No. 713,365. Patented Nov. 11, 1902.

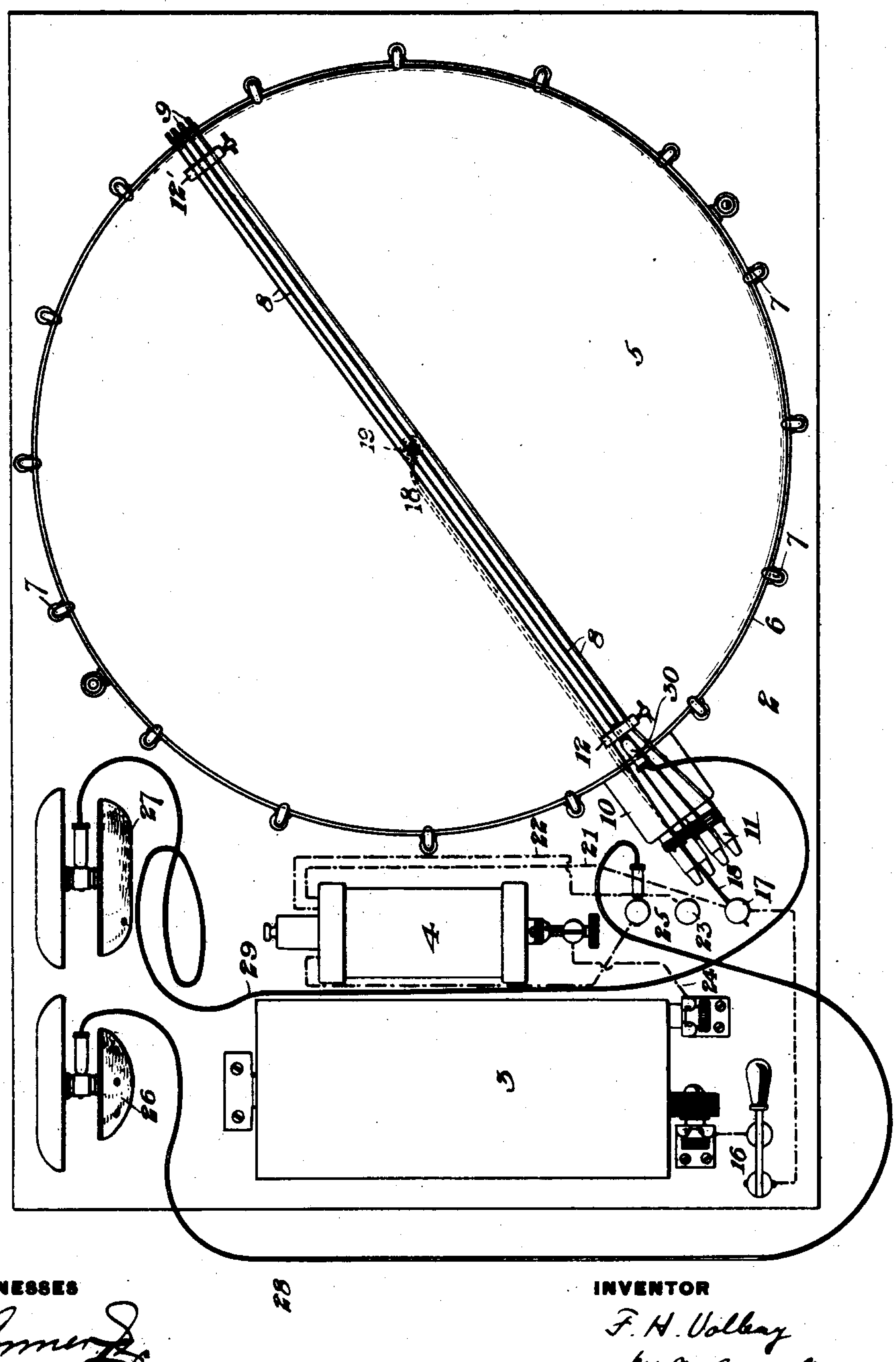
F. H. VOLLERY.

ELECTROMAGNETIC MEDICAL APPLIANCE.

(Application filed May 7, 1902.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



WITNESSES

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Fig. 2.

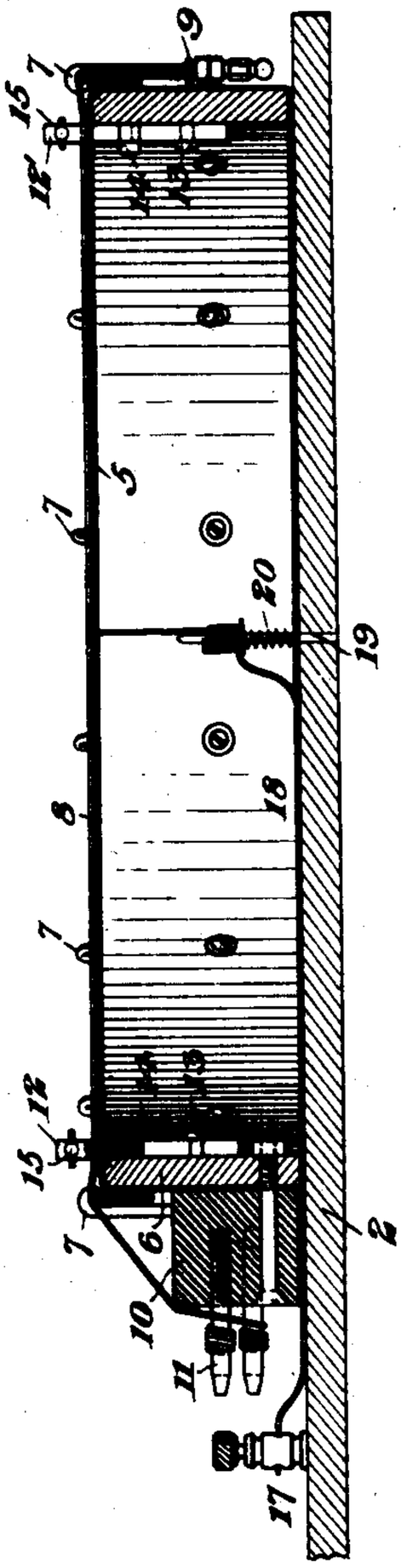
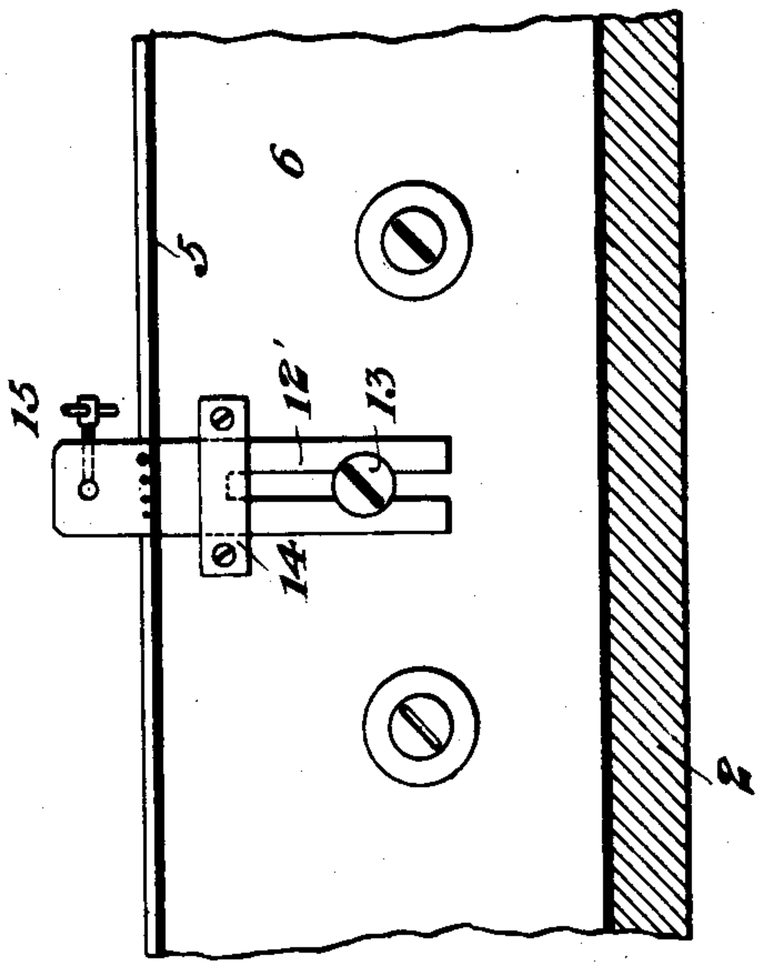


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANCIS H. VOLLERY, OF ALLEGHENY, PENNSYLVANIA.

ELECTROMAGNETIC MEDICAL APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 713,365, dated November 11, 1902.

Application filed May 7, 1902. Serial No. 106,303. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS H. VOLLERY, of Allegheny, Allegheny county, Pennsylvania, have invented a new and useful Electromagnetic Medical Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of my improved apparatus. Fig. 2 is a central longitudinal section of the vibrator, and Fig. 3 is a detail view showing the adjusting mechanism for the strings.

My invention relates to electric medical appliances wherein the current is passed through an induction-coil and is designed to improve the action of such apparatus.

In the drawings, 2 represents a base; 3, a battery; 4, an induction-coil, and 5 a vibrator. This vibrator consists of a drumhead of sheet metal, preferably copper, which is nickel-plated and is tightly stretched over a rim 6 by means of the tension-bolts 7. A high tension is given to this metal diaphragm to bring its particles into molecular tension.

Across the drumhead and close to its surface are a series of parallel wires 8, of which I have shown four, which are stretched between a tailpiece 9 and a headpiece 10, having adjusting-screws 11, by which the wires may be separately tuned. At each point where the wires cross the rim I provide the vertically-adjustable bridges 12 12′, through which the wires pass. Each of these bridges consists of a vertical middle strip having a slotted lower portion secured to the inner faces of the rib by screws 13. The strip is held in place by a strap 14 and is provided with holes for the strings, the upper part also having a binding-screw attachment 15 to receive a conducting-plug when desired. These bridges are preferably adjusted so that the strings are very close to but do not touch the diaphragm. The strings are preferably of different size, are made of copper, and are preferably tuned at regular intervals such as A, C, F, and G. The wire from one pole of the battery leads to a switch 16 and thence to a binding-post 17. From this binding-post 17 an insulated wire 18 leads to the center of the drumhead and is secured to a central pin 19 in the base. The end of the wire 18 terminates in a point which is lightly pressed against the center of the under face of the drumhead by means of a weak spiral spring 20. The wire 21 leads from the post 17 to the primary winding of the induction-coil 4, the current returning to the battery through the interrupter and wire 24. Wires 22 and 31 lead from the secondary-winding coil to posts 23 and 25, respectively. Two electrodes 26 and 27 are provided, each preferably consisting of a moistened sponge covered with perforated chamois-skin. The wire 28 of the electrode 26 leads to the binding-post 25, while the wire 29 of the electrode 27 in the arrangement shown terminates in a plug 30, which is secured in bridge 12.

The device may be used in the form shown or the plug of the wire 28 may be connected to the bridge 12′. The plug 30 may also be changed to the binding-post 17, in which case the vibratory drum device is out of circuit and the current is used in the ordinary way.

The advantages of my invention result from the use of the vibratory diaphragm, by which the effect of the current on the patient is modified.

Many variations may be made in the form and arrangement of the vibrating diaphragm and other parts without departing from my invention.

I claim—

1. In electromagnetic appliances, a source of electric current, a transformer, a vibratory diaphragm conducting-strings over the diaphragm, and connections arranged to complete the circuit through said parts and the body of the patient; substantially as described.

2. In electromagnetic apparatus, a vibratory diaphragm under tension, a series of conducting-strings stretched over the diaphragm, and connections arranged to vibrate the diaphragm electrically; substantially as described.

3. In electric magnetic appliances, a diaphragm, electric connections arranged to vibrate the same, a plurality of wires of different sizes stretched over the diaphragm, and connections arranged to communicate the vibrations to the body of the patient; substantially as described.

4. In electromagnetic apparatus, a vibratory diaphragm, connections arranged to vibrate the same electrically, metallic strings under tension tuned to different pitches and extending over the diaphragm, and conducting-bridges over which the wires pass; substantially as described.

In testimony whereof I have hereunto set my hand.

FRANCIS H. VOLLERY.

Witnesses:
GEO. B. BLEMING,
L. M. REDMAN.