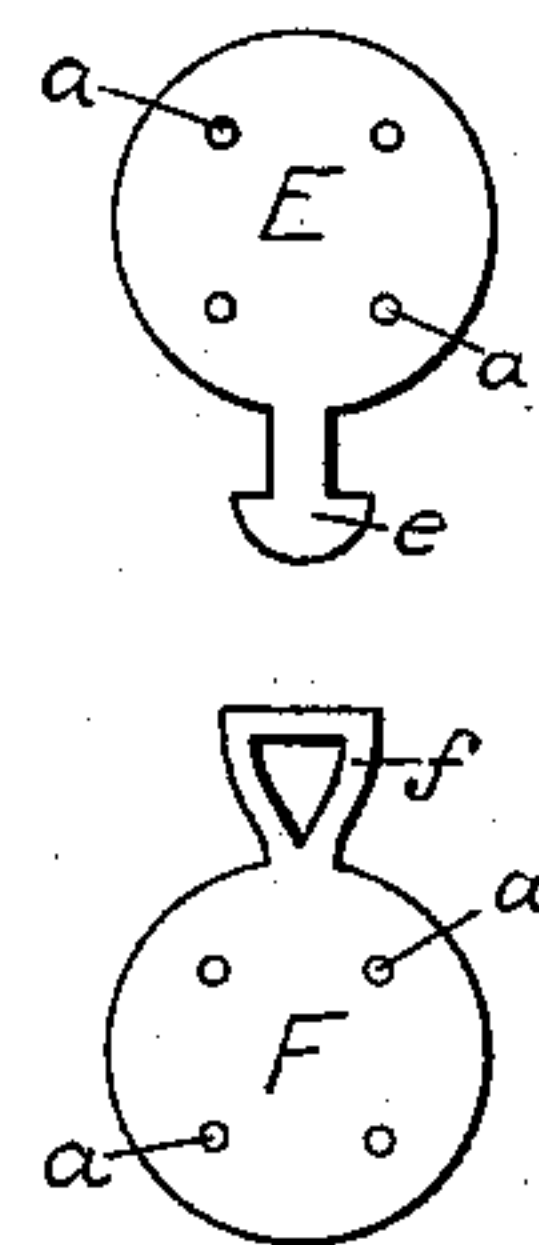
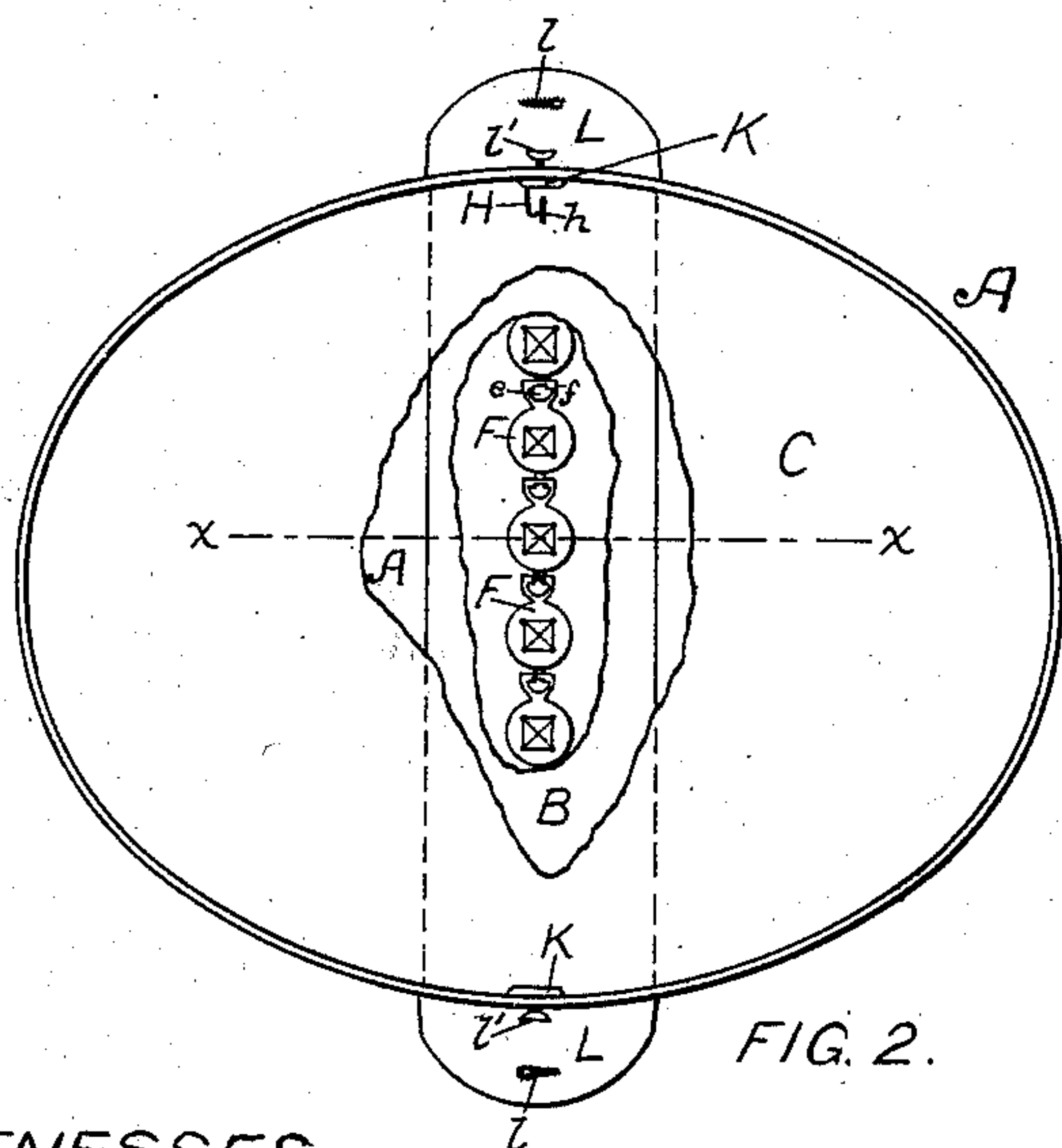
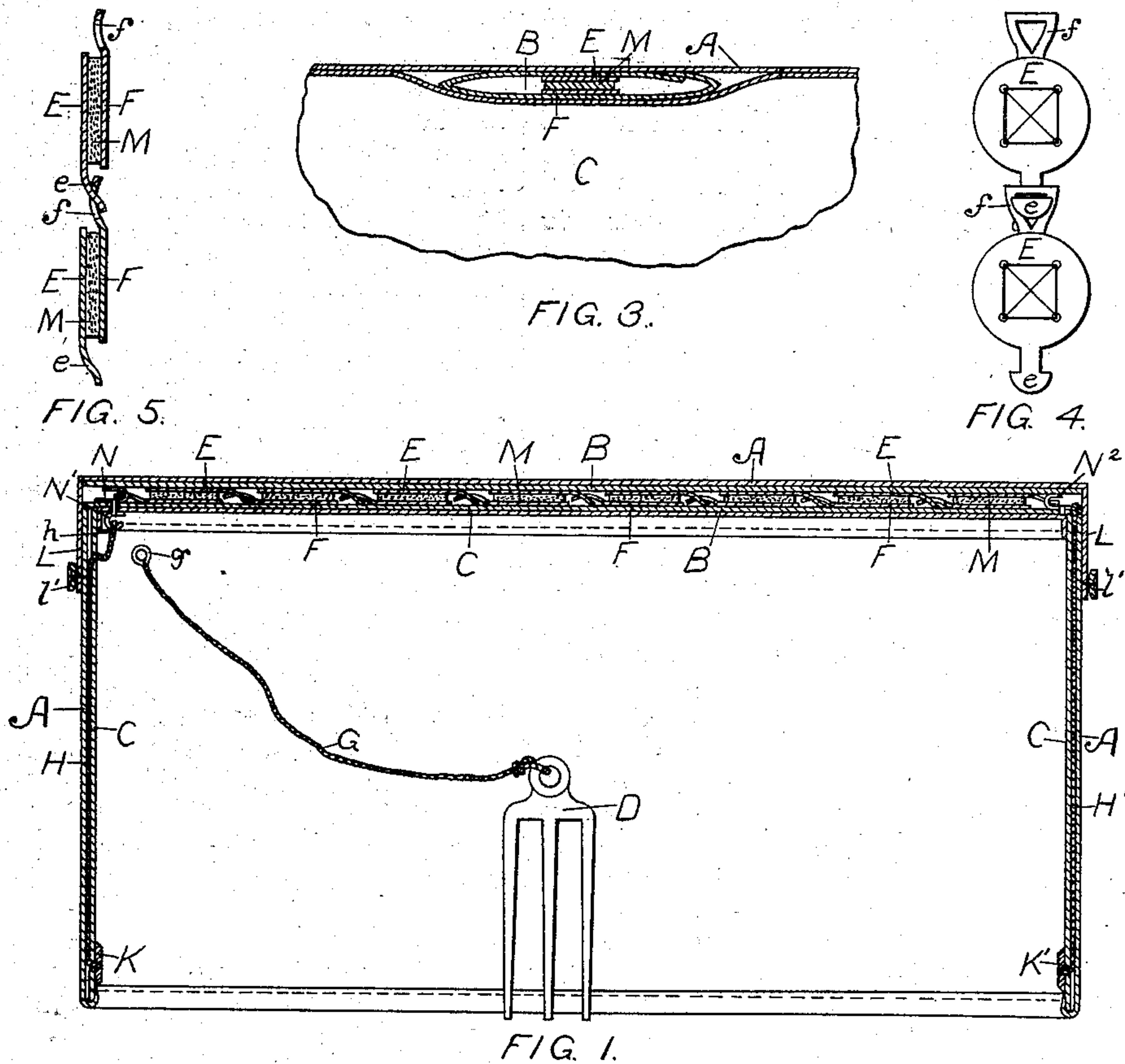


(No Model.)

N. P. RUTTER.
ELECTRO THERAPEUTIC CAP.

No. 389,764.

Patented Sept. 18, 1888.



WITNESSES
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NATHANIEL P. RUTTER, OF WALTHAM, MASSACHUSETTS.

ELECTRO-THERAPEUTIC CAP.

SPECIFICATION forming part of Letters Patent No. 389,764, dated September 18, 1888.

Application filed May 2, 1888. Serial No. 272,557. (No model.)

To all whom it may concern:

Be it known that I, NATHANIEL P. RUTTER, a citizen of the United States, residing at Waltham, in the county of Middlesex and Commonwealth of Massachusetts, have invented a certain new and useful Electric Cap, of which the following is a specification, reference being made to the accompanying drawings, forming a part of the same.

Figure 1 is a section through the center of the cap and battery-chain. Fig. 2 is a plan view looking into the cap from below. Fig. 3 is a section on $x x$, Fig. 2, on a larger scale. Fig. 4 is a plan view of two adjoining links of the battery-chain. Fig. 5 is a longitudinal section through the center of Fig. 4, and Fig. 6 shows the peculiar shape of the elements composing the battery-chain.

My invention consists of an improved electric cap to be worn as a remedy for headaches and other affections, especially of the nervous order. To this end I introduce a battery-chain into the crown of the cap, made of some light non-conducting material—such as silk—the said chain being preferably between the outer covering and the lining of said cap.

A represents the outer covering, and C the lining, of the cap.

B is a pocket, made of some water-proof non-conducting material, lying in the crown between the outer covering and the lining. This pocket is open at the ends, and is adapted to receive the battery-chain, which may be easily introduced therein and removed therefrom through the open ends of the pocket. The outer covering of the crown is provided with the flap L, which buttons down over the sides of the cap, thereby covering the openings at the ends of the said battery-pocket.

The battery-chain is composed of elements of copper and zinc or any other two suitable materials. These elements are cut or stamped out of thin metal in the shapes shown in Fig. 6, the elements of one kind—as, for instance, the positive—being designated E, those of the opposite or negative kind being marked F. The plates F are provided with the projecting eyes f , while the plates E have the projecting tongues e , the tongues and eyes being of such size and shape that when the two plates E and F are in such position that the planes of their surfaces are at right angles to

each other the tongue e may be introduced into the eye f , and when turned around with surfaces parallel the two are locked firmly together. The plates are provided with holes a , whereby the dissimilar plates E and F may be coupled together in pairs, with a layer of soft absorptive material—such as felt—between the two, as best shown in Figs. 4 and 5. Each pair of plates, as therein shown, with the absorptive layer between them, thus forms a link, any number of which may easily be coupled together to form a battery-chain of any desired length.

Previous to using the cap the chain is first immersed in vinegar or dilute acid, which acts as the exciting-liquid, and is absorbed by the felt or other material between the plates, after which the said chain is introduced into the water-proof pocket B, which is of sufficient width to admit it readily. When the battery-chain is in place, the flaps L L are buttoned down over the sides.

N and N² are hooks at opposite ends of the pocket, to which are connected the two ends of the battery-chain. To the hook N² is connected the wire H', which passes down preferably between the lining and the outer side of the cap, and terminates in the knob or plate K' on the inner side of the said lining, near the bottom. The hook N on the opposite side of the cap connects with the hook N' on the under side of the lining of the crown and projects into the cap. The wire H, connected at one end to the plate K, passes up the sides, similar to the wire H', but at its upper end projects into the interior of the cap, and is provided with an eye, h , adapted to hook on N'. The ends of the battery being thus in electric communication with the plates K K', the cap is placed on the head with the battery-chain running from side to side. The cap is of such a depth that the plates K K' bear, preferably, against the temples, or on portions of the head not covered by the hair. It is sometimes desirable to have a light elastic cord or band in the bottom of the cap, whereby the plates K K' are lightly held in contact with the head. When the cap is worn in this manner, a current passes through the head from side to side, which may be greater or less, according to the number of links employed in the battery-chain. If it is

thought best to reduce the current, one or more links may easily be uncoupled from the chain.

Should it be found desirable to pass the current through the head from front to rear, the eye *h* on the upper end of the wire *K* is unhooked from *N'*, and instead the eye *g* on the end of the wire *G* is hooked thereon. This wire *G* connects with the comb *D*, made of metal or other conducting material. The cap is in this case preferably worn with the battery-chain passing from front to rear at right angles to its former position. The plate *K'* then presses against the forehead, while the comb *D* is passed through the hair on the back of the head till its ends bear against the scalp. The current may be directed through any portion of the head by coupling in one or the other of the above forms and by wearing the cap in different positions thereon.

For the conducting-wires *G*, *H*, and *H'*, I prefer to use ordinary insulated fine flexible cable.

The water-proof pocket *B* may be permanently sewed into the crown of the cap, or may be made detachable therefrom. I do not confine myself to the exact position of the battery-chain herein shown. Should it be found desirable to use a longer chain than would conveniently reach across the crown of the cap, the said chain might be placed in any position in the crown, or it might pass across the same a number of times.

I claim—

1. An electric cap having in its crown an electric battery provided with suitable terminals, substantially as described.

2. A cap provided with a water-proof pocket

between the outer covering and the lining of the crown, in combination with a battery-chain provided with suitable terminals, substantially as described.

3. An electric cap provided with a water-proof pocket between the outer covering and the lining of the crown, in combination with a battery-chain, conducting-wires *H H'*, and electrodes *K K'*, substantially as and for the purposes described.

4. In an electric cap, a battery-chain provided with the terminal *K'*, connected with one end of said chain, in combination with the terminal *K* and the conducting-comb *D*, whereby the said terminal *K* and comb *D* may be interchangeably connected with the other end of said battery-chain, substantially as and for the purposes described.

5. In an electric cap, a battery in the crown of said cap, in combination with the terminal *K'*, connected with one pole of said battery, and the conducting-comb *D*, connected with the other pole, substantially as and for the purposes described.

6. In an electric cap, a battery-chain composed of links, each of which consists of a plate, *E*, provided with the projecting tongue *e*, and the plate *F*, provided with the eye *f*, the said plates being secured on either side of the absorptive layer *M*, whereby the said links are readily coupled together, substantially as described.

In witness whereof I have hereunto set my hand.

NATHL. P. RUTTER.

Witnesses:

WM. B. H. DOWSE,
ALBERT E. LEACH.