

No. 631,733.

Patented Aug. 22, 1899.

F. G. BONFILS & J. D. ALKIRE, JR.

ELECTRODE FOR ELECTRIC BELTS.

(Application filed Jan. 9, 1899.)

(No Model.)

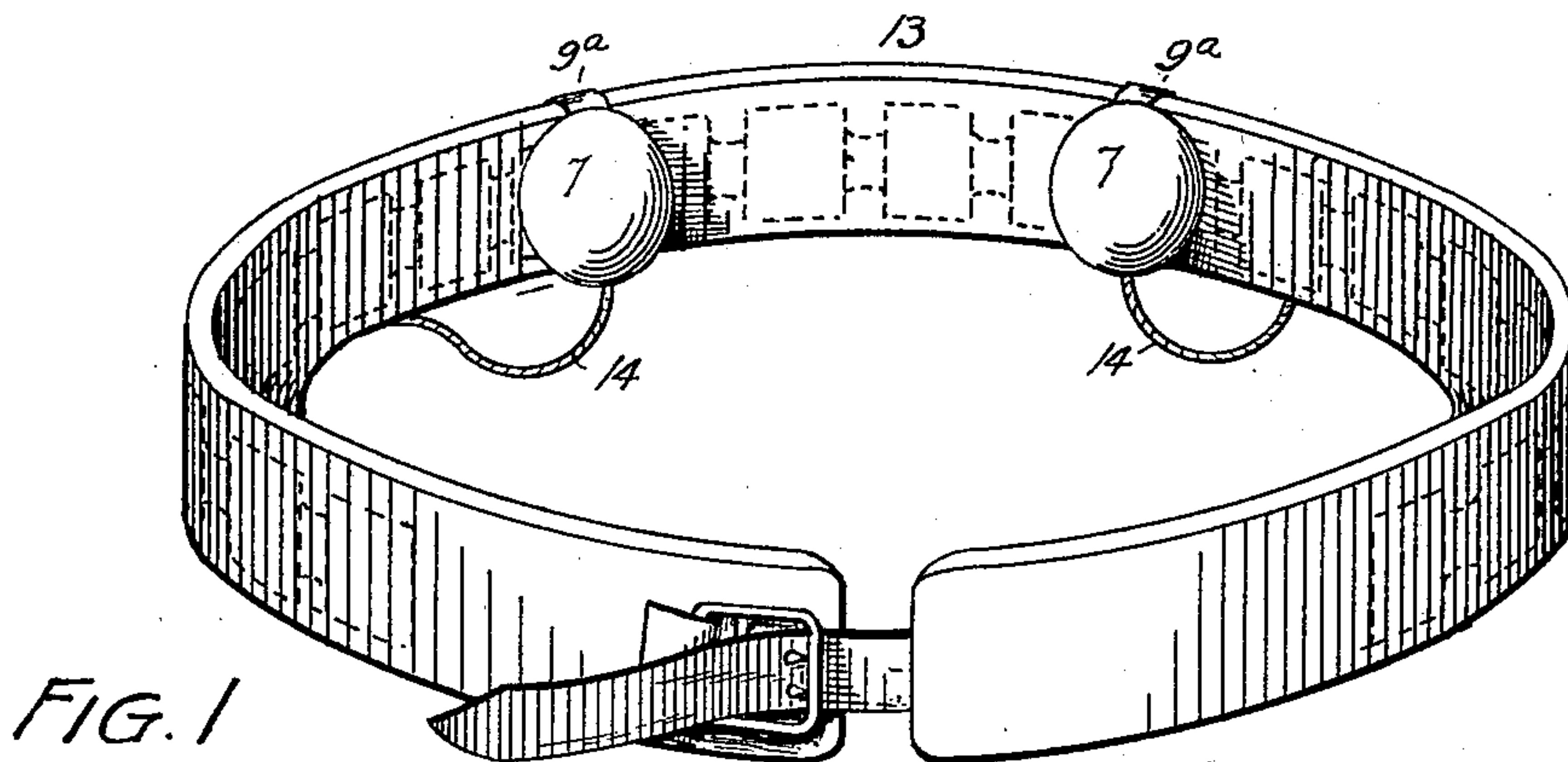


FIG. 1

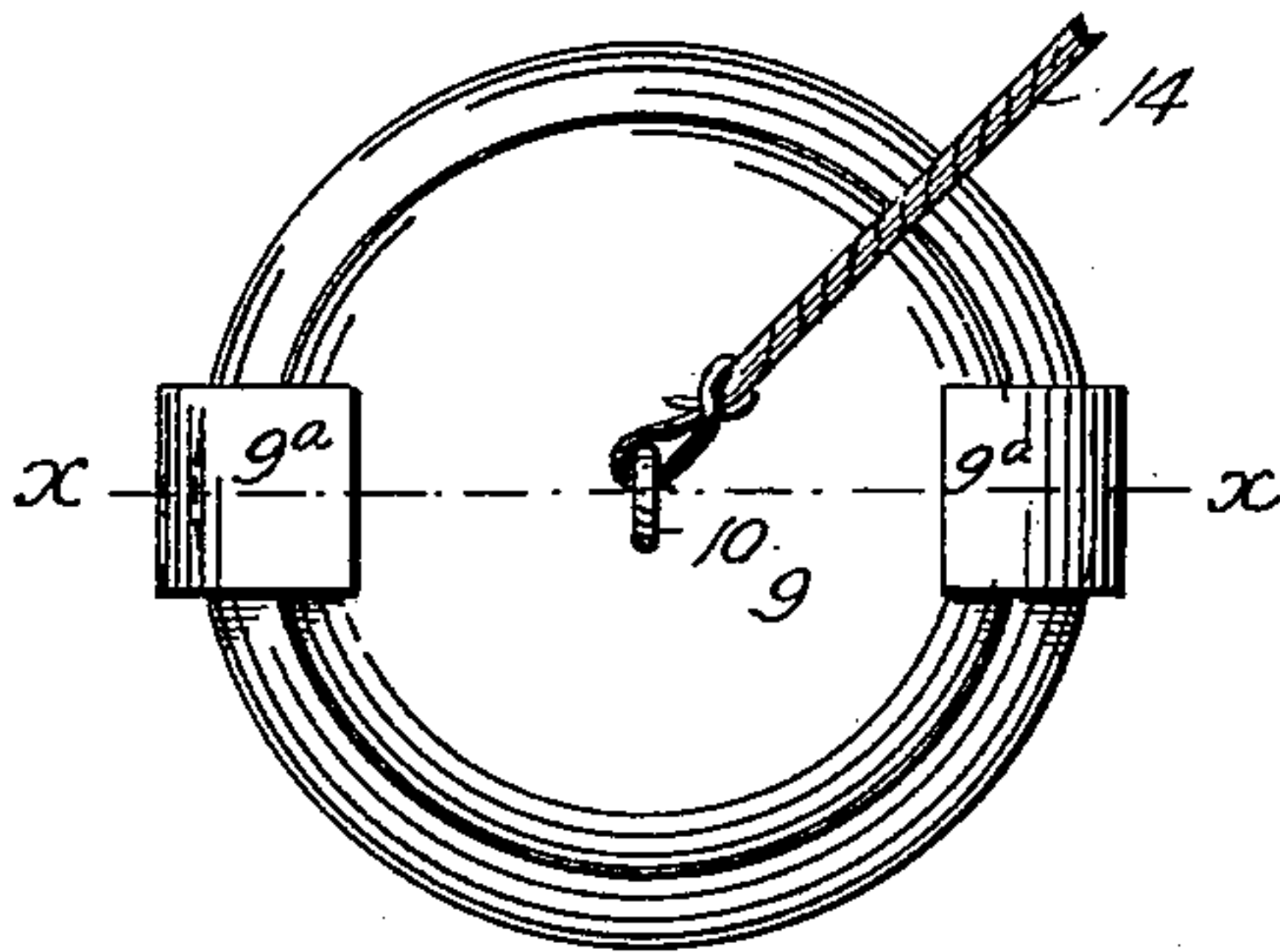


FIG. 2

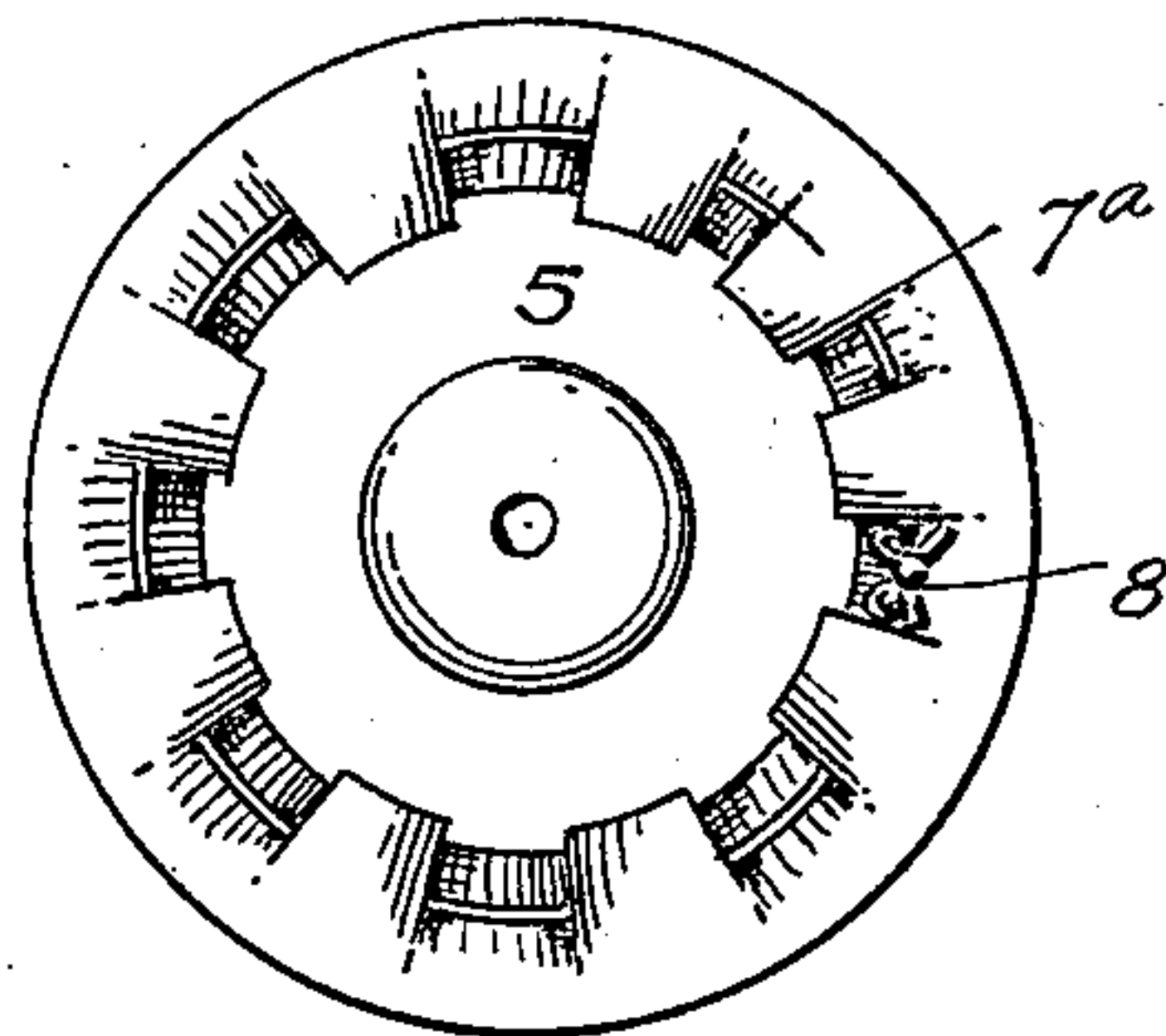


FIG. 3

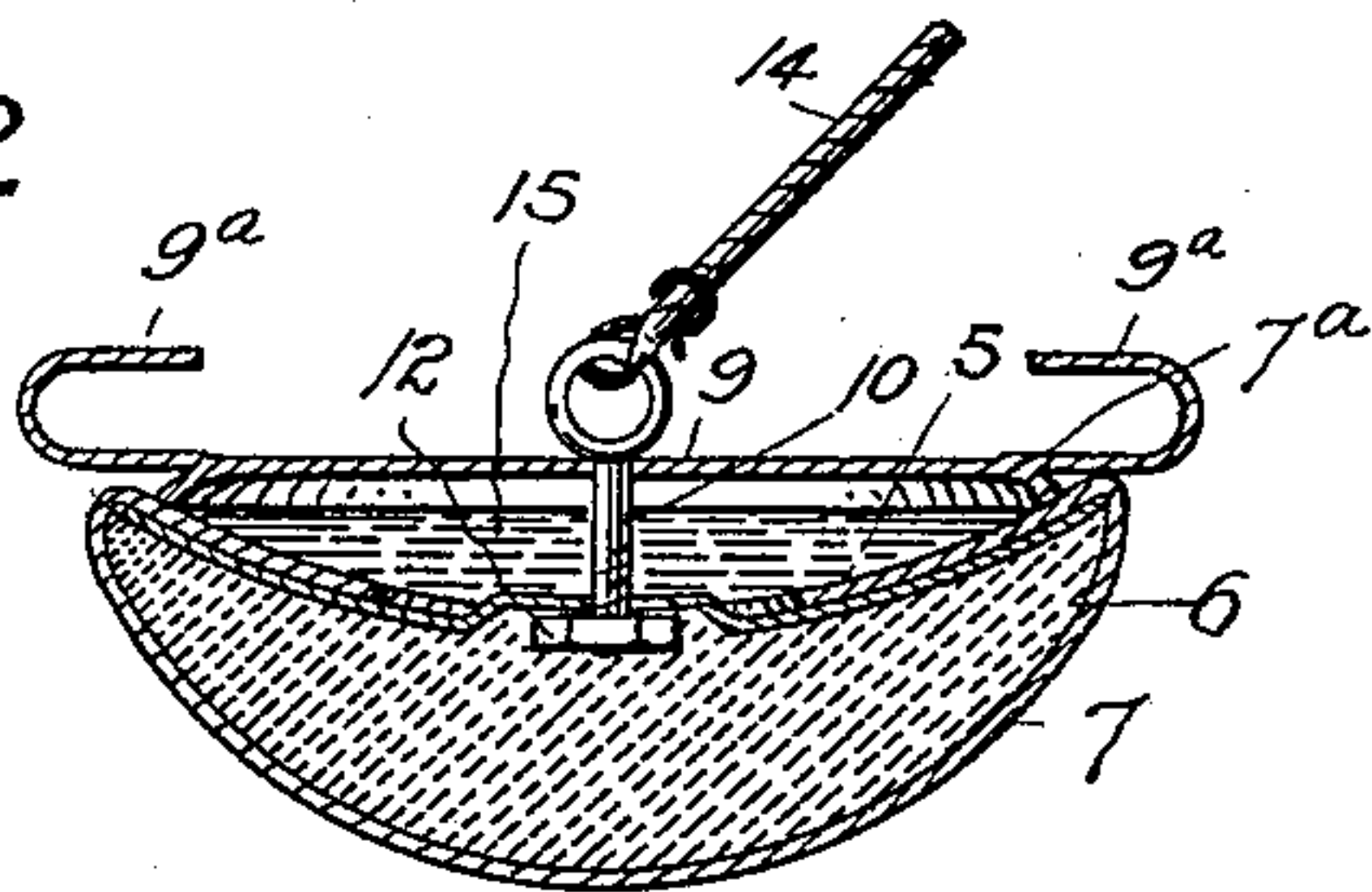


FIG. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

FREDERICK G. BONFILS AND JOHN D. ALKIRE, JR., OF DENVER, COLORADO.

ELECTRODE FOR ELECTRIC BELTS.

SPECIFICATION forming part of Letters Patent No. 631,733, dated August 22, 1899.

Application filed January 9, 1899. Serial No. 701,610. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK G. BONFILS and JOHN D. ALKIRE, Jr., citizens of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Electrodes for Electric Belts; and we do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in electrodes specially designed for use in connection with electric belts, but which may be employed in many other relations where an electrode is needed.

Our object is to provide a device of this class which shall be simple in construction, economical in cost, reliable, durable, and efficient in use; and to these ends the invention consists of the features hereinafter described and claimed, all of which will be fully understood by referring to the accompanying drawings, in which is illustrated the embodiment thereof.

In the drawings, Figure 1 illustrates an electric belt provided with our improved electrodes. Fig. 2 is a back view of the electrode shown in detail. Fig. 3 is a similar view with the outer disk removed. Fig. 4 is a section taken through the electrode on the line *x x*, Fig. 2.

Similar reference characters indicating corresponding parts in the views, let the numeral 5 designate a concavo-convex disk, preferably composed of copper, but which may be made of any material forming a good conductor for the electric current. The convex surface of this disk is turned toward the face of the electrode or that part which comes in contact with the body of the wearer. In contact with the convex surface of this disk is placed a piece of sponge 6 or other suitable absorbent material. Outside this sponge and forming the face of the electrode is placed a piece of chamois 7 or other similar or suitable soft leather or fabric adapted to give ease and com-

fort to the wearer. The outer edge 7^a of this chamois is turned back over the edge or periphery of the disk 5, as best shown in Fig. 3, and tightly fastened by means of a puckering string or cord 8, whereby the face of the electrode presents a perfectly smooth, soft, cushiony surface to the body of the wearer. To the part 7^a of the chamois is applied another disk 9, which we prefer to construct of hard rubber, but which may be formed from any other suitable material. This disk is slightly concavo-convex, with its concave surface turned toward the corresponding surface of the disk 5. The above disks are connected by means of a small eyebolt 10, which passes through registered apertures formed in the center of the disks, a fastening-nut 12 being applied to its inner extremity. The center of the disk 5 is pressed rearwardly, forming a recess for the nut, which is thus brought flush with the convex surface of the disk. Hence the disk 9 holds the chamois securely in place and conceals its puckered portion.

The disk 9 is provided with hooks 9^a, which retain the electrode on the belt 13 and permit it to slide for purposes of adjustment. A conductor 14 leads from each electrode to the battery of the belt, which is indicated by dotted lines in the drawings. The two electrodes are suitably separated, and when the belt is in use their chamois surfaces are in direct contact with the body of the wearer, which bridges the space between the electrodes and closes the electrical circuit. The sponge or other absorbent material is moistened sufficiently for conducting purposes, whereby the current is allowed to pass between the body and the copper plate 5. The bolt 10 forms the electrical connection between the plate 5 and the conductor 14.

Electrodes having metal body-engaging surfaces produce blisters and cause serious inconvenience to the wearer. It is evident that our improved electrode obviates all difficulty of this character.

Between the disks 5 and 9 a chamber 15 is formed, which may contain water for the purpose of moistening the absorbent substance 6. The water passes from this chamber by capillary attraction through the chamois 7^a

between the disks to the sponge and its covering, which are kept properly moistened for the purpose stated.

Having thus described our invention, what we claim is—

1. An electrode of the class described comprising two disks, a bolt connecting them, a body-engaging surface composed of chamois or other suitable soft material, absorbent material interposed between the chamois and one of the disks, and a conductor leading from the bolt to the battery of the belt or other similar device.

2. The combination with a belt having a suitable battery, of an electrode comprising two disks connected by an eyebolt one of them being provided with hooks adapted to engage the edges of the belt whereby it is slidingly mounted thereon, a piece of chamois or other soft material forming a body-engag-

ing surface, its outer edge being clamped between the two disks, and a piece of absorbent material interposed between one of the disks and the chamois which is stretched thereover.

3. An electrode comprising two disks connected by a suitable fastening device and arranged to form a water-chamber between them, a piece of absorbent material applied to one of the disks and a piece of chamois or other soft material or fabric stretched over the absorbent material, its outer edge being clamped between the two disks and forming an outlet for the water from the said chamber.

In testimony whereof we affix our signatures in presence of two witnesses.

FREDERICK G. BONFILS.

JOHN D. ALKIRE, JR.

Witnesses:

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