

No. 810,885.

PATENTED JAN. 23, 1906.

E. S. SAIGHMAN.
MESSAGE APPLICATOR.
APPLICATION FILED JAN. 2, 1904.

3 SHEETS—SHEET 1.

Fig. 1

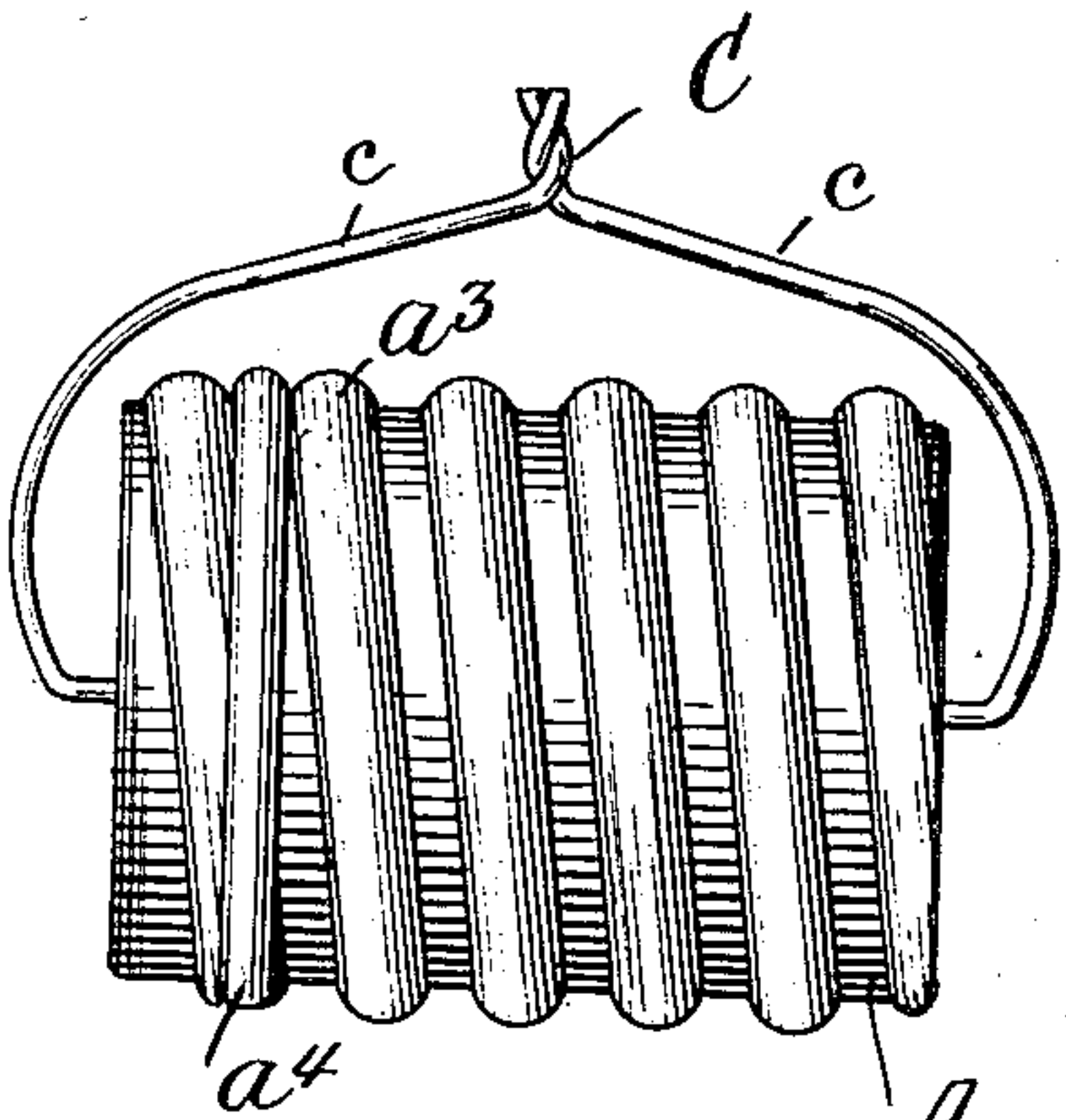


Fig. 2

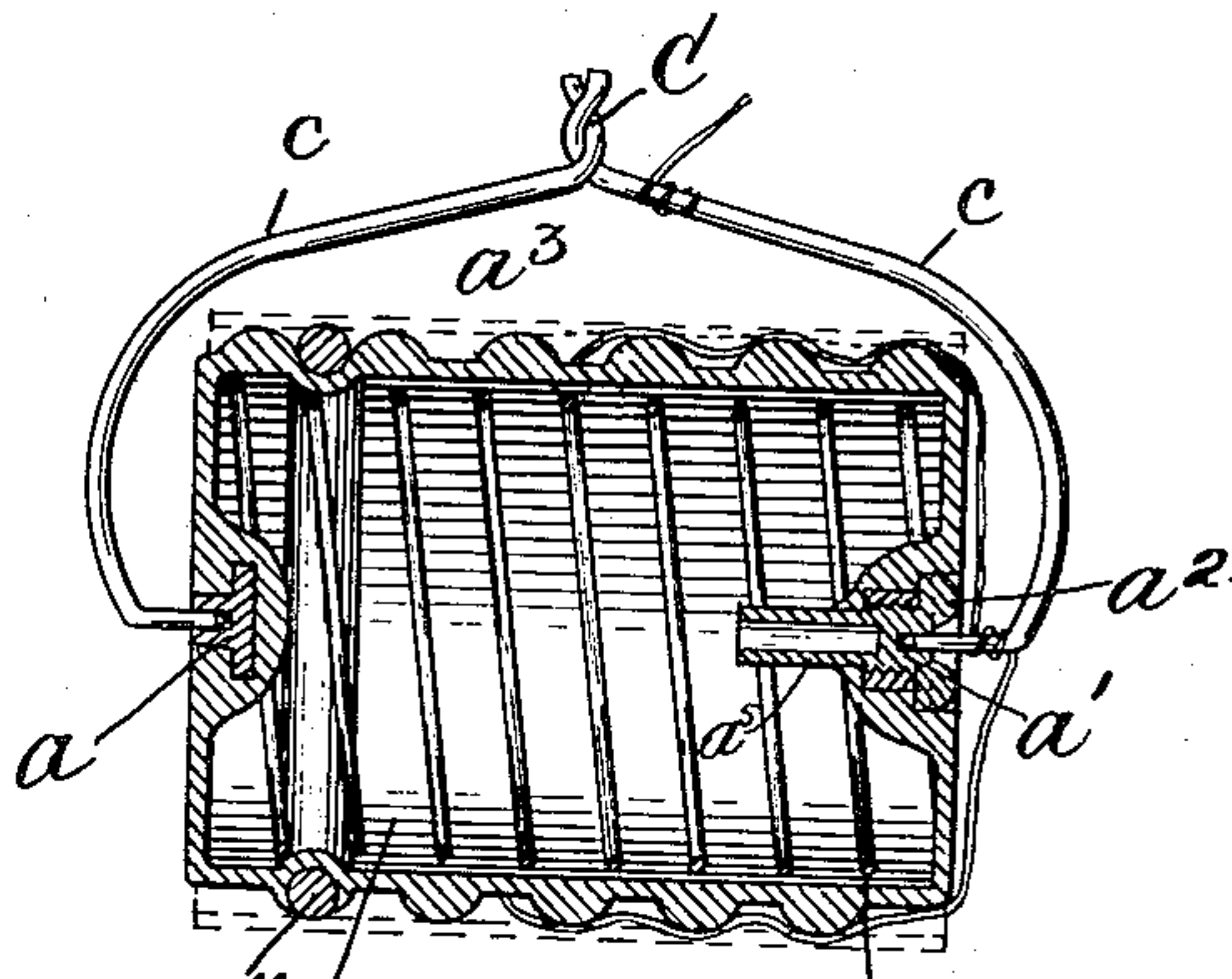


Fig. 3

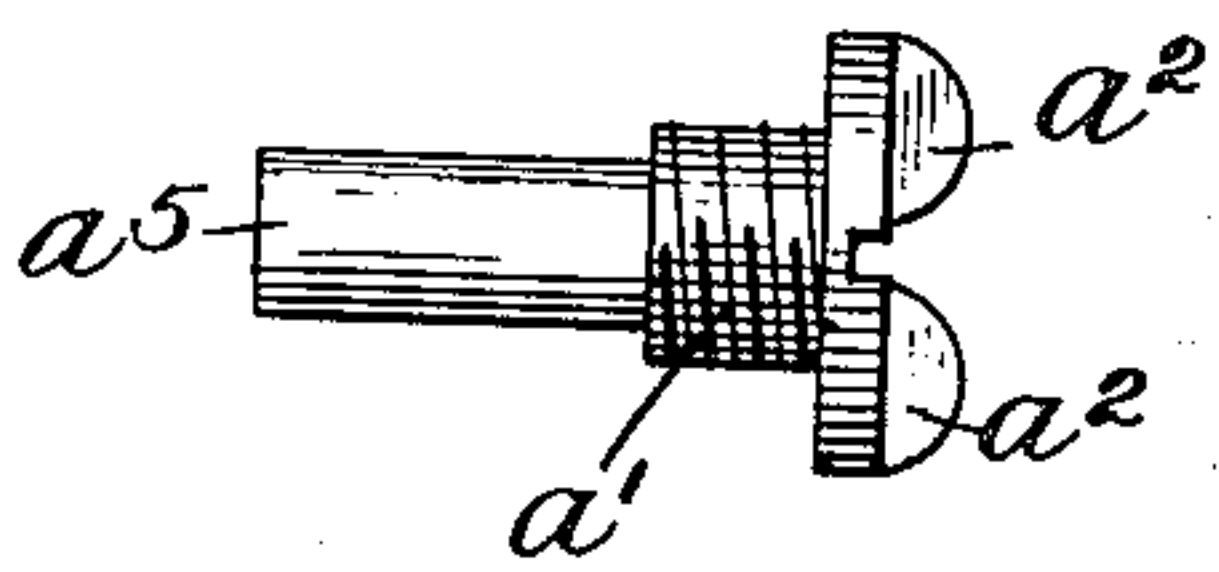


Fig. 4

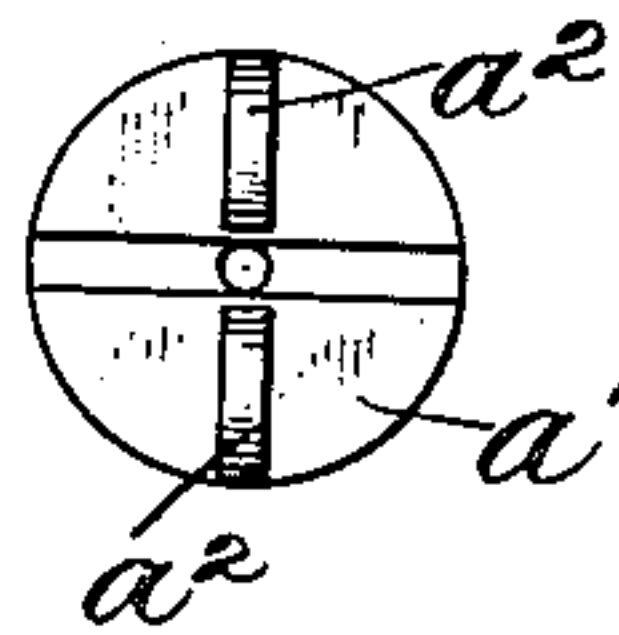


Fig. 5

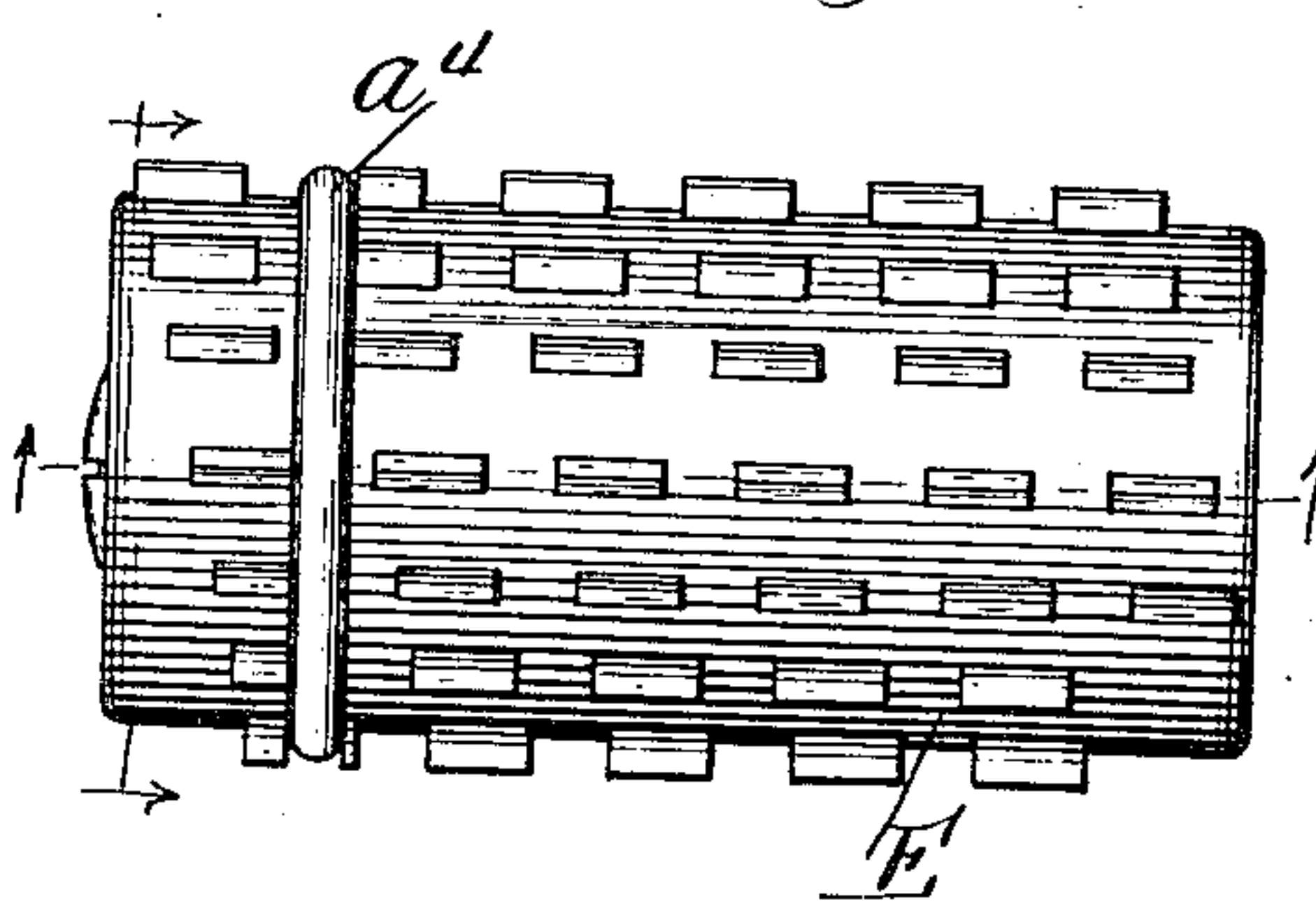


Fig. 6

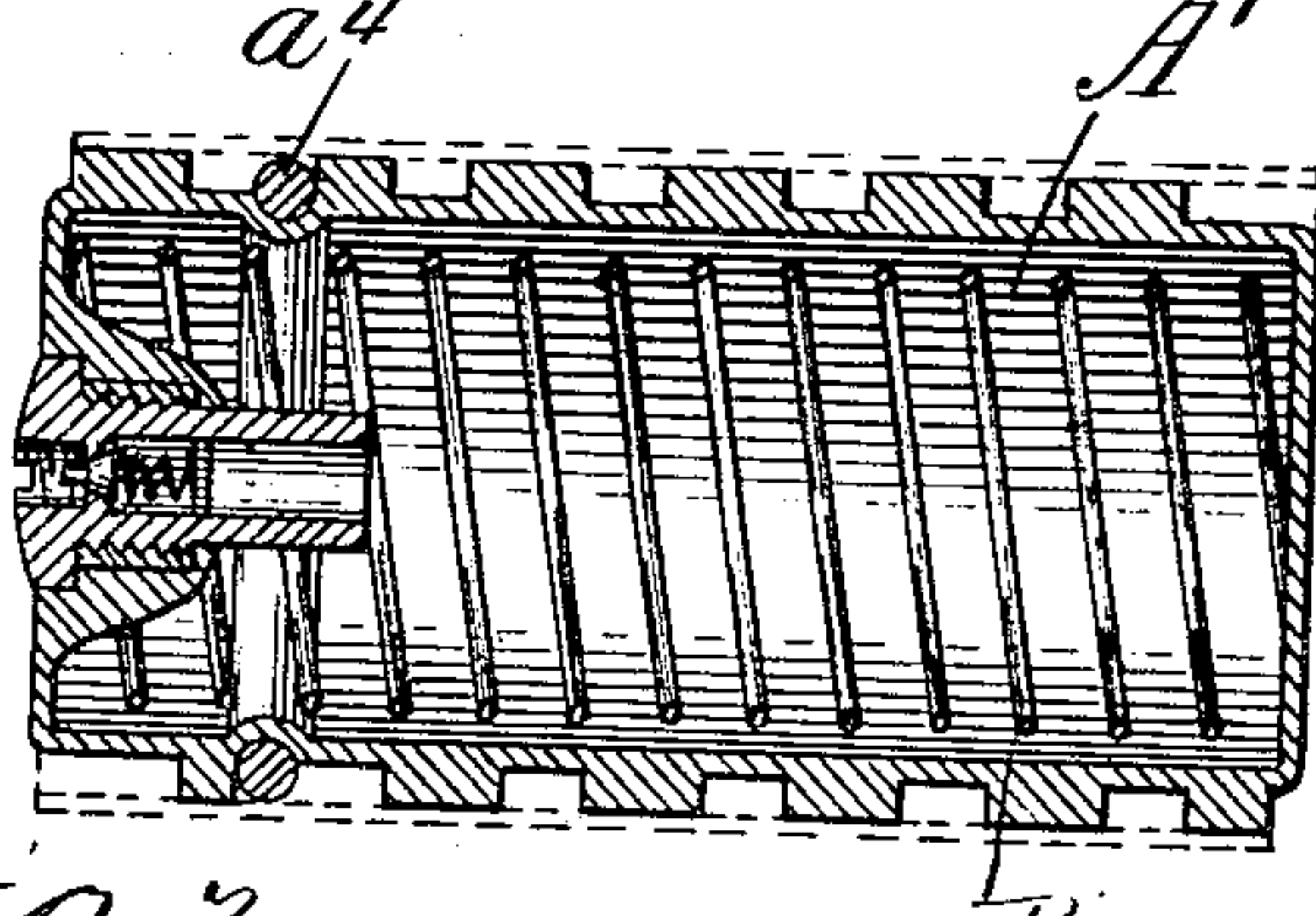
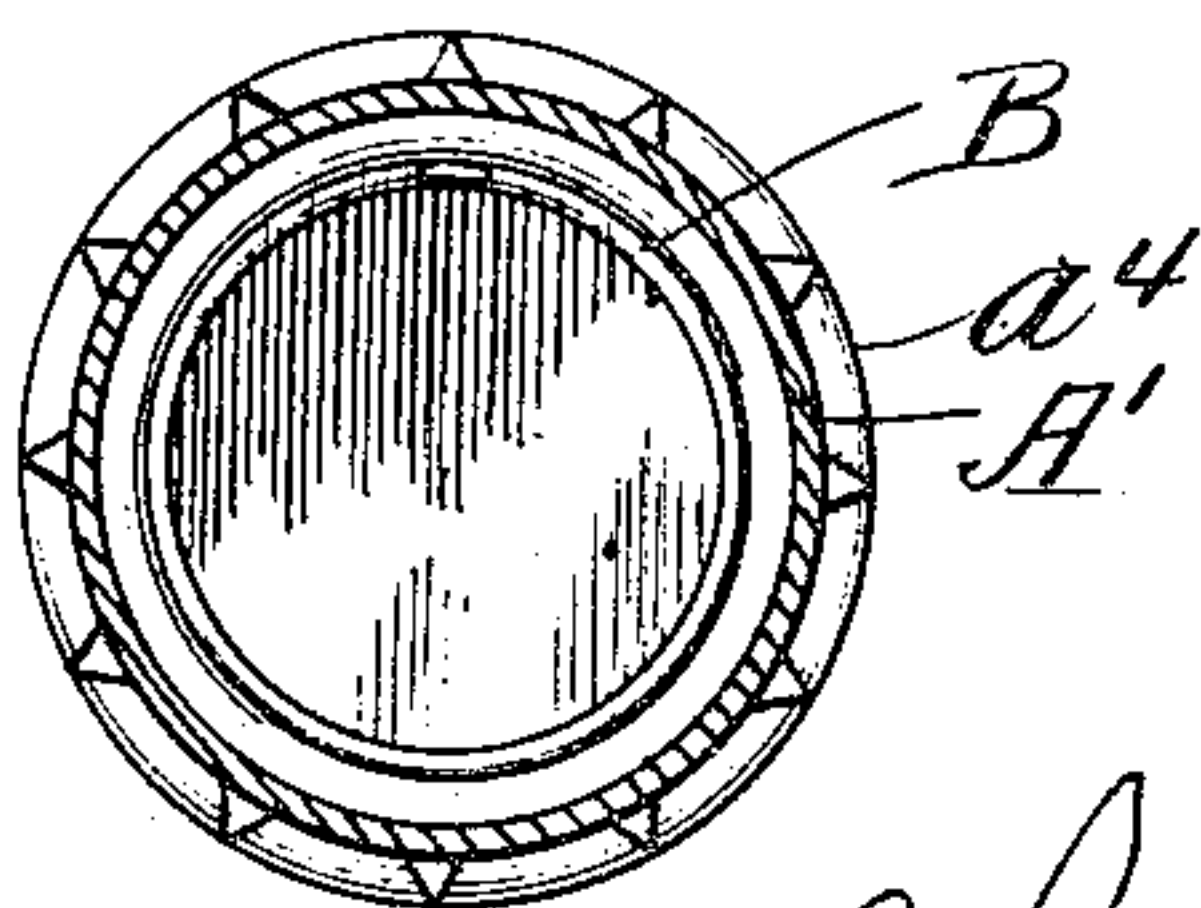


Fig. 7



Witnesses:
Ray White
Harry D. White

Inventor:
Edward S. Saighman
By Charles W. Hill
Att'y.

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3 SHEETS—SHEET 2.

Fig. 8.

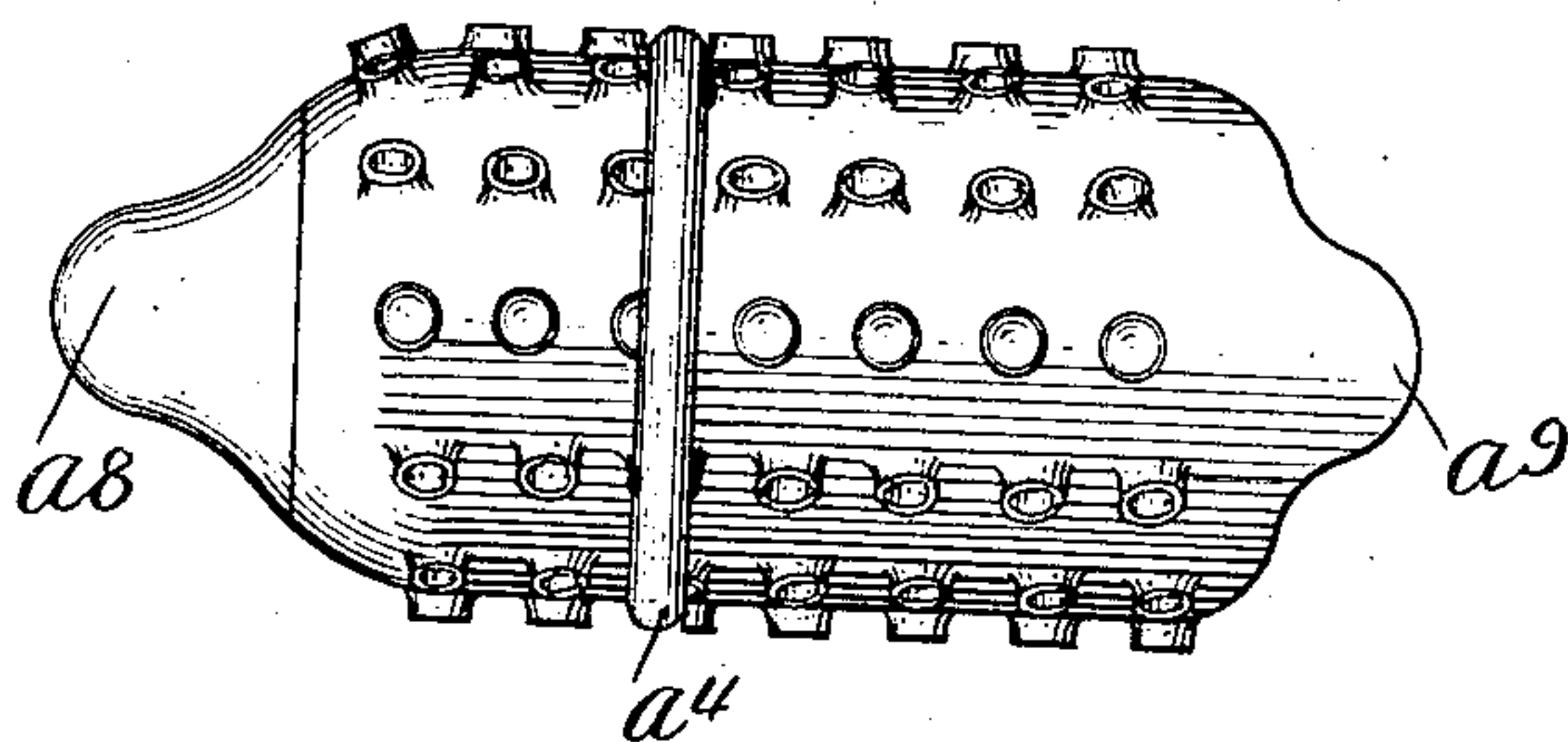


Fig. 9.

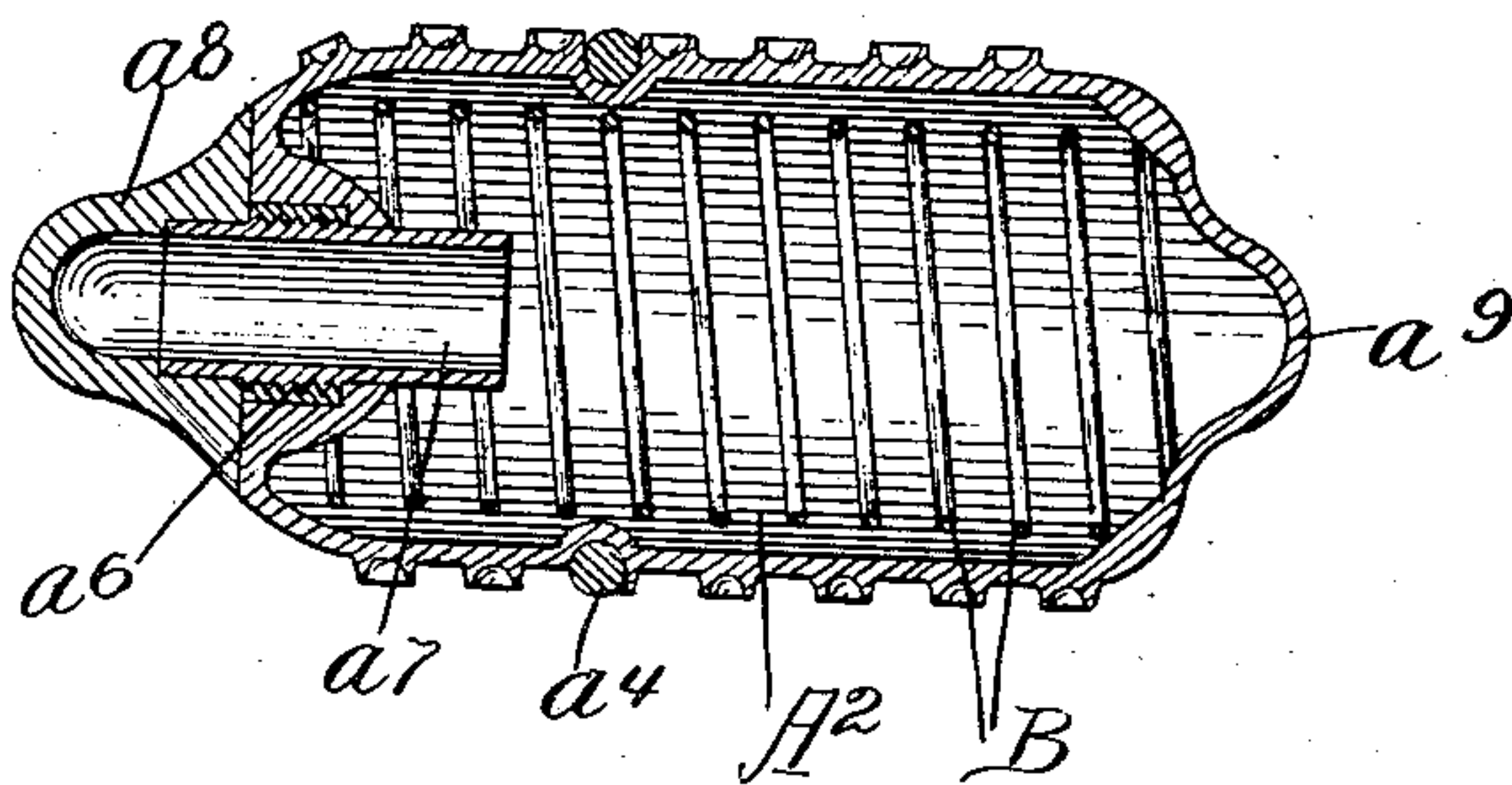


Fig. 10.

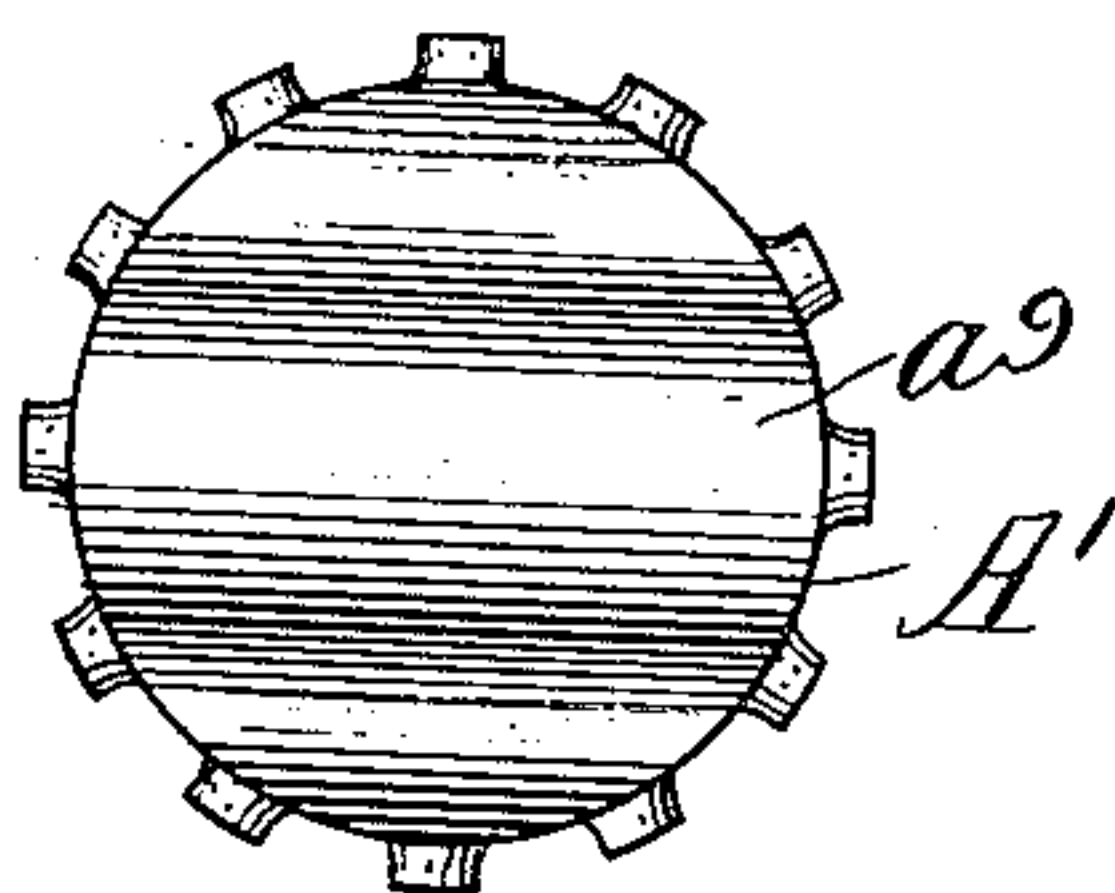
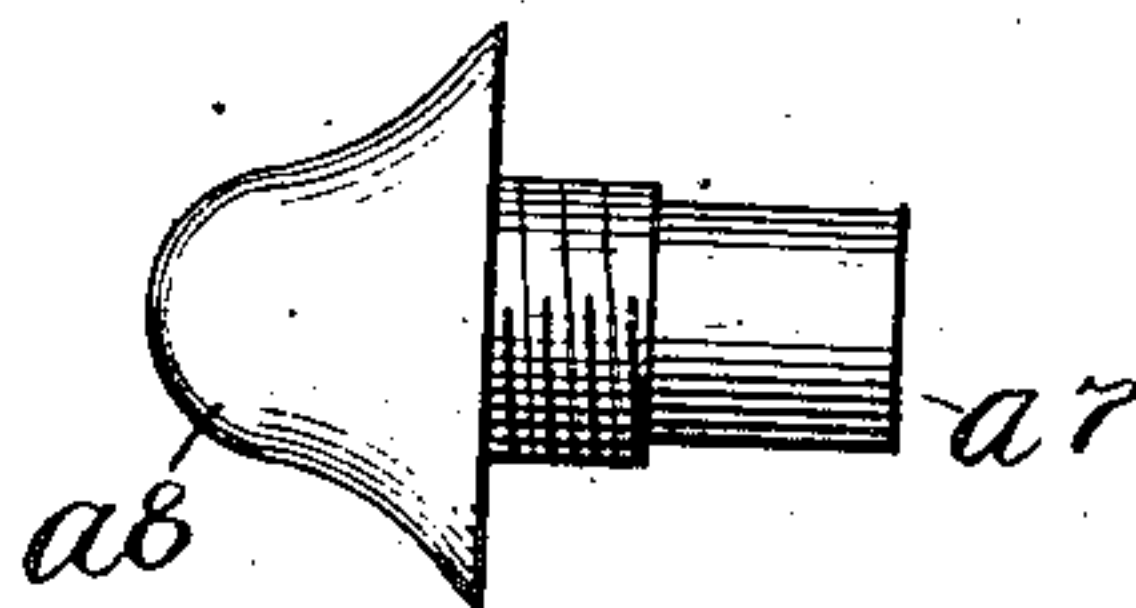


Fig. 11.



Witnesses:

Ray White.

Harry Little.

Inventor:

Edward S. Saighman,
By Charles S. Kier,
Atty.

No. 810,885.

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E. S. SAIGHMAN.
MESSAGE APPLICATOR.
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3 SHEETS—SHEET 3.

Fig. 12.

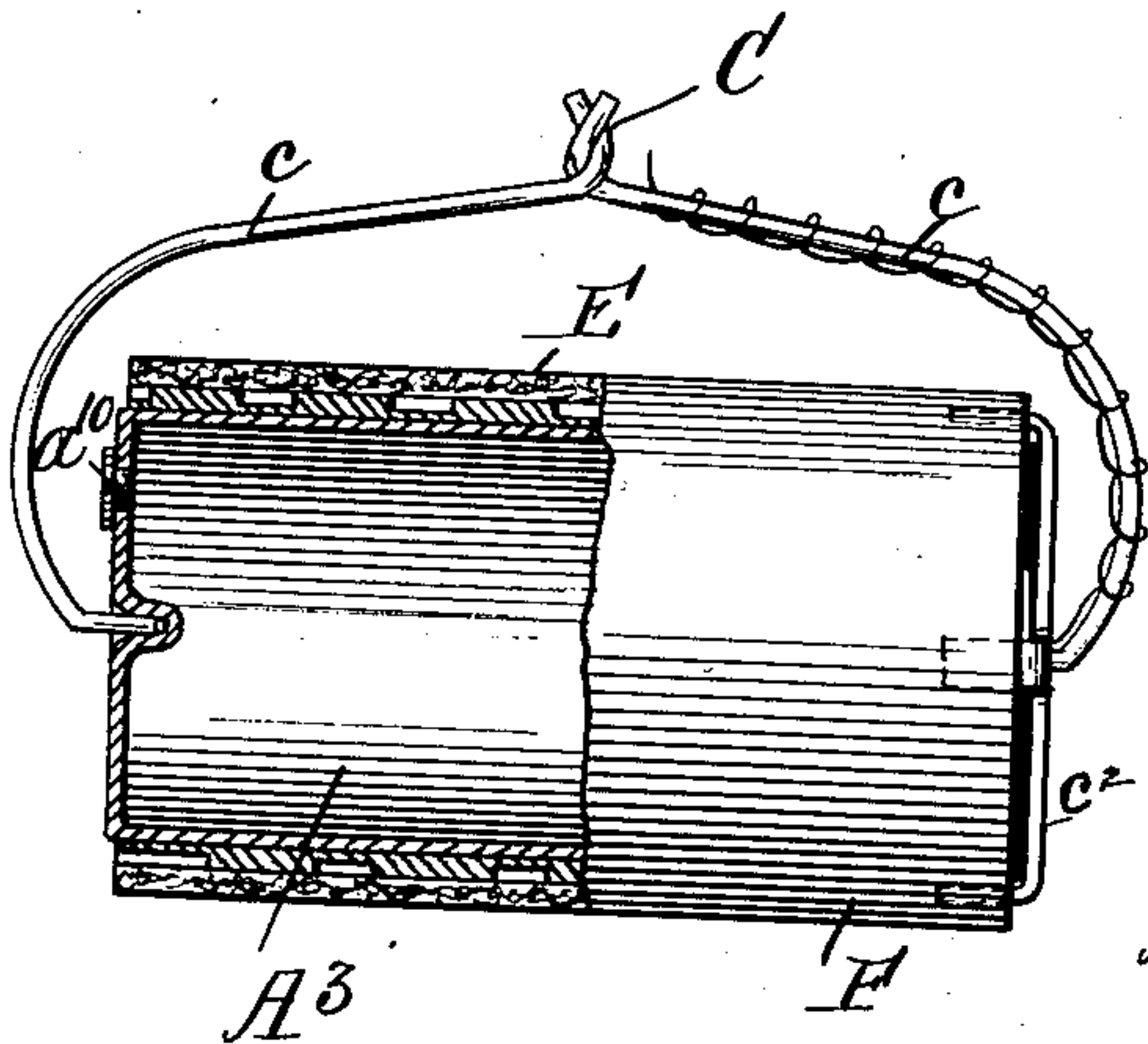


Fig. 13.

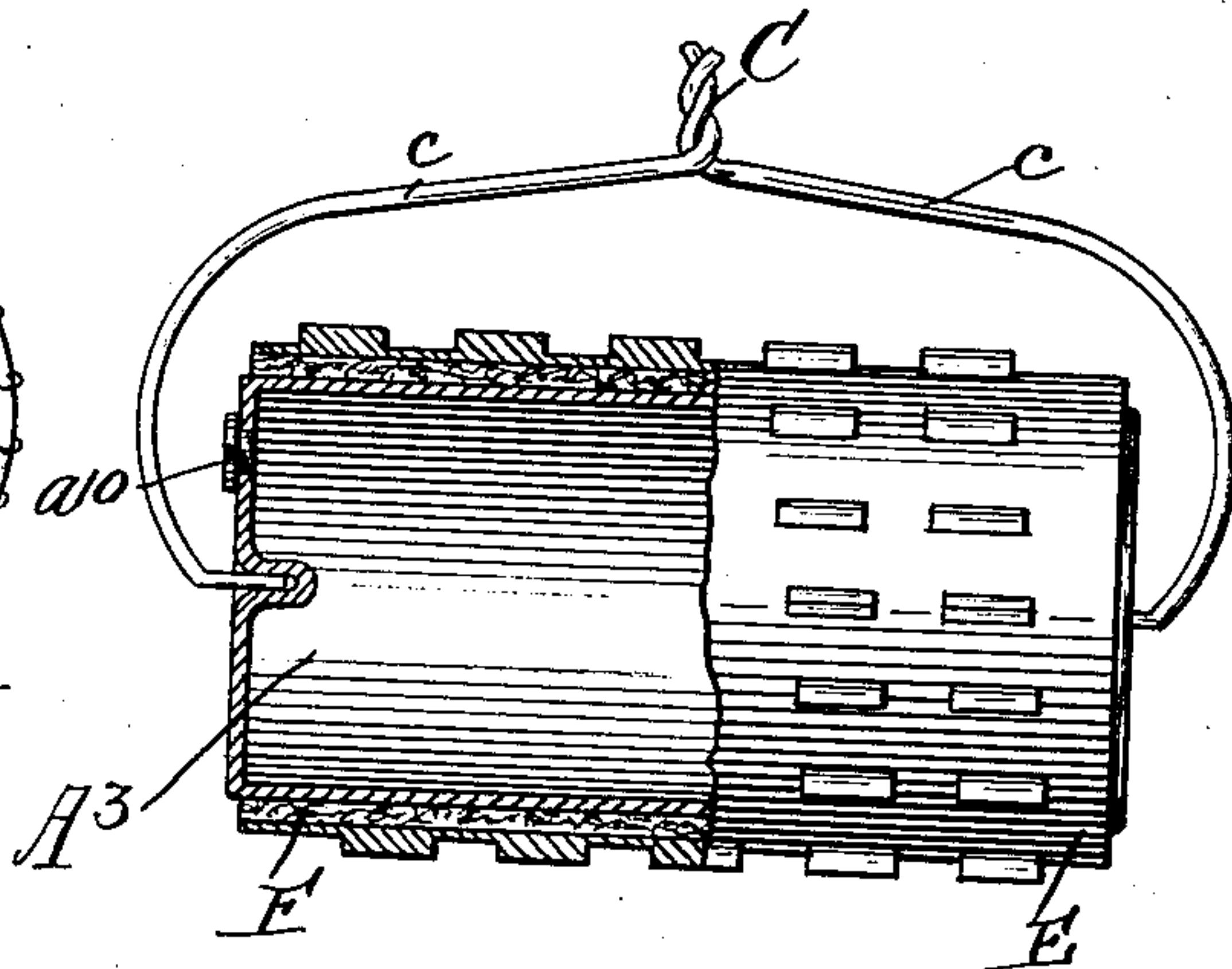


Fig. 14.

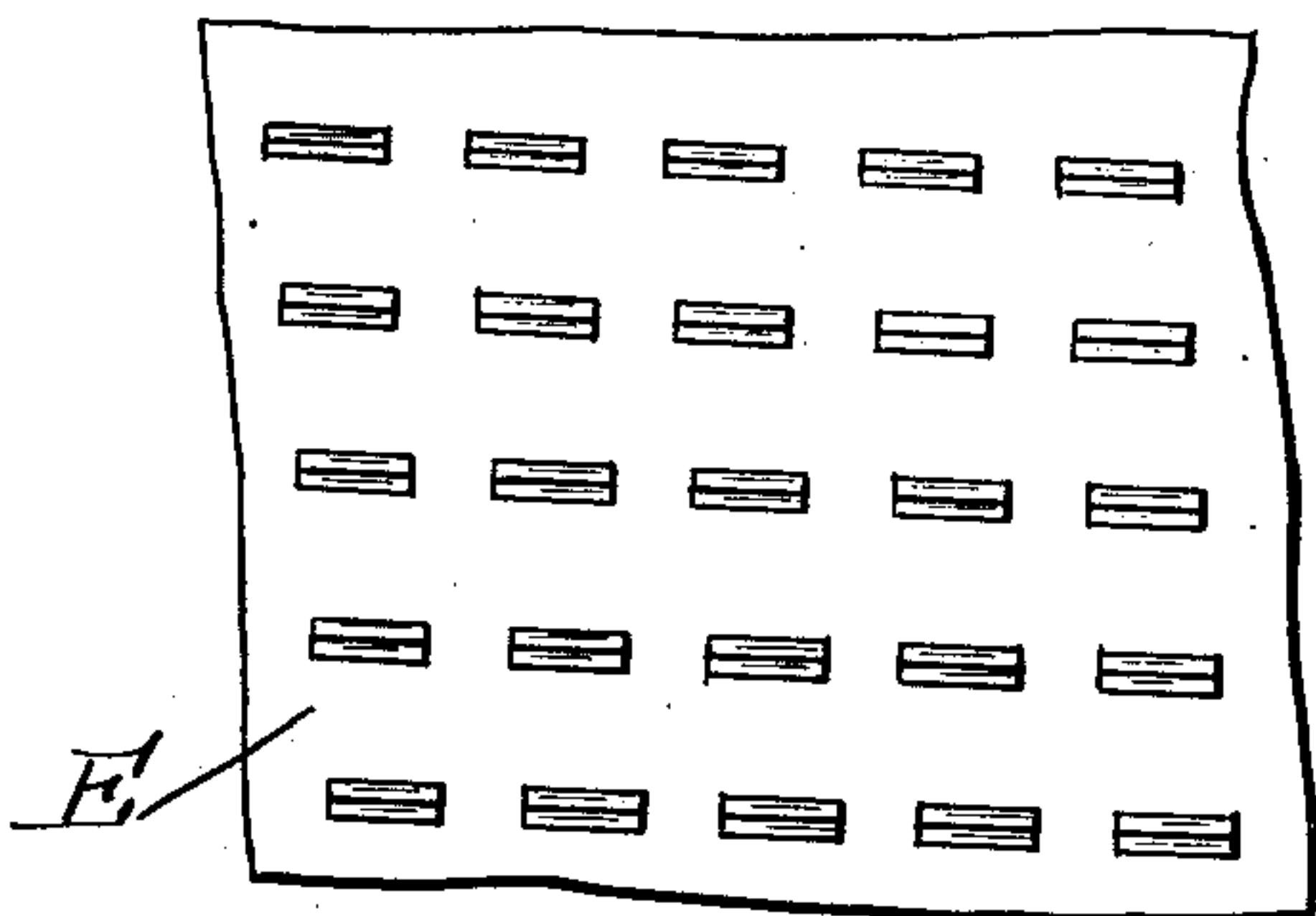


Fig. 15.

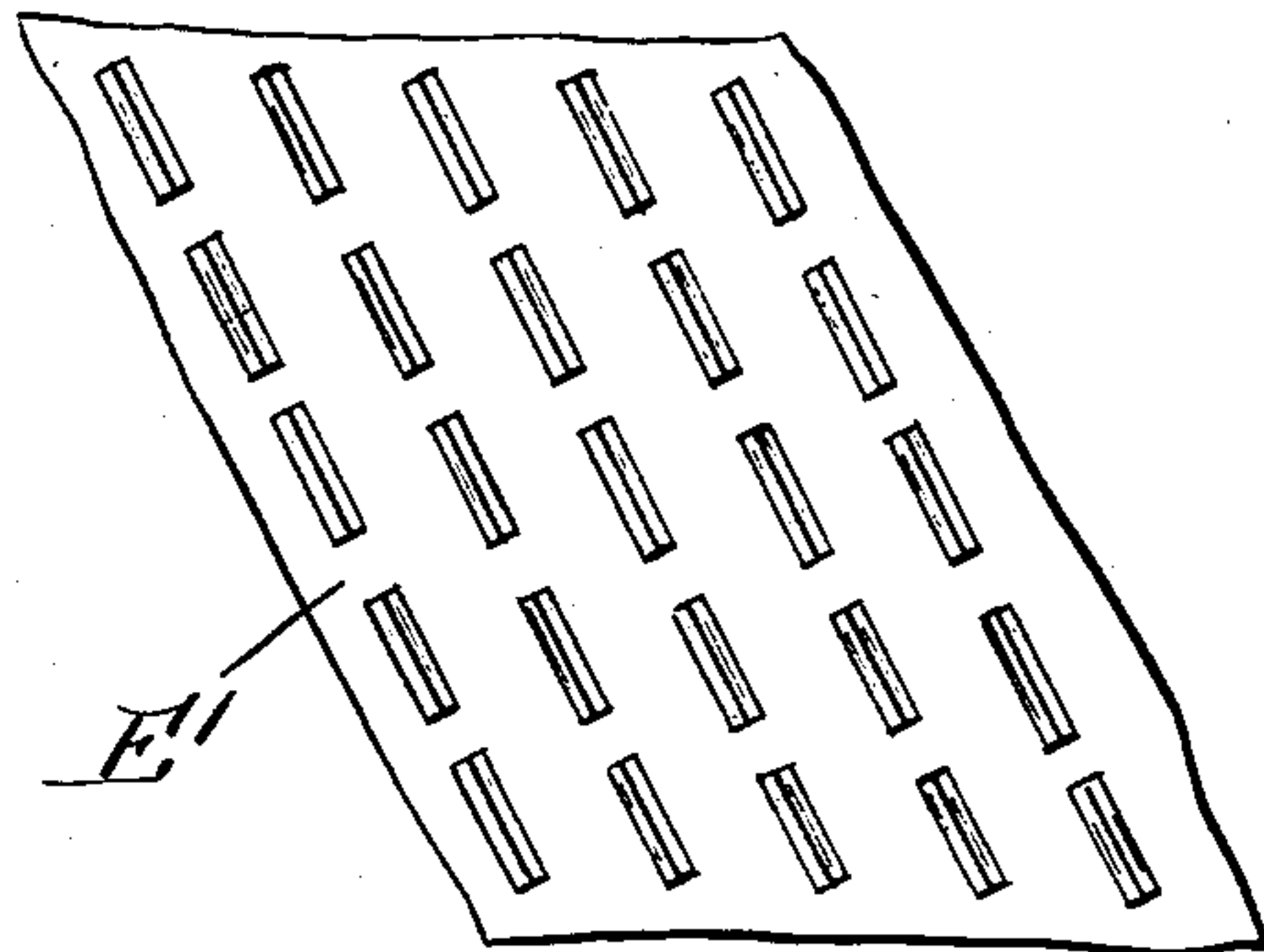


Fig. 17.

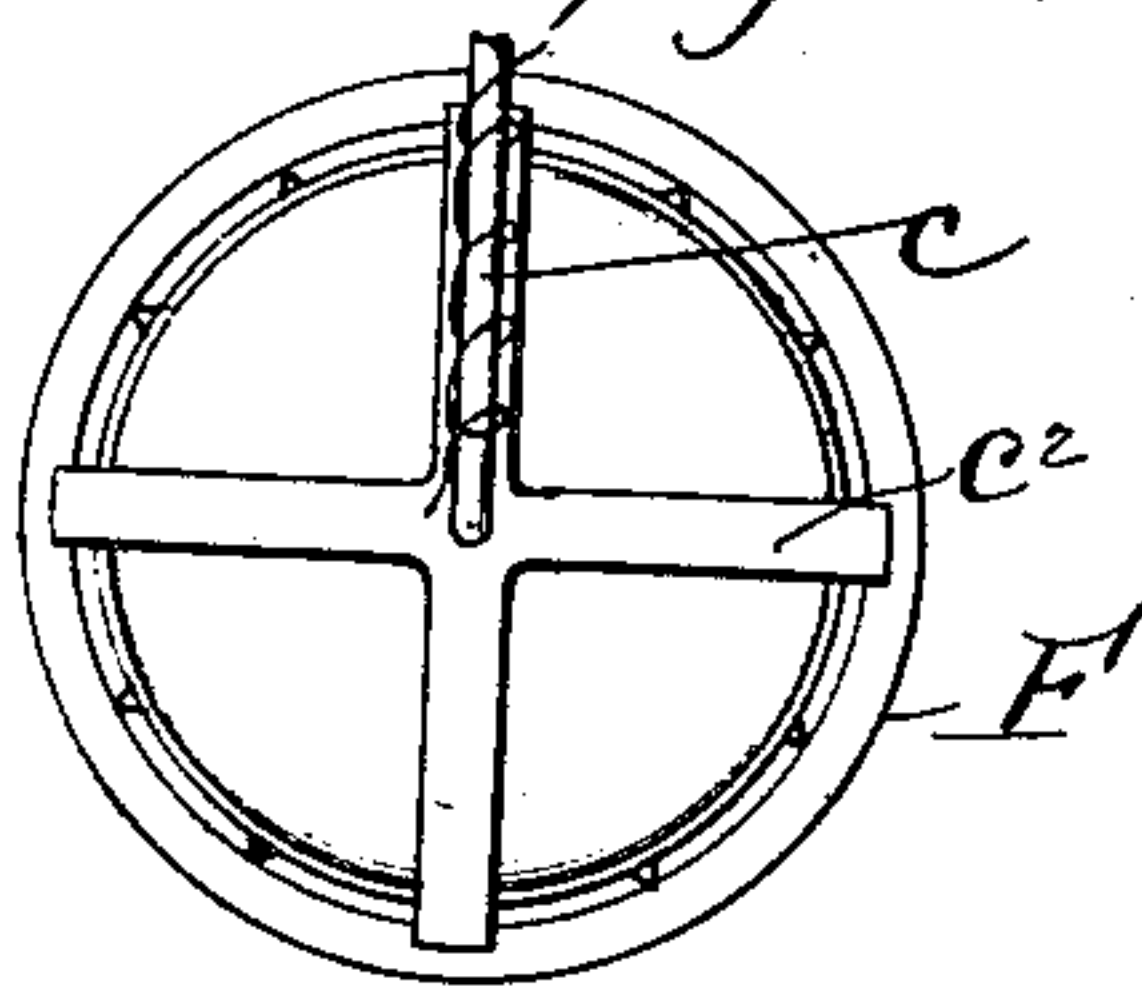
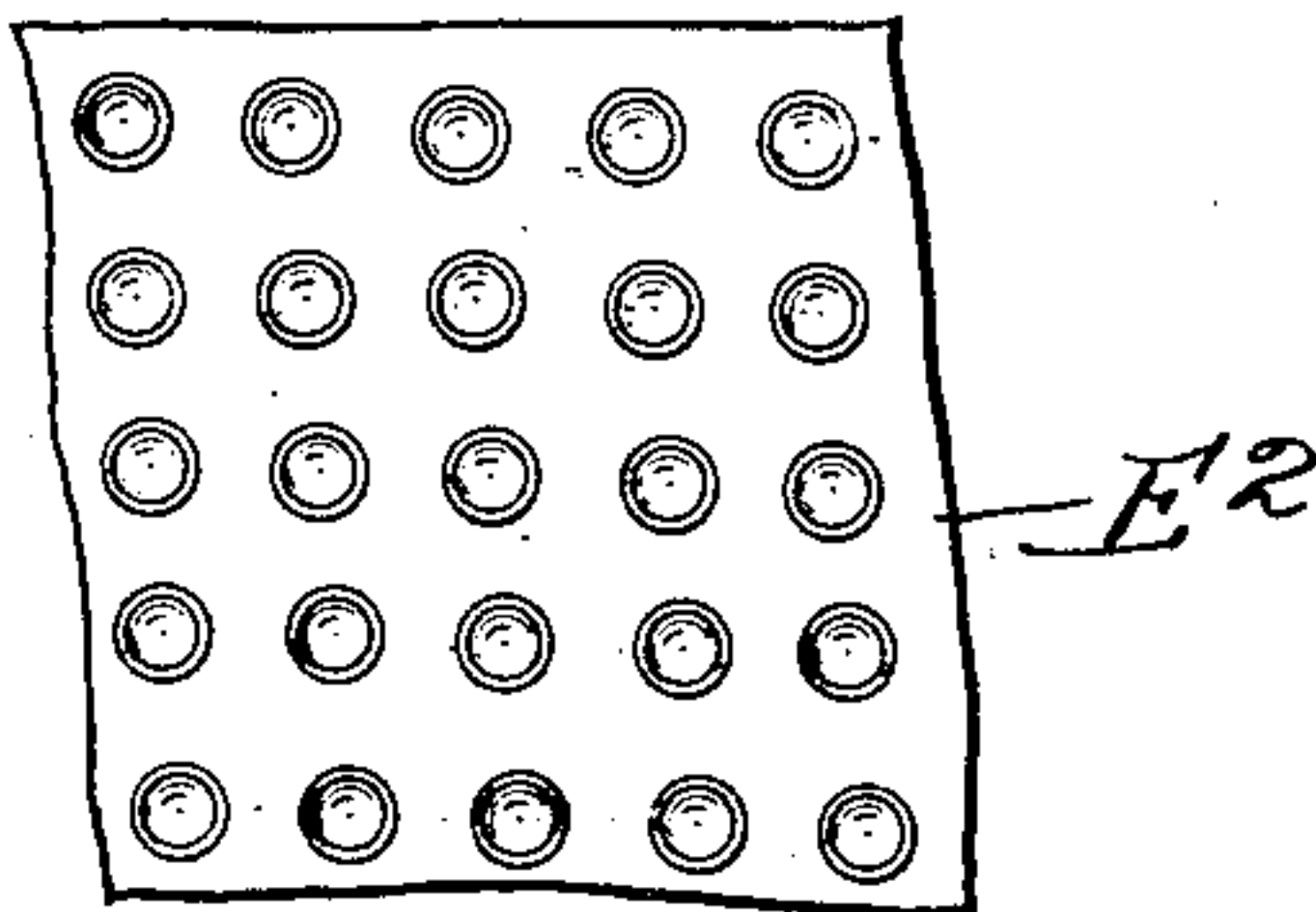


Fig. 16.



Witnesses:
Ray White.
Harry D. White.

Inventor:
Edward S. Saighman,
By Charles W. Hines
Att'y.

UNITED STATES PATENT OFFICE.

EDWARD S. SAIGHMAN, OF CHICAGO, ILLINOIS.

MESSAGE-APPLICATOR.

No. 810,885.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed January 2, 1904. Serial No. 187,473.

To all whom it may concern:

Be it known that I, EDWARD S. SAIGHMAN, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Massage-Applicators; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates more particularly to a resilient massage-roller adapted for use as a massage appliance generally and also to apply external heat or cold and electricity to the surface treated.

Heretofore massage-rollers have usually been of a rigid or comparatively inelastic nature and have been used only for applying friction and pressure upon the surface treated and while useful in their more limited field have been frequently unsatisfactory, owing to the fact that it is often necessary or desirable to obtain other effects than have heretofore been possible with such rollers, thus necessitating the use of other devices in connection with the roller.

The object of this invention is to provide a massage-roller so constructed as to afford great resiliency, enabling the device to fit closely to the parts treated, and adapted not only to apply friction and pressure upon the surface, but also to compress and indent the surface treated, producing maximum effect upon the skin and muscular tissues and also on the nerves and the vascular system simultaneously.

It is also important in obtaining the greatest efficiency of a device of the kind to aid the effect produced by massage by modifying the temperature on the surface treated or by employing thermal effects simultaneously with electrical excitation of the surface treated.

It is also an object of the invention to provide a cheap, simple, and durable construction of the class described capable of general use and adaptable for any of the purposes for which such devices may ever be required.

The invention embraces many novel features; and it consists in the matters herein-after described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a side elevation of a device embodying my invention.

Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a side elevation of the axial screw-plug. Fig. 4 is an enlarged end elevation of the same. Fig. 5 is a side elevation of a modified construction of the roller, showing a different surface structure thereon. Fig. 6 is a longitudinal section thereof. Fig. 7 is a transverse section of the same. Fig. 8 is a view showing a slightly-modified construction of the roller and having the surface thereof covered with suction disks or cups. Fig. 9 is a central longitudinal section thereof. Fig. 10 is an end elevation of the same. Fig. 11 is a side elevation of the screw-plug. Fig. 12 is a view, partly in side elevation and partly in longitudinal section, of a modified construction in which the bag or body of the roller is constructed of sheet metal or other somewhat rigid material and on which are secured a sleeve of resilient material, such as rubber, and an outer covering of fabric. Fig. 13 is a similar view, but shows the fabric within an outer resilient cover of rubber. Fig. 14 is an enlarged fragmentary plan view of a surface conformation of one of the resilient sleeves. Fig. 15 is a similar view of the surface conformation, in which the ribs extend in spiral alinement around the roller and are arranged staggering on the sleeve, though in alinement longitudinally thereon. Fig. 16 is a detail of a sleeve provided with suction-cups similar to those shown in Fig. 8. Fig. 17 is an end elevation of the roller, illustrating one means of affording electrical connection with the surface.

As shown in said drawings, referring first to Figs. 1 to 11, inclusive, the roller as shown is constructed to afford a bag of any suitable resilient material—for example, soft rubber—and adapted to be filled with a fluid of any desired or suitable temperature for the purpose required. Said fluid acts to distend the bag to a cylindric form. Such cylindric form, however, in the constructions shown is normally maintained independently of the pressure of the contained fluid by means of a spiral spring B or the like contained within and fitting the bag.

Referring now to Figs. 1 to 4, inclusive, the bag is constructed of rubber or other suitable material, (indicated by A,) and is of any desired or convenient length or diameter, and is held normally in cylindric form by the interior spiral spring B, which fits closely

therein. Vulcanized into one end of the bag at the axis is a metallic bearing-piece *a*, of metal or other suitable material, having a central socket, and at the opposite end of the bag at the axis is an aperture provided with a screw-threaded bushing, also vulcanized therein and adapted to receive a screw-plug *a'*, complementary with said bushing and which acts as a closure for the cylinder after the same is filled. Said screw-plug is provided on its extremity with wings *a²*, adapting the same to be manually engaged for insertion or removal from the roller, and is also provided with a slot at an angle therewith adapted to be engaged by a screw-driver to enable said plug to be inserted or removed. Said screw-plug is provided at its outer end with a socket in alignment with the socket in the bearing-piece *a*. A handle *C*, of any suitable material, is provided with spring-arms *c*, which engage, respectively, in the sockets of said bearing-piece and in the screw-plug and afford means for actuating the roller and adapt the same to be applied to the surface to be treated with considerable pressure, if desired. Said bag or roller may be of any desired surface conformation. Conveniently, however, the surface contour comprises a rib or ribs arranged spirally around the periphery of the roller, such ribs, as shown in Figs. 1 and 2, forming a substantially continual thread from end to end of the roller and indicated by *a³*. A strong band of rubber or other suitable material *a⁴* is passed around said roller after the same is filled or inflated and acts, together with the elongated tubular end *a⁵* of the screw-plug *a'*, to increase the interior tension in the bag or roller and has the same effect as filling the bag to a considerable pressure. The spring-arms *c* of the handle also exert considerable pressure on the ends of the bag, increasing this effect. If preferred, where constructed, as shown in Figs. 1 and 2, with a continuous spiral extending around the same the spring *B* may be exterior to the bag and inclosed within said spiral ribs.

In the construction shown in Figs. 5, 6, and 7 the handle *C* is omitted, and pressure is applied to the roller directly by the hand of the operator. The bag *A* is constructed, as before described, with an interior spring *B*; but the bearing-piece *a* is omitted from the end center. The ring *a⁴* is employed, as before described, to increase tension in the bag, and upon the periphery of the bag is provided peripheral lines of longitudinally-aligned V-shaped ribs, which as the roller is applied indent the skin, applying pressure not only on the superficial structures, but owing to the sharp edges of said ribs applying considerable pressure upon the underlying muscles, veins, and nerves.

The construction shown in Figs. 8 to 11, inclusive, is similar to that shown in Figs. 5

to 7, with the exception that the bag or roller therein shown is provided with rounded ends in part to aid in increasing tension in the bag when under compression. A different surface structure is also shown, which of course has a different effect when in operation. This construction comprises the bag *A²*, of rubber or the like, which is also provided with an interior spring *B*, fitting closely therein. A strong resilient band *a⁴* extends around the bag and acts to resist circumferential dilations, as before described. A threaded bushing *a⁶* extends into one end of the bag, as shown in Fig. 9, adapted to receive therethrough the pipe end *a⁷*, which is threaded for a part of its length to engage said bushing and is provided on its outer end with a hollow cap of soft rubber *a⁸*, vulcanized thereto. The rubber of the bag extends below the bushing *a⁶* and inwardly and positively engages against the pipe *a⁷*, forming a packing therefor, and, together with the flange of the cap *a⁸*, packs the joint surrounding said bushing, effectually preventing the escape of any fluid from the bag. The opposite end of the bag is provided with a transverse rounded projection, extension, or pocket *a⁹*, capable of considerable dilation, so that when abnormal pressure is applied upon the surface of the bag or roller the fluid contained therein acts to partly dilate said cap *a⁸* and the extension *a⁹*, thus changing the longitudinal contour of the roller without materially changing its cylindric form, and also afford rounded ends for massage application. The surface structure of the bag *A²* is shown in this instance to comprise a plurality of spirally-arranged suction or vacuum cups of small size, which as the device is rolled back and forward over the surface treated continuously apply suction thereto, exciting and stimulating the skin and opening the pores thereof. The spiral arrangement of the suction-cups and the longitudinal alignment thereof on the roller, as shown in Fig. 8, insures that in rolling the same over a given surface all portions thereof contact with and are affected by said cups equally.

In the construction illustrated in Figs. 12 to 17, inclusive, the roller, as shown, comprises a central core or mandrel *A³* of more rigid material than soft rubber, such as sheet metal. In the construction shown said core or mandrel affords a receptacle to contain fluid and is provided in one end with a filling-aperture closed by a screw-plug *a¹⁰* and is provided axially in each end or head with a central depression or socket adapted to receive the ends *c* of the handle *C* already described, whereon the roller is rotatively supported and whereby pressure is imparted upon the surface treated. Upon said rollers are secured resilient sleeves *E E' E²* of various surface conformation and constructed of

rubber or any suitable material adapted to adhere closely to the roller when in use, but capable of being removed therefrom to permit the substitution of other sleeves when desired. The sleeve E (shown in Fig. 13) is similar in surface conformation to that shown on the roller illustrated in Fig. 5, before described, the surface being provided with longitudinally-alined short V-shaped ribs arranged around the periphery of the sleeve in a spiral. A sleeve of fabric F is secured, as shown in Fig. 12, outside the resilient sleeve E. This fabric is partly supported on the surface projections of the sleeve E and increases the resiliency of the contact-surface in treatment and, furthermore, admits of the application of hot or cold water or medicament, as preferred, directly to the skin. This is accomplished by dipping said roller, with the resilient sleeve and the fabric sleeve arranged as described, into the fluid of suitable temperature. The fabric sheet or sleeve acts to retain enough of the fluid for the treatment, steaming, heating, or refrigerating the tissues treated while applying massage thereto. Obviously if the cylinder A³ is filled with hot or cold water the heat therefrom in itself will impart substantially the same temperature to the fabric sheet inclosing the roller, adapting the device for continuous use at the desired temperature. In the arrangement shown in Fig. 13 the fabric sheet or sleeve F is secured on the cylinder, and the resilient sheet E is secured externally of the fabric, thus retaining the resiliency of both sleeves, while allowing the surface conformation of the sleeve E to have its full effect, as before described with reference to Fig. 5. Said sleeves or sheets may be of any desired surface conformation, and it is not essential that where the V-shaped ribs are employed the same extend longitudinally in alinement on the roller. Instead said ribs may extend in alinement peripherally of the roll, as shown in the fragmentary detail illustrated in Fig. 15, in which instance the ribs extend spirally around the roller and are arranged staggering with each other, thus applying pressure transversely of the travel of the roll as the same revolves. Said sleeve may also be constructed to provide a plurality of suction-disks arranged in any desired manner, as shown in Fig. 16 and indicated by E², and, if preferred, projections or depressions of any shape may be provided in any manner either permanently or removably upon the periphery of the roll to effect an indentation and maximum pressure upon the treated surface during operation.

The operation is as follows: The bag or cylinder being filled with water or other material adapted to maintain its temperature for a considerable period of time and having a surface configuration adapted for the purpose for which used in the particular instance is applied vigorously upon the surface to be

treated. Pressure is produced in the direction of the movement of the roller, and owing to the peripheral and spiral arrangement of the projections on the surface pressure and consequent movement is produced at an angle with the movement of the roller. In other words, if pressure is applied to the muscular tissue, we will say, in the direction of the movement of the roller the spiral arrangement and form of the projections on the roller serves to force the blood and other fluids adjacent the surface in a direction transversely of the path of the roller. Said projections tend to massage and excite the structure treated to a much greater depth than is possible with appliances for the purpose as ordinarily constructed and may of course be provided either on the roller, the resilient, or the fabric sleeve, as preferred. Furthermore, owing to the fact that a sleeve of fabric or other suitable material may be drawn over the roller, as shown in Fig. 12 and in dotted lines in Figs. 2 and 6, the hot or cold water or medicament may be applied directly to the surface by moistening the fabric-sleeve therein and applying the same directly. It is obvious that in this manner the utility of the surface configuration of the roller or sleeve is preserved, inasmuch as the sleeve of fabric thereon does not prevent said projections on the surface of the roller acting in their normal manner. Should the interior of the roller be filled with hot or with cold water or other fluid or material of a desired temperature, the temperature of the outer sleeve F is maintained thereby nearly constant. Should it be desired to apply electricity, this may readily be accomplished by connecting a conductor with the handle C, from whence it is conducted by any suitable conducting medium c², which, as shown, comprises a relatively thin spring-clip adapted to bear against one of the heads and contacting with said handle and the ends of which extend beneath said moistened sleeve F. Any other suitable connection for this purpose may be used, however, and obviously the device may be used either with or without electrical connection, as preferred. Said sleeves may be constructed of any material suitable for the purpose and in any desired manner and provided with surface projections of any preferred form; and heat may be applied or the temperature of the roller may be varied either by filling the same with a fluid or other material of appropriate temperature or by immersing the same in water of the desired temperature, and many details of construction may be varied without departing from the principles of this invention.

I claim as my invention—

1. A roller for the purpose specified comprising a cylindric roll having a resilient surface embracing projections arranged peripherally thereon, a resilient band adapted

to compress the peripheral walls thereof and an open-ended tube projecting inwardly from one end of said roller.

2. A roller of the class described comprising a resilient surface provided with spirally-arranged projections thereon, a resilient band around said roller adapted to compress the same, an inwardly-directed projection in one end of said roller and a tube thereon closed at its outer end and opening inwardly of the roller.

3. A resilient roller for the purpose specified having an interior cavity adapted to contain material at approximately a uniform temperature during use, means for applying pressure to said material, a coiled spring in said roller adapted to prevent the side walls thereof from sagging, a handle, bearings therefor seated in the ends of the roller and a plurality of sharp-edged projections arranged longitudinally of the roller adapted to indent the surface treated.

4. A resilient roller of the class described comprising a casing adapted to contain material to affect the temperature of the surface treated, and affording approximately uniform temperature during treatment, a tube projecting through one end wall of the roller and having a closed outer and an open inner end opening into the casing and peripherally and spirally arranged wedge-shaped projections on said roller in longitudinal alignment and acting to depress the portions of the surface treated with which they come in contact.

5. A device of the class described comprising a resilient hollow roller, a bearing embedded in each end thereof, a resilient handle engaged in said bearings, a tube having threaded engagement at one end in one of said bearings and the other end thereof projecting a short distance into the roller and wedge-shaped projections on the outer surface of said roller adapted to depress the surface treated at the points of contact.

6. As an article of manufacture, a roller comprising a resilient receptacle adapted to contain a material adapted to affect the temperature of the roller when in operation, a spiral spring in close contact with the inner circumference of the roller adapted to hold the walls in shape, a filling-aperture in the end of said roller, a screw-plug therein, a tube projecting inwardly from said plug and a sheath of fabric or the like adapted to engage on said roller and acting to apply moisture at a given temperature to the surface treated.

7. As an article of manufacture, a cylindrical roller comprising a receptacle adapted to

contain a material adapted to affect the temperature of the roller when in operation, a plurality of sharp-edged wedge-shaped projections arranged longitudinally of the roller and spirally thereof, an axially-directed tube projecting into the roller from one end thereof and means for compressing said material.

8. A resilient roller of the class described comprising an inner resisting material, a sheath of resilient material such as rubber inclosing the same, projections on the exterior surface of said sheath and an outer covering of fabric separated from the sheath by said projections and adapted to apply moisture to the surface treated.

9. An article of manufacture comprising a cylindrical casing, a bearing in each end thereof, a handle journaled in said bearings, an inwardly-opening tube extending inwardly from one of said bearings, a resilient covering for said casing, a plurality of wedged-shaped projections on said covering acting to indent the surface treated and a fabric engaged on said covering and normally held out of contact therewith by said projections.

10. A device of the class described comprising a resilient cylindrical casing having flexible end walls, an inwardly-directed axially-disposed projection on said end walls, a bearing in each of the same, a resilient handle adapted to engage in said bearings and force the end walls inwardly an integral inwardly-directed tubular extension on one of said bearings and means on the surface of said casing acting to indent the surface treated.

11. The combination with a cylindrical water-bottle, of an exterior resilient covering, spirally and longitudinally arranged projections thereon, an interior resisting medium, and an exterior removable sleeve of absorbent material.

12. A roller of the class described comprising a cylindrical water-bag, a spiral spring within and distending the same, means admitting of filling said bag with water or the like at a preferred temperature, a band of resilient material engaging around said water-bag, peripheral projections on the bag and a sheath of fabric or the like adapted to engage on said roll outside the projections and to apply moisture and medicament to the surface at a desired temperature.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

EDWARD S. SAIGHMAN.

Witnesses:

C. W. HILLS,
A. C. ODELL.