

(No Model.)

2 Sheets—Sheet 1.

S. DE BAUN.
ELECTRIC BELT.

No. 398,133.

Patented Feb. 19, 1889.

Fig. 1.

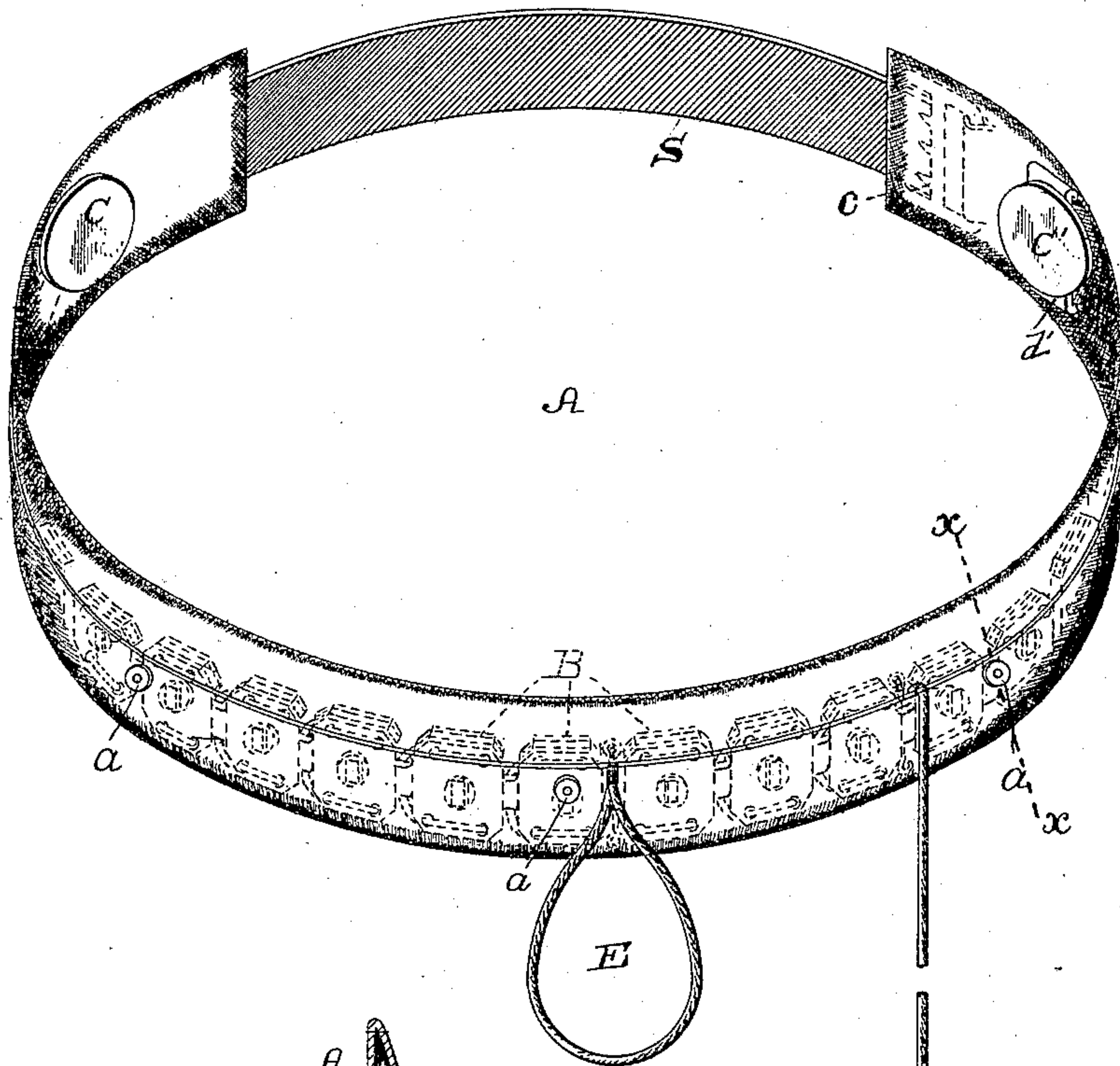


Fig. 2.

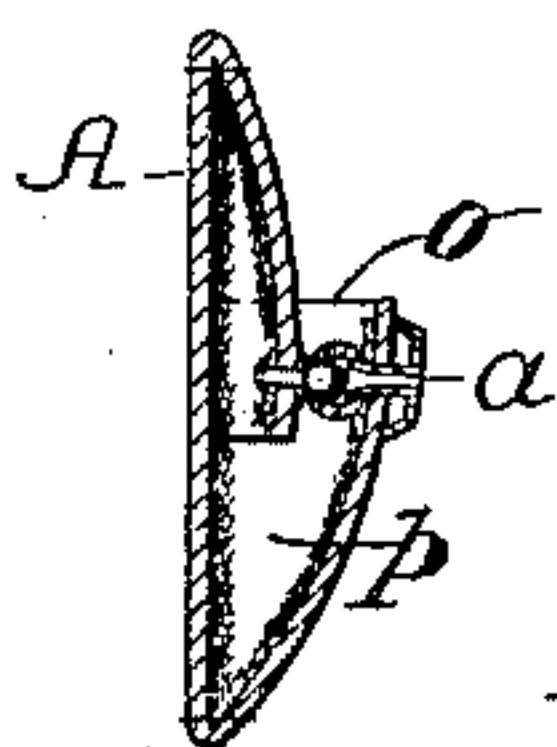


Fig. 3.

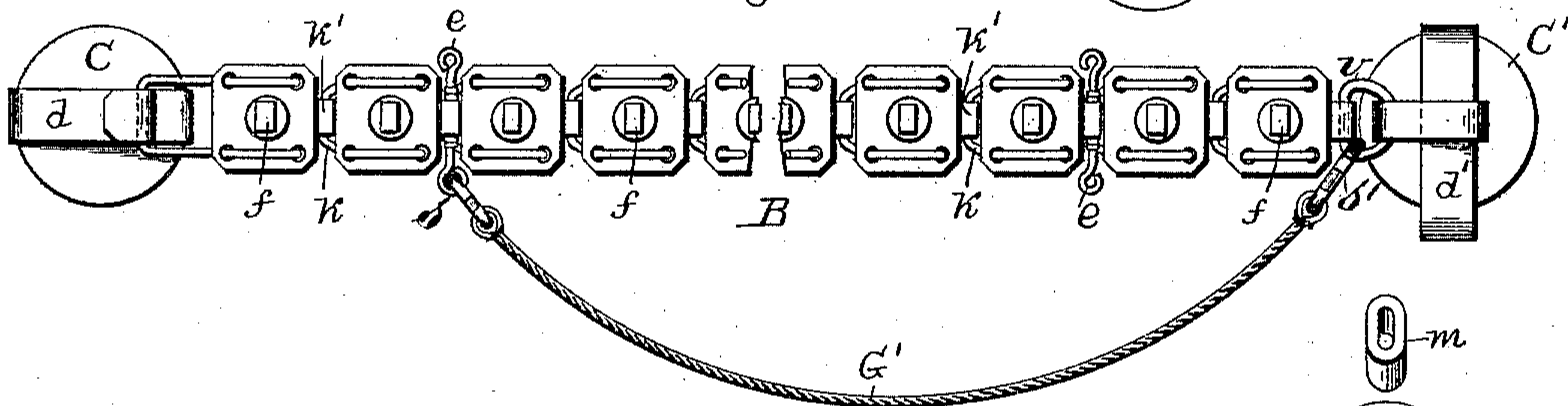


Fig. 4.

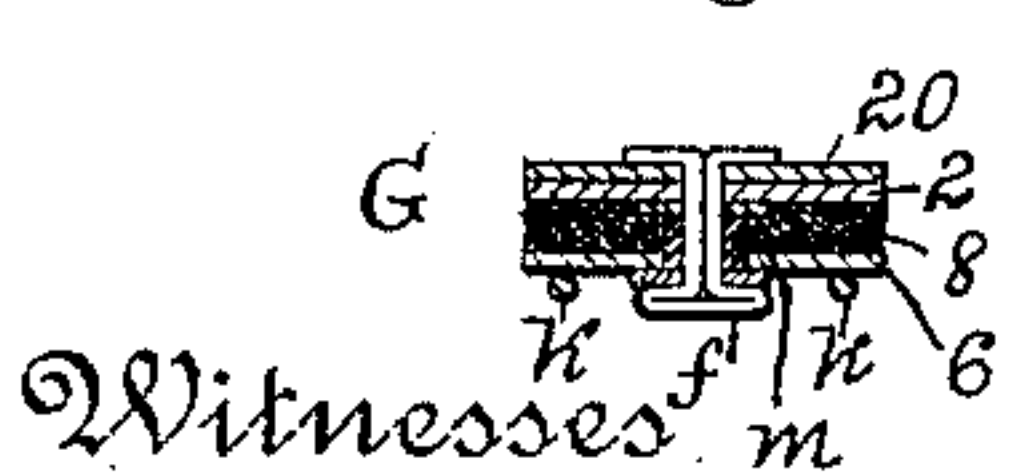


Fig. 5.

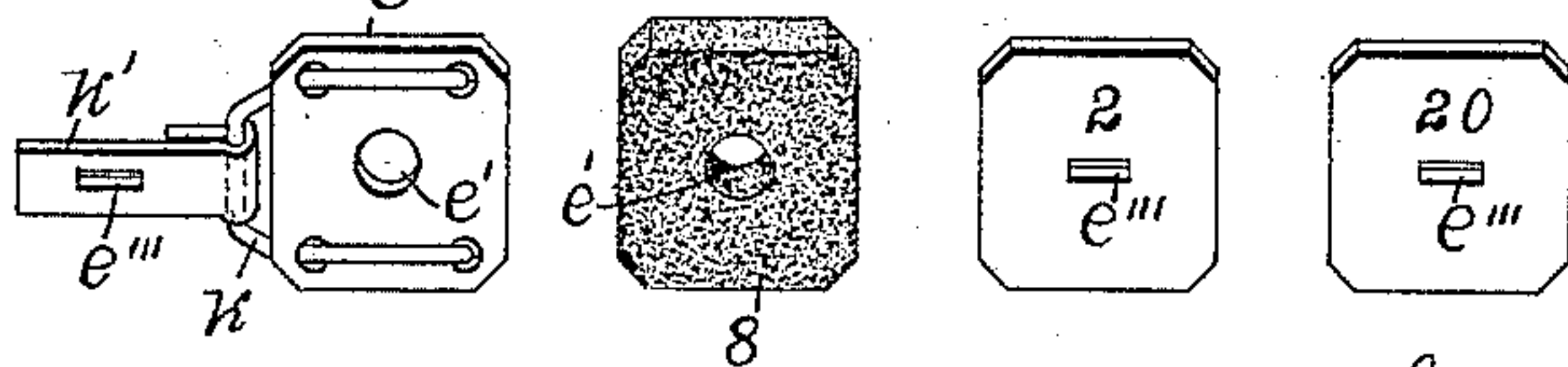
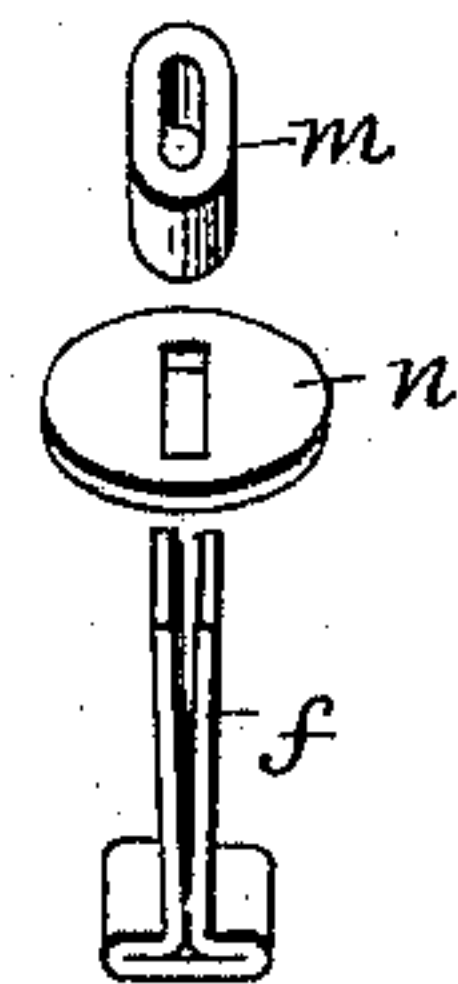


Fig. 6.



Witnesses

F. G. Fischer
A. A. Higdon.

By His Attorney

Inventor,
Samuel De Baun
Higdon

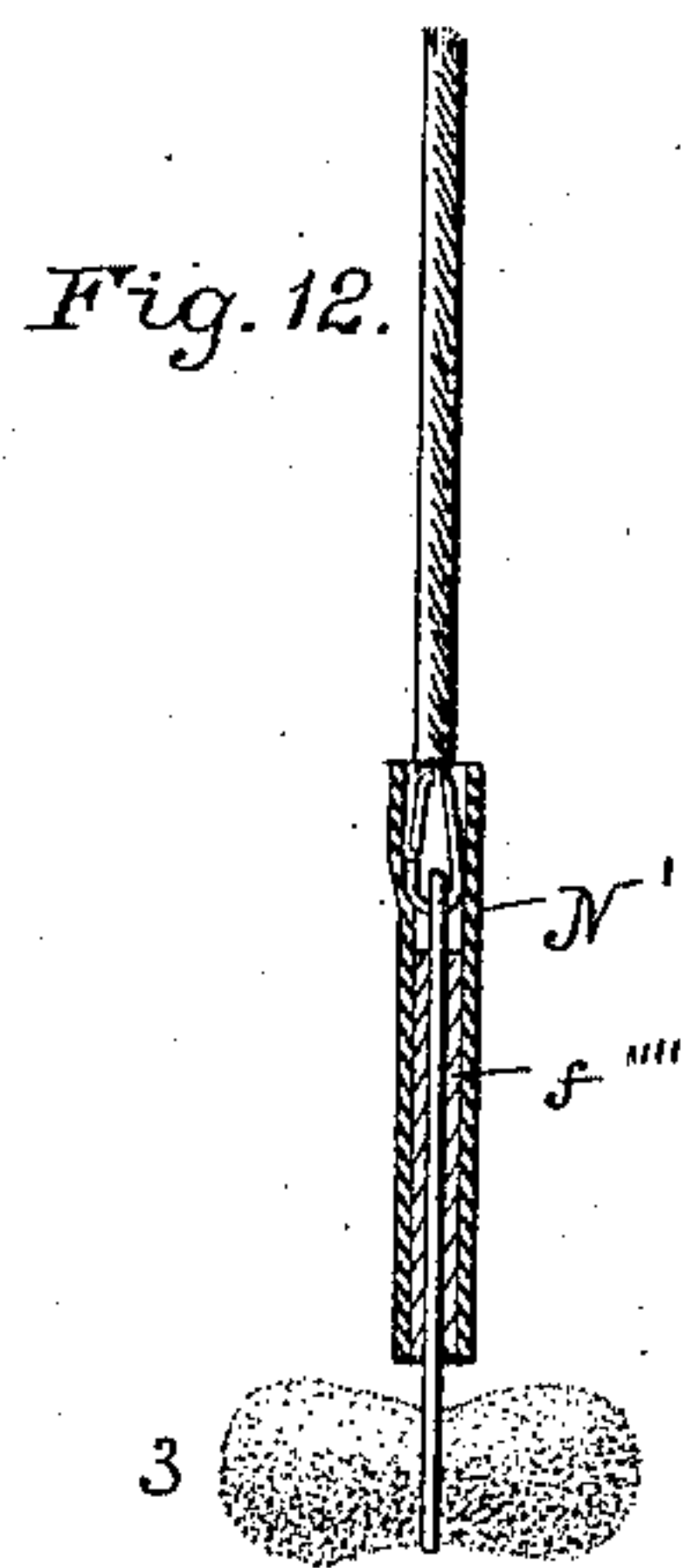
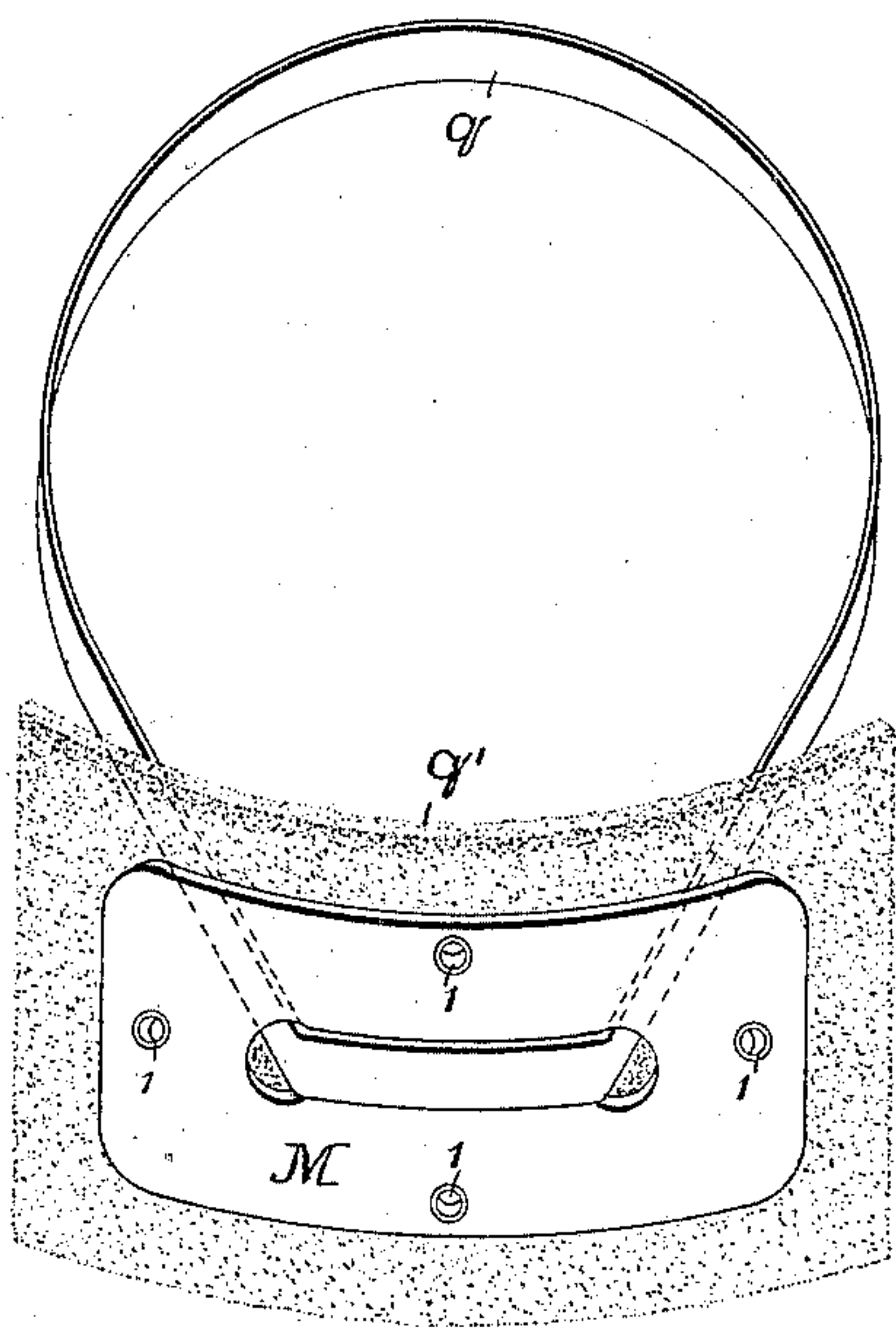
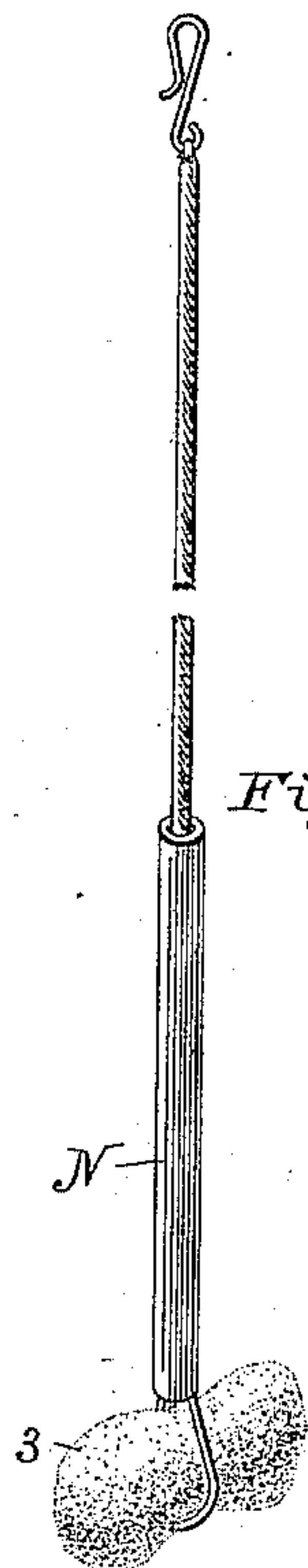
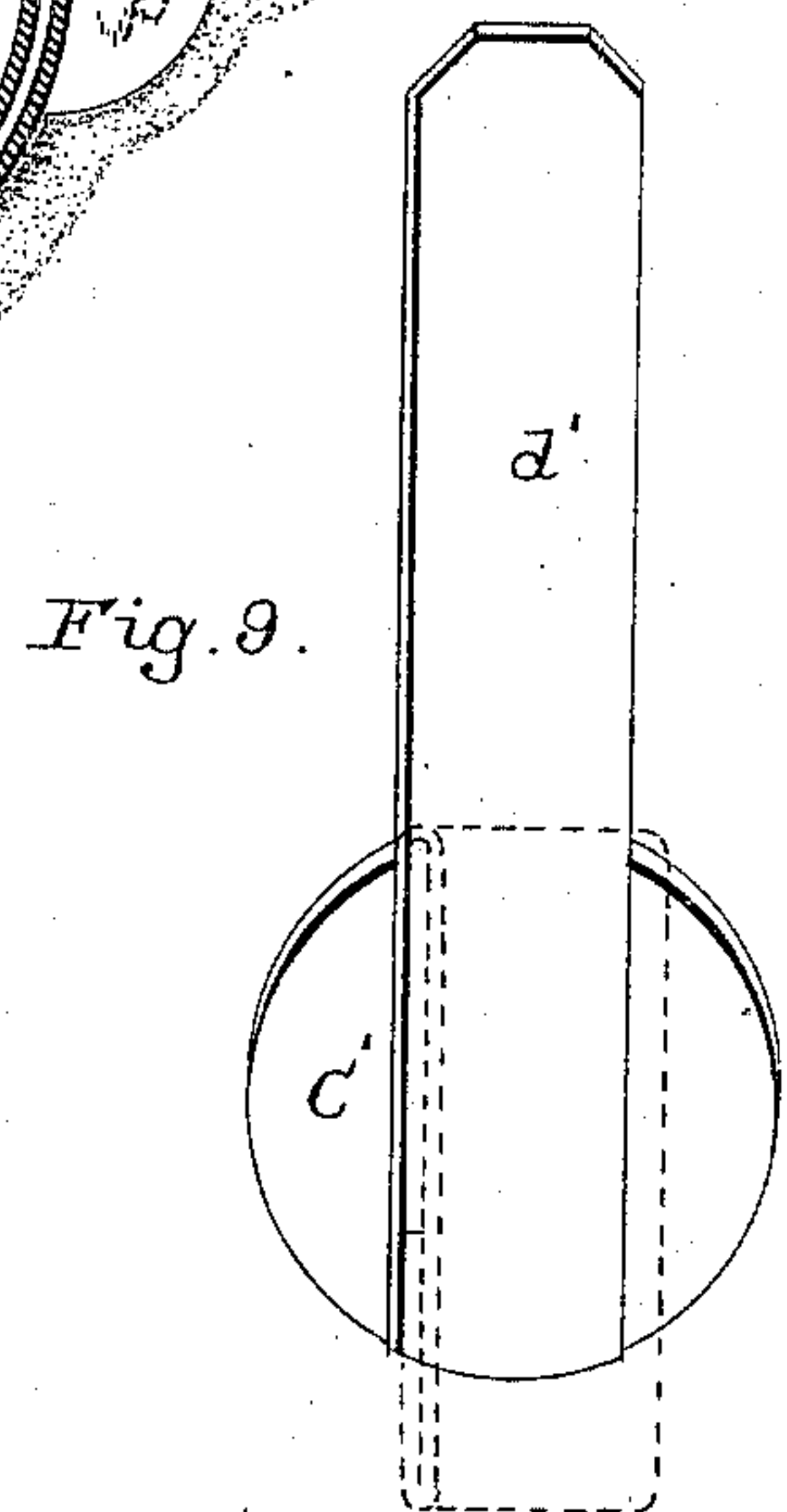
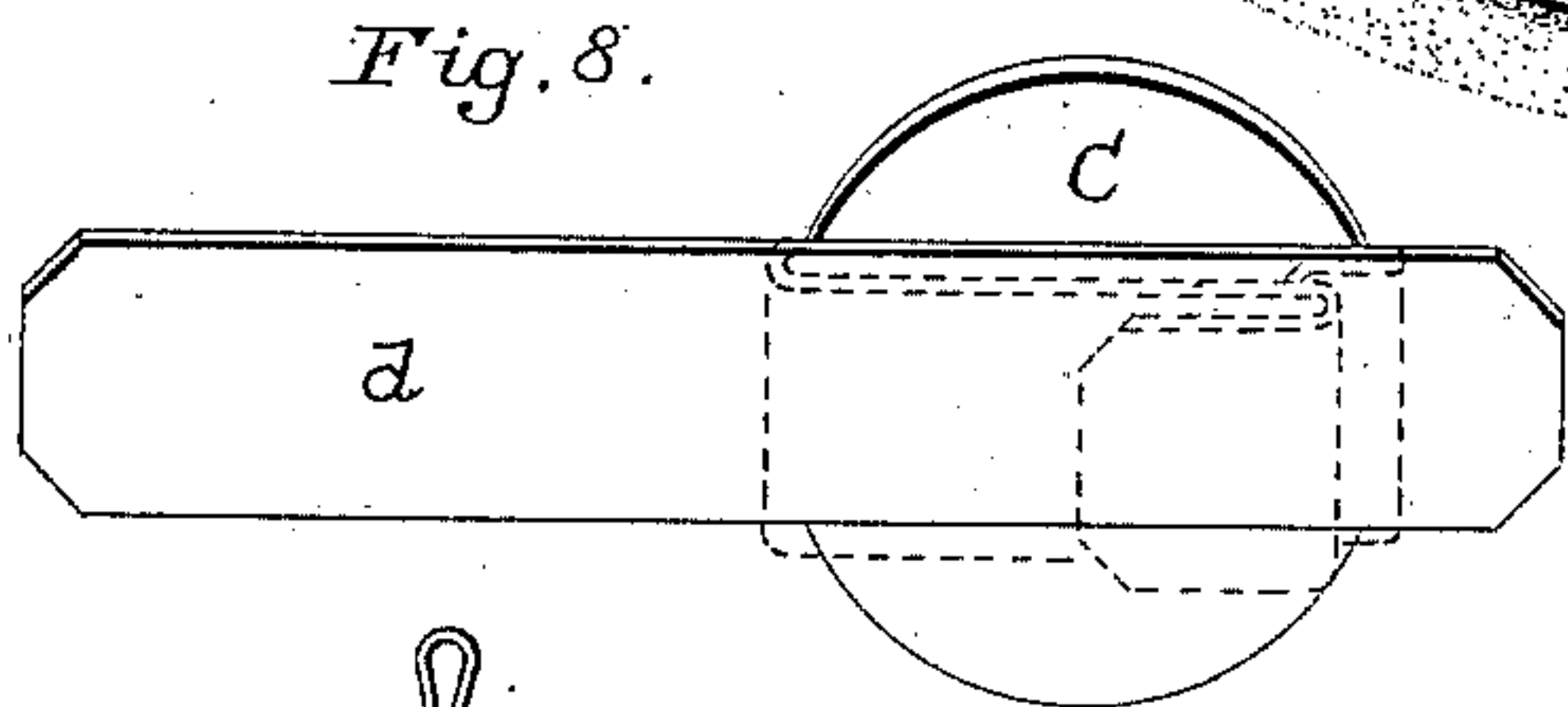
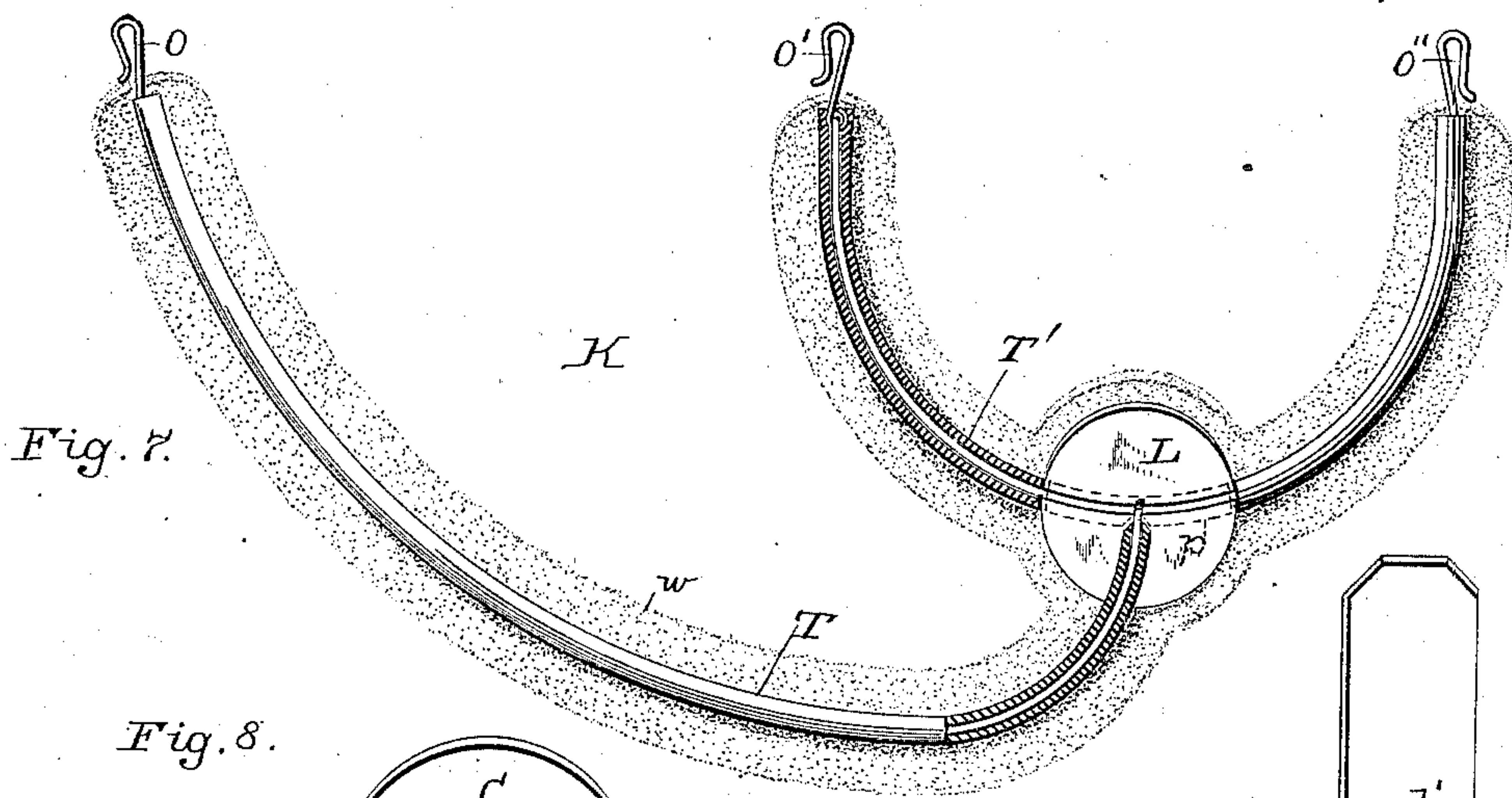
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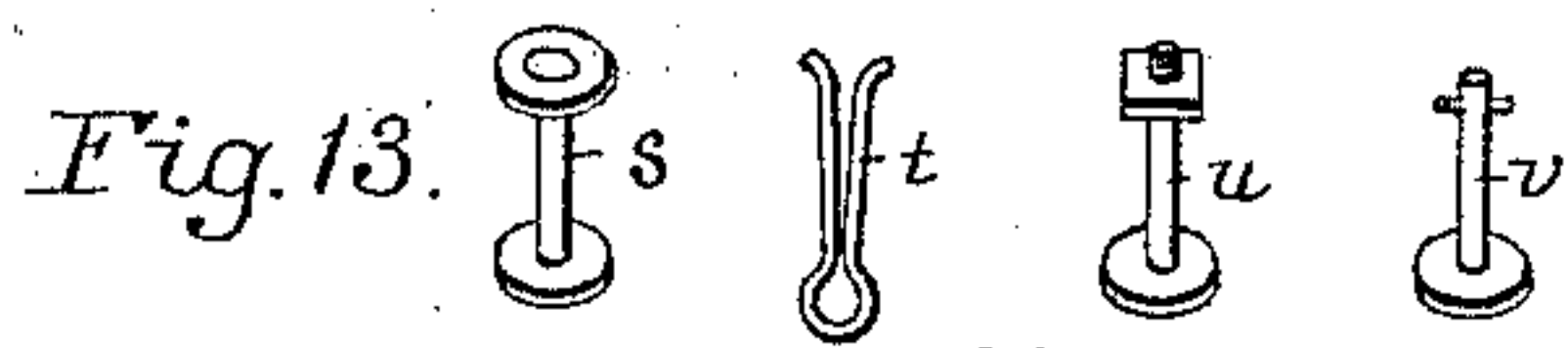
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Witnesses,

L. G. Fischer

A. A. Higdon



By His

Attorney

Inventor,

Samuel De Baun.

A. A. Higdon

UNITED STATES PATENT OFFICE.

SAMUEL DE BAUN, OF KANSAS CITY, MISSOURI.

ELECTRIC BELT.

SPECIFICATION forming part of Letters Patent No. 398,133, dated February 19, 1889.

Application filed November 22, 1888. Serial No. 291,560. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL DE BAUN, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improve-
5 ments in Electric Belts, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improvement in
10 electro-galvanic belts that are adapted to be worn upon the waist of the patient for the cure of diseases of different kinds, and particularly those of the nervous system.

The object of my present invention is to
15 provide a device of the character named which will be adapted from its form of construction to generate comparatively powerful currents of electricity, and, further, to furnish convenient means for the transmission
20 of the battery-current to local parts of the body for relief of pain or the strengthening of such nervous portions of the body as have become debilitated and are the seat of disease or nervous prostration.

25 With these objects in view my invention consists in certain features of construction and combinations of parts, that will be fully described in the annexed specification and indicated in the claims.

30 Referring to the drawings, Figure 1 is a perspective view of the belt with two of the attachments in position. Fig. 2 is a transverse section of the belt through one of the binding-posts provided for the attachment of
35 auxiliary attachments which transmit the electrical energy to different local seats of pain in the body, said section being taken on the line $x x$, Fig. 1. Fig. 3 is a side elevation of the battery removed from its sheath or
40 belt. Figs. 4, 5, and 6 are detached views of important details of the flexible battery. Fig. 7 is a longitudinal section of one of the current-conveying auxiliary appliances used in conjunction with the galvanic-belt battery.
45 Figs. 8 and 9 are enlarged detached views of the main poles of the galvanic-belt battery. Fig. 10 is a perspective view of another device for the transmission of battery-current. Figs. 11 and 12 represent other peculiarly-formed elec-
50 trodes employed for application to cure local

ailments of the body. Fig. 13 shows details of fastening devices.

A is the belt or sheath which contains the flexible electro-galvanic battery. It is made of any proper material—such as silk, leather, 55 or fibrous material that is rendered water-proof, or enameled cloth.

As will be seen in Fig. 2, the belt is made with an extension fold or pocket that extends throughout its length, and thus affords a convenient receptacle for the flexible electro-galvanic battery B, which may be readily inserted in place and removed therefrom when necessary to renew acidulation or to cleanse the battery. In Fig. 3 the complete battery 65 is shown, and the parts enlarged are exhibited in detail in Figs. 4, 5, 6, 7, and 8.

The battery consists of a series of galvanic piles, each composed of a zinc plate and a corresponding copper plate. These are preferably made of rolled sheet metal cut or struck into form. 70

As seen, the elements of each pile are made rectangular. I do not limit myself to such a shape; but it is preferred, as affording greater 75 surface area and more compact form.

Between each pair of elements a porous pad—such as felt, cloth, or other fibrous material of proper thickness—is placed. The plates of copper and zinc are removably secured together by the split key f , which is introduced through the slots e'' , made in the plates near their center, and also inserted through a loose sleeve, m , which is located in a suitable orifice, e' , formed in the porous pad 85 8, a washer, n , being placed over the projecting ends of the key f , and these ends turned over it, as shown in Fig. 4, as at G. The whole of the parts are thus removably secured together. 90

In order to afford a hinge-joint between each battery-pile, one of the plates 6 of each pile is perforated to receive the bent loop k , which loops are made of copper wire, and have their bow portion projected beyond the edge 95 of the pile, so that the flat sheet-metal hooks k' may be hooked over the wire loop to produce a hinge-joint between adjacent piles of the battery.

It should be further explained that the 100

sheet-metal hooks h' are slotted, as at e'' , at proper points, to permit them to be secured in place on the plates of the piles by the split keys f , which bind these several galvanic piles together, so that by these simple and efficient appliances the entire series of individual galvanic batteries are electrically and mechanically connected, and a pliable chain is afforded which will readily adapt itself to the form of the body, and from its peculiar manner of construction all projections from the surface of the individual galvanic piles are avoided and a smooth exterior secured.

At the terminal ends of the flexible battery the pole-pieces $C C'$ are removably attached. They consist of metal disks, which are shown enlarged in Figs. 8 and 9. $C C'$ represent the circular plates, which are the main poles, C being the positive and C' the negative pole-piece; or they may be reversed by change of the elements in connection therewith. The pole-pieces $C C'$ are located on the inner surface of the belt A and removably held to have contact with the body of the wearer by the clip-plates $d d'$, as shown in Figs. 1 and 3.

At swivel-eyes are introduced in the hinged connections of adjacent piles to permit the insulated conductor G' to be removably attached by a snap-hook, s , the opposite end being similarly secured to the ring v , which is in engagement with the terminal of the battery and connects it loosely to the pole-piece C' ; or the conductor-wire may be changed to the opposite end and be hooked to the pole-piece C .

By the use of the flexible electrical conductor the current generated in the battery may be restricted in volume and consequent energy, as the connection that is established will "short-circuit" the current, and by cutting out some of the piles or cells the quantity of electricity may be restricted and controlled to suit the needs of the system or parts to be treated.

The flexible loop E is designed to be used to convey gentle currents of electricity to the generative organ of the male sex, and thereby restore nervous force, and also aid in the cure of private weaknesses and diseases incidental to mankind when improper usage or abuse of the parts has been had, which results in organic weakness or decay.

The electrode K is intended to be employed to direct electrical currents over the abdominal wall to heal rupture. To this end the device consists of a tubular metal shank, T , which is curved, as shown in Fig. 7. Upon one end of this stem or shank a curved piece of metal pipe is secured to produce a crotched end, T' .

At the point of junction of the pieces $T T'$ there is affixed a disk, L , preferably coated with silver, which may be applied to the parts affected. The electrode K is removably secured to the battery B by means of the hooks $o o' o^2$, which are fastened to the ends of the

main stem T and the forked piece T' . These hooks are made to engage the binding posts or sockets a , which are attached to the battery, as shown in Fig. 2. When the device K is in connection with the battery, it may be adjusted to seat the silver disk L over the rupture, and thus transmit the electrical current directly to the ruptured part of the abdomen.

A metal disk, F , is suspended by an insulated pliable metallic conductor from the series of connected galvanic piles B at any convenient point, and is employed to convey the electrical current force to the feet or lower limbs of the person wearing the battery.

In order to afford means for the transmission of the electrical current to the forehead or back of the neck of a patient who is wearing the galvanic belt, an electrode, M , is furnished. This consists of a metallic plate, preferably of silver, which is fastened to the felt or other porous pad Q' in any suitable manner. This electrode is held adjustably upon the parts affected, and to which electricity is to be applied, by the elastic band Q , it being moistened when applied to render its surface capable of conducting the electricity and diffusing it evenly over the parts it is applied to. When the electrode M is used, it is electrically connected to the battery B by an insulated wire conductor. (Not shown.)

In Fig. 11 is shown an electrode which is adapted to convey a steady and gentle electric current to the anus of a patient for the cure of piles. This device is covered by a proper insulating material, as at N , for the purpose of handling the same when applying the moistened sponge 3 to the affected parts, and thus submit them to electrical treatment.

Fig. 12 resembles in general characteristics the device shown in Fig. 11, and is a special appliance or electrode designed to convey the electricity of the battery-belt to the vagina of a female wearing the said battery. It is attached by an insulated wire to the series of piles or battery elements and is applied in an obvious manner.

To render the several electro-galvanic piles B capable of generating electricity, the battery is immersed in a weak acid solution, which will excite the galvanic cells or piles, so that they will instantly become active, and as these are electrically connected their force is cumulative and depends upon the number of elements in circuit, the terminal poles $C C'$ will transmit the electricity to the body of the patient, as they are in contact with the same, and the skin or flesh of the wearer forms a conductor to complete the circuit.

To hold the battery upon the person of the wearer, a flexible strap, S , is provided, which may be adjusted by the buckle c to suit the size of different parties who might use it.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An improved electrode, M , for transmit-

- ting an electrical current to the forehead or back of the neck, composed of an exterior metallic plate, a porous pad, Q', secured to the plate, and an elastic band, Q, also secured to said plate and arranged to encircle the wearer's head, in combination with the battery and an electrical connection between said plate and said battery, substantially as set forth.
2. In an electro-galvanic body-belt, the combination, with a copper and zinc element, of a porous pad placed between them, a split key, *f*, a sleeve, *m*, and washer *n*, substantially as set forth.
3. In an electro-galvanic body-belt, the combination of an outer casing that permits the

removal of a flexible electro-galvanic battery, a pliable electro-galvanic battery which is made up of a series of individual galvanic piles, each of which piles is composed of a zinc and copper plate having a porous or fibrous pad inserted between these elements, a split key, a sleeve or ferrule, and a washer over which the ends of the key are bent, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

SAMUEL DE BAUN.

Witnesses:

F. G. FISCHER,
A. A. HIGDON.