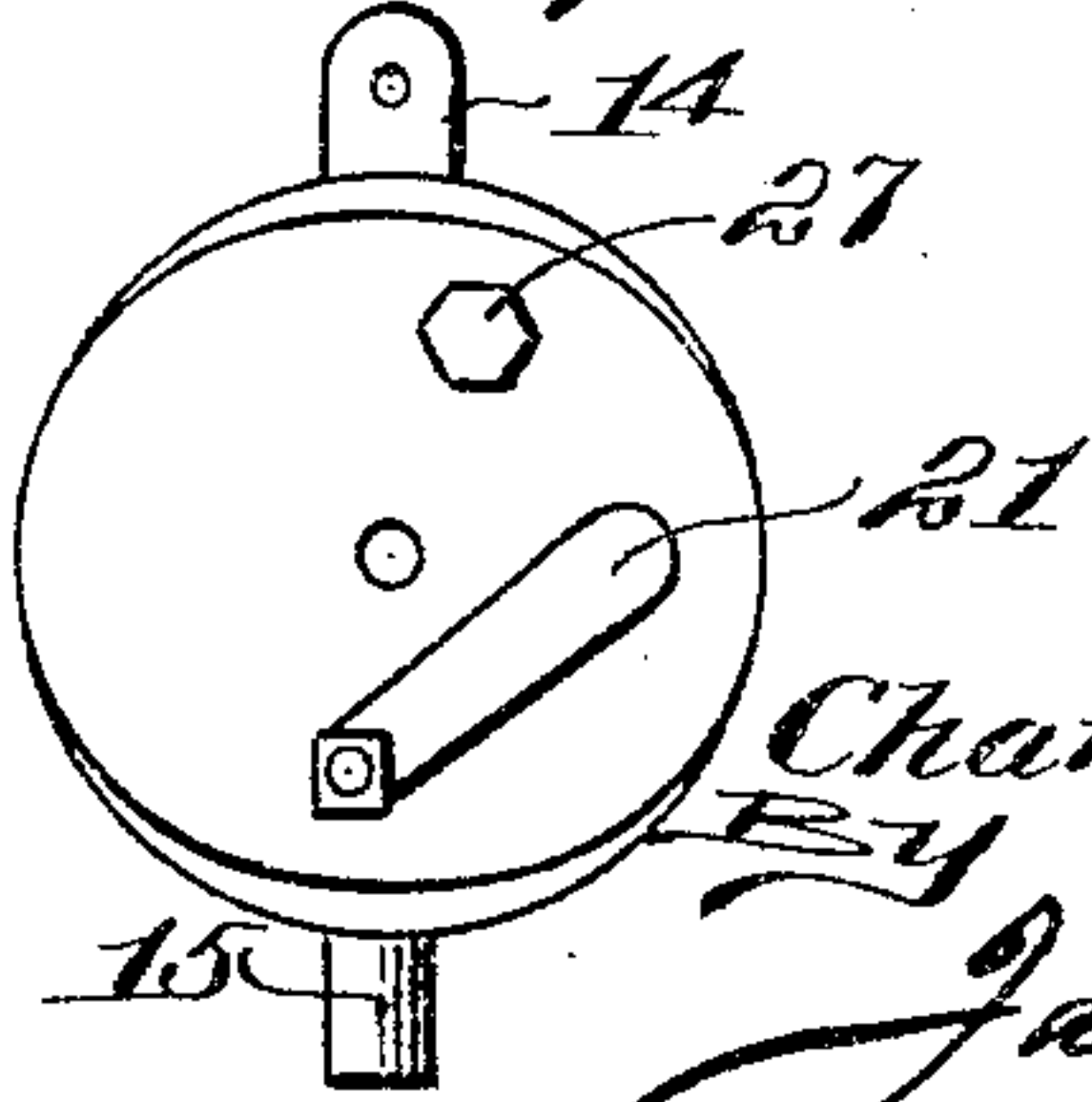


Fig. 6.



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No. 778,771.

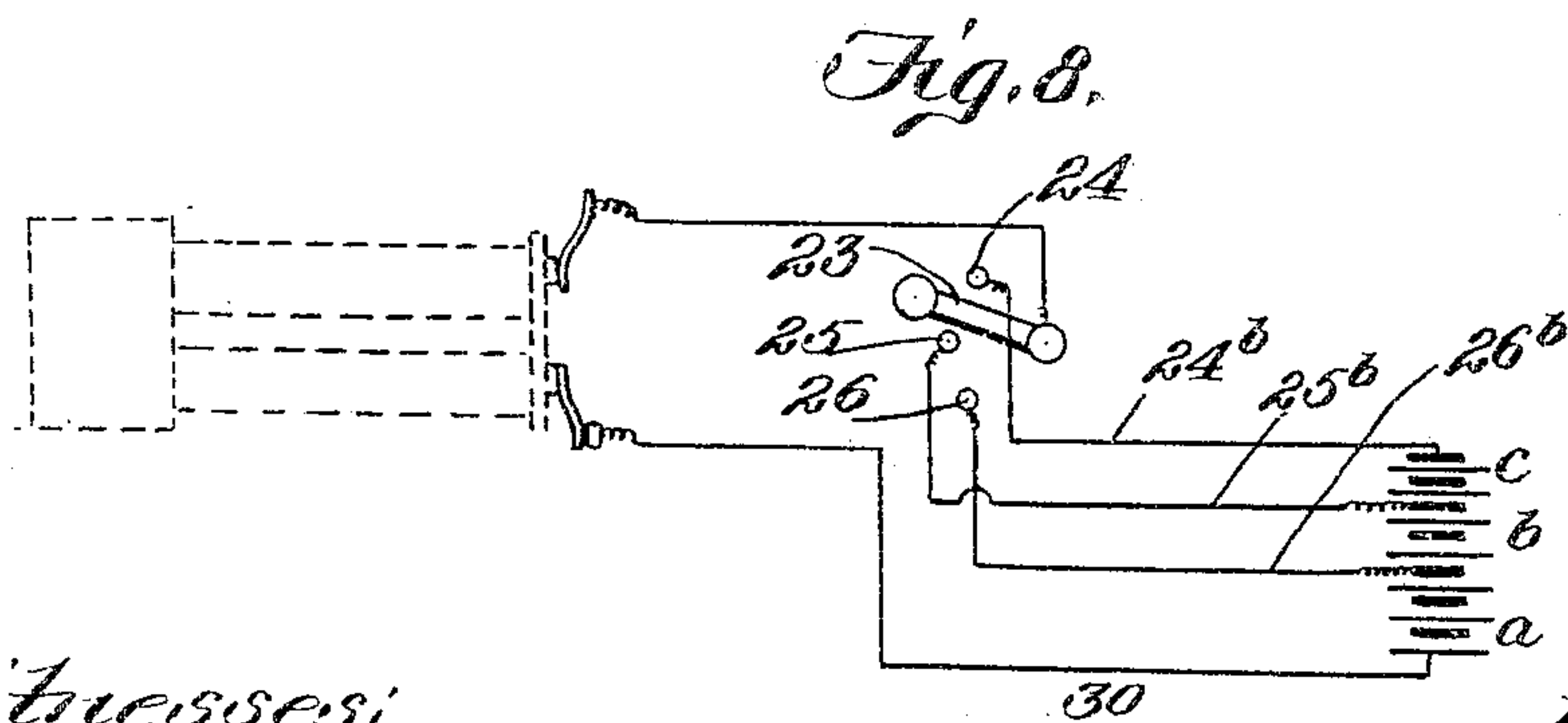
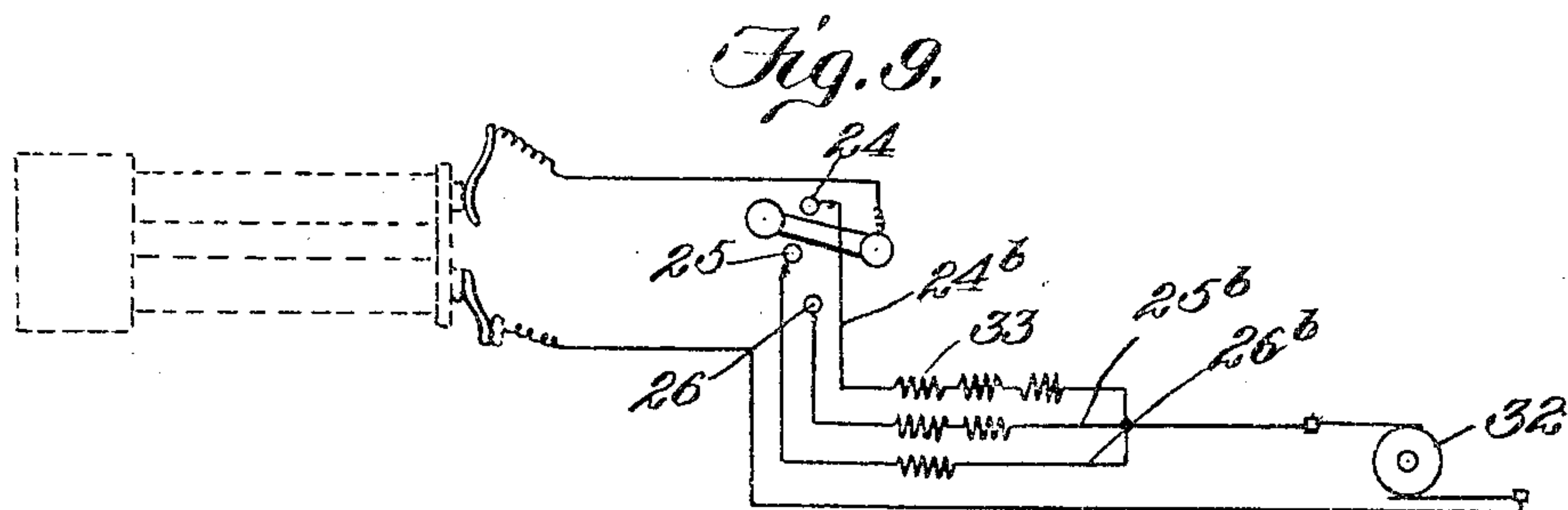
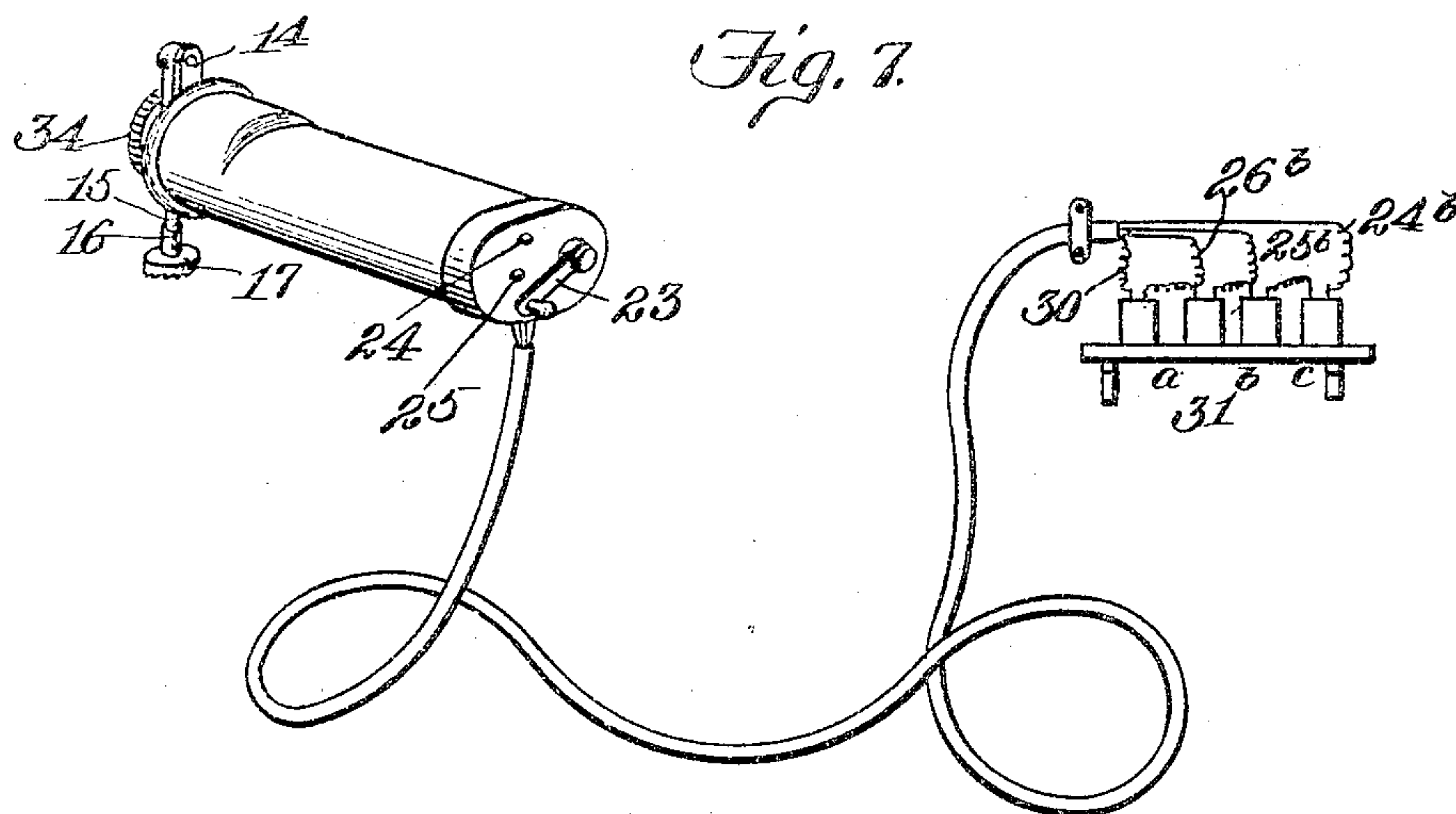
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ELECTROMECHANICAL APPARATUS FOR VIBRATORY MASSAGE.

APPLICATION FILED FEB. 9, 1904

2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

CHARLES ADAMS-RANDALL, OF NEW YORK, N. Y., ASSIGNOR TO RANDALL AND CAREY VIBRAL-MASSAGE MACHINE COMPANY, A CORPORATION OF NEW YORK.

## ELECTROMECHANICAL APPARATUS FOR VIBRATORY MASSAGE.

SPECIFICATION forming part of Letters Patent No. 778,771, dated December 27, 1904.

Application filed February 9, 1904. Serial No. 192,819.

*To all whom it may concern:*

Be it known that I, CHARLES ADAMS-RANDALL, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Electromechanical Apparatus for Vibratory Massage, of which the following is a specification.

This invention relates to improvements in vibratory-massage apparatus, and particularly that class of such apparatuses wherein a simple portable massage device actuated by electromechanical mechanism is provided which is adapted to be held and guided in the hand of the operator and applied to any desired portion of the human body, the mechanism operating to impart rapid oscillatory vibrations to the massage-pad or contact-piece that is adapted to be applied to the muscles or cuticles of the patient operated upon—for example, as is shown in the application for patent filed by me on the 9th day of January, 1904, Serial No. 188,307.

The present invention has for its object to provide in such an apparatus improved means which may be conveniently and readily manipulated and controlled by the hand holding the apparatus to govern the strength of the current applied to said mechanism.

It also has for its object to provide improved means for converting the rotary motion of the electric motor into an oscillatory movement of the pad or contact-piece.

Finally, it has for its object to provide a device of the character described which will be extremely simple and inexpensive in construction and thoroughly efficient in operation and which may be readily applied by the hand of the operator to the parts to be treated.

To these ends my invention consists in the features and in the construction, combination, and arrangement of parts hereinafter described, and particularly pointed out in the claims following the description; reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a longitudinal sectional view of my improved massage apparatus. Fig. 2 is

an end view thereof. Fig. 3 is a transverse sectional view taken on the line 3 3 of Fig. 1. Fig. 4 is an end view of that end of the device carrying the switch. Fig. 5 is an interior plan view of the removable cap. Fig. 6 is an end view, the cap being removed. Fig. 7 is a perspective view showing the apparatus connected up with a series of batteries. Fig. 8 is a diagrammatic view illustrating the arrangement shown in Fig. 7; and Fig. 9 is a view similar to Fig. 8, the device being illustrated as connected up with a dynamo-electric-lighting circuit or the like.

Referring to the drawings, the numeral 1 indicates a tubular casing preferably constructed of hard rubber or similar insulating material and provided at one end with a head 2 and at its other end with a cap-plate 3, the end in which the head 2 is inserted being provided with a removable hard-rubber cap 4, which is detachably held in place by a screw 5, which passes centrally through said cap and through the head 2.

The numeral 7 indicates the field-magnet of an electric motor, and the numeral 8 the rotatable armature thereof, the armature-shaft 9 projecting through the cap-plate 3 at one end and at its other end having a step bearing against a brass plate 3<sup>a</sup>, attached to the inner ends of the field-magnet. On the armature-shaft 9 is fixed an eccentric 10, which is arranged to rotate within an elongated eccentric-collar 11, which forms the intermediate portion of the lever 12, one end of which is pivotally secured, as at 13, to a fixed support 14, projecting from one side of the cap-plate 3, and at its other end is provided with a cylindrical extension 15, over which is removably fitted a sleeve 16, provided at its end with a pad or contact-piece 17 of any suitable or preferred construction. The pivot 13 of the oscillating lever 12 is the fulcrum, the collar 11 the point where the power is applied, and the pad or contact-piece 17 the means for effecting the work to be done by said lever.

It will be obvious from an examination of Figs. 1 and 2 of the drawings that as the armature-shaft is rotated by the electric motor



the eccentric 10 will rotate within the elongated collar 11, and as the oscillatory lever 12 is fulcrumed at one end, as at 13, a vibratory or oscillatory movement will be imparted to said lever and will vibrate or oscillate the pad or contact-piece 17 back and forth with great rapidity, and in practice the operator holding the casing 1 in one hand will so apply the device to the muscles or body of the patient to be operated upon that said pad or contact-piece will exert a rapid rubbing or massage action upon the patient's muscles or cuticle. In order that the device may be applied conveniently and accurately to the parts to be treated, I prefer to make the tubular casing 1 intermediate its ends slightly elliptical in cross-section, as most clearly shown in Fig. 3 of the drawings, whereby the casing may be grasped in the operator's hand without liability of turning or twisting therein.

The numeral 18 indicates the feed-terminal of the motor, and the numeral 19 the return-terminal. The terminal 18 is electrically connected to a bolt 20 in the head 2, said bolt operating to secure to said head one end of a contact-spring 21. The free end of said spring when the cap 4 is secured in position bears against one end of a bolt 22 in the cap 4, which constitutes a pivot for a switch-lever 23. Passing through the cap 4 are three headed bolts 24, 25, and 26, the heads of which constitute contacts adapted to be engaged one at a time by the switch-lever 23, and to said bolts 24, 25, and 26 are respectively connected leading-in wires 24<sup>a</sup>, 25<sup>a</sup>, and 26<sup>a</sup>, which lead from a suitable source of electricity in the manner hereinafter described. The return-wire 19 is connected to the bolt 27, which when the cap is in position is electrically engaged by the free end of a contact-spring 28, the other end of said spring being secured to the inner side of the cap by a bolt 29, to which is connected one end of the return-wire 30. To the bolts 24<sup>a</sup>, 25<sup>a</sup>, and 26<sup>a</sup> are respectively connected the leading-in wires 24<sup>b</sup>, 25<sup>b</sup>, and 26<sup>b</sup>, which lead from the battery or generator in the manner hereinafter explained, said leading-in wires and return-wire 30 being insulated from one another and preferably collected together in a flexible cable in a usual and well-known manner.

In Figs. 7 and 8 of the drawings I have shown the leading-in wires 24<sup>b</sup>, 25<sup>b</sup>, and 26<sup>b</sup> connected up with a series of batteries 31, the arrangement being such that by turning the switch-lever 23 so as to contact with either of the contacts 24, 25, or 26 one, two, or three of the batteries will be placed in circuit. For example, if the switch-lever 23 be turned to engage the contact 26 the circuit will then be traced from the first battery *a* to the contact 26, thence by the switch-lever 23 to the contact-spring 21, thence by the leading-in terminal 18 through the motor, and thence by

the leading-out terminal 19 to the contact-spring 28 and by the return-wire 30 back to the battery *a*, thus completing the circuit through the motor and placing the latter in operation. The motor will then operate to vibrate the oscillatory lever carrying the pad or contact-piece in the manner before described. When the switch-lever is moved to the position above described, three battery-cells are thrown into circuit. If the switch be now turned to engage the contact 25, the current will be traced from the generator through the leading-in wire 25<sup>b</sup>, the switch-lever 23, contact-spring 21, leading-in terminal 18, leading-out terminal 19, contact-spring 28, and return-wire 30, and the circuit thus completed includes the two batteries *a* and *b*, comprising five cells, thus doubling the battery-power transmitted to the motor. In like manner when the contact-lever is turned into a position to engage the contact 24 the circuit will be completed in a manner similar to that before described and will include all the batteries comprising—say, for example, six cells—thus again increasing the wattage of the current fifty per cent. In Fig. 9 I have shown the same arrangement of circuits, substituting a dynamo 32 for the batteries, and have inserted in the leading-in wires 24<sup>b</sup>, 25<sup>b</sup>, and 26<sup>b</sup> resistances 33, which may consist of resistance-coils, electric lamps, or resistances of any well-known, ordinary, or suitable construction. As shown, the leading-in wire 26<sup>b</sup> has inserted therein a single resistance, the wire 25<sup>b</sup> two resistances, and the wire 24<sup>b</sup> three resistances. Thus by turning the switch-lever 23 so as to engage the contact 26 the circuit can be completed in the manner before described, and there would be thrown in said circuit an electric lamp—for example, of thirty-two-candle power or an equal resistance—and transmit a current to the motor of one ampere. If the switch-lever be now turned to engage the contact 25, the circuit would include two electric lights or resistances, which would transmit a current, say, of two amperes, and by turning said contact-levers so as to engage the contact 24 the generator would transmit to the motor a current through three lamps or resistances having a potential of three amperes or of any other suitable predetermined wattage. Instead of leading-in wires and return-wires being connected directly to the dynamo, as shown, they may of course be connected up with an electric-lighting or other electric circuit. The important feature in this part of the invention consists in the fact that the switch for controlling the current is arranged upon and forms a part of the massage apparatus held in the hand of the operator, and is thus conveniently and easily operated and obviates the disadvantages that are obviously attendant upon those arrangements wherein the controlling



mechanism is situated at a switchboard or similar device arranged at a point distant from the massage apparatus and the operator.

With a view to obtaining a uniform and rhythmic vibratory or oscillatory movement of the massage-lever and its pad or contact-piece I prefer to mount on the end of the armature-shaft 9 a balance-wheel 34, which operates in the well-known manner of a fly-wheel.

Constructed as above described the apparatus is exceedingly compact, light, and simple and may be readily, conveniently, and accurately applied and controlled by a single hand of the operator.

It will be noted that to one end of the motor is attached the head 2 and to the other end thereof the cap-plate 3, the arrangement being such that when the motor is inserted in the casing 1 the head 2 will close one end of said casing and the cap-plate 3 the other end thereof, and after the cap 4 has been fitted over the headed end of the casing and secured to the head 2 by the screw 5 all the parts of the apparatus will be secured in position. This forms a quick, convenient, and efficient manner of assembling the parts together and also permits of the ready removal of the motor from its casing for adjustment, repairs, or other purposes.

Having described my invention, what I claim is—

1. In a vibratory-massage apparatus, the combination with a tubular casing having a cap fitted over one end thereof, of a rotary electric motor arranged within the casing and

having fixed to one end a cap-plate arranged to close the other end of the casing, a head fixed to the other end of the motor, means for fastening said head to the cap, the armature-shaft of the motor projecting through the cap-plate, an eccentric fixed on the other end of the armature-shaft, a bracket-arm on the exterior of the cap-plate, a lever pivoted at one end to said bracket-arm and provided at its other end with a massage-pad or contact-piece and intermediate its ends with an elongated collar in which the eccentric projects and rotates, and flexible electric connections for supplying current to the motor, the amplitude of vibration of the lever carrying the massage-pad or contact-piece being increased by pivoting one end of the same to the bracket-arm of the cap-plate.

2. In a vibratory-massage apparatus, the combination with a rotary electric motor, of an eccentric fixed on the armature-shaft of the motor, an oscillatory lever pivoted at one end to one side of the armature-shaft and provided at its other end with a massage-pad or contact-piece, the lever intermediate its ends being formed with an elongated collar to snugly receive the eccentric, the opening in the collar being longer than the diameter of the eccentric.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES ADAMS-RANDALL.

Witnesses:

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J. P. MALLORY.