

J. H. EASTMAN,
ELECTROTHERAPEUTIC APPARATUS,
APPLICATION FILED APR. 23, 1919.

1,317,277.

Patented Sept. 30, 1919.

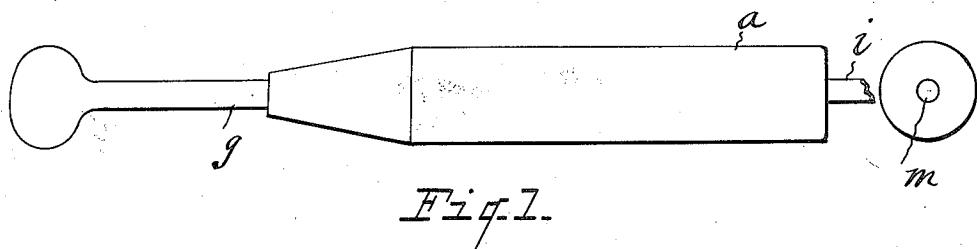


Fig. 1.

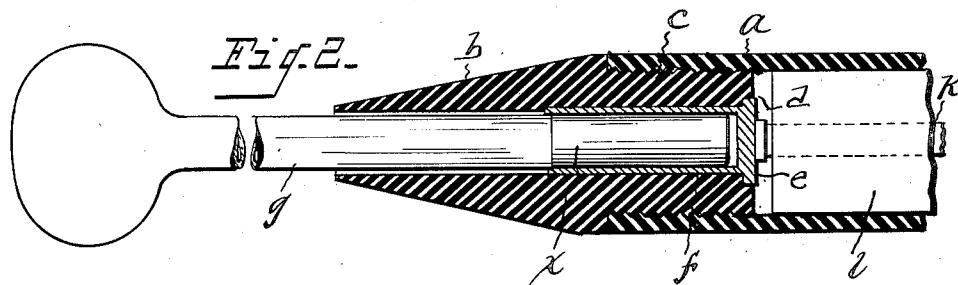


Fig. 2.

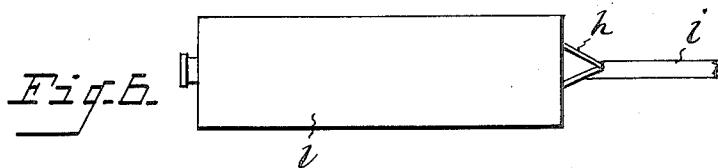


Fig. 5.

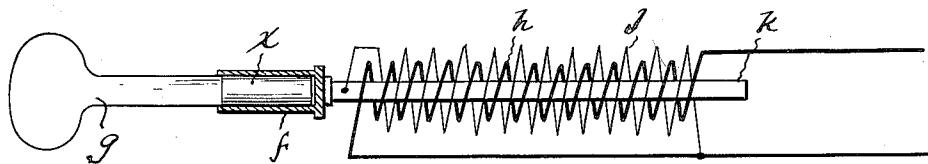


Fig. 3.

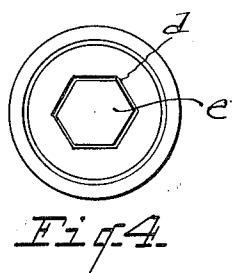


Fig. 4.

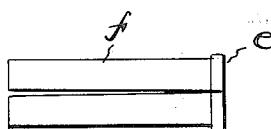


Fig. 5.

INVENTOR
James H. Eastman

BY
Stuart S. Barnes
ATTORNEY.

UNITED STATES PATENT OFFICE.

JAMES H. EASTMAN, OF DETROIT, MICHIGAN.

ELECTROTHERAPEUTIC APPARATUS.

1,317,277.

Specification of Letters Patent. Patented Sept. 30, 1919.

Application filed April 23, 1919. Serial No. 292,054.

To all whom it may concern:

Be it known that I, JAMES H. EASTMAN, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Electrotherapeutic Apparatus, of which the following is a specification.

This invention relates to electrotherapeutic apparatus, and has for its object a special form of electrode holder capable of quick and cheap assembly. The electrode holder is so constructed that easy access may be had to the metal socket.

This electrotherapeutic apparatus is designed more particularly to have a vacuum or other electrode. In apparatus of this character it is customary to use a fiber or hard rubber handle into which the electrode is received and by which the same is handled. This handle is now generally utilized to carry the induction coil which supplies the high voltage which is necessary for apparatus of this character. It has been the general plan heretofore to utilize a handle which has a screw cap on the cable end. This has made it very difficult to get to the sleeve-like socket for the electrode in case this was necessary. It has also been proposed heretofore to have screw caps at both ends of the holder but not a screw cap carrying an electrode socket. Nor is an ordinary screw cap of such character as to be adapted to carry a socket.

In the drawings,—

Figure 1 shows a side elevation and cable end elevation of the electrode holder with the vacuum electrode in place.

Fig. 2 is a fragmentary longitudinal section of the same.

Fig. 3 is a diagrammatic view showing the wiring.

Fig. 4 is an end elevation of the removable nose piece for the holder.

Fig. 5 is an elevation of the spring electrode socket.

Fig. 6 is an elevation showing how the induction coil is connected with the cable.

a designates a hard rubber or fiber handle which comprises a barrel and a removable nose piece *b* in the form of a hollow frustoconical member having a threaded neck *c* adapted to screw into the threads of the barrel *a*. The back of this nose piece has a countersunk hexagonal portion *d* adapted to receive the hexagonal end *e* of the spring

split sleeve *f* which acts as the electrode socket. The electrode is designated *g* and comprises a sealed vacuum tube with an enlarged head and a metallic plug end *x*. The induction coil comprises a primary winding *h*, the two leads of which pass through the cable *i*, upon which the holder *a* is carried, to a source of current and the vibrator and condenser (not shown). The secondary circuit designated *j* has a great many more turns than the primary circuit and has one terminal coupled up with the primary and the other terminal connected with the end of the brass rod *k*. The induction coil is contained in a fiber case *l* with only the terminal end of the rod protruding as shown in Fig. 6.

The contents of the handle and the parts of the handle may be very readily assembled by this arrangement. The induction coil is connected up with the end of the cable and inclosed in a fiber case *l* so that it becomes a permanent fixture on the end of the cable unless the case needs to be torn off for repair of the coil. The cable *i* is drawn through the small opening *m* in the rear end of the barrel *a* until the induction coil strikes the end of the barrel. The electrode socket sleeve *f* is simply shoved into the nose piece *b* from the inner end with the hexagon head *e* seating in the hexagon countersunk portion *d*. The nose piece *b* is then simply screwed in place. Screwing the nose piece tightly down forces the head of the socket sleeve *f* tightly against the terminal of the secondary circuit so as to insure a good electrical connection. Hence not only does the screwing of the nose piece into the barrel secure the ordinary function of uniting these two but it also serves to screw the two contacts tightly together. When it is necessary to get at the socket, all that has to be done is to unscrew the nose piece, remove it and poke the socket out the inner end of the nose piece.

What I claim is:

1. An electrode handle for the purpose specified, having in combination, a barrel having its outer end open and arranged to receive and hold a nose piece, a terminal supported in said barrel and having a free end, a nose piece fitting in the open outer end of said barrel and provided with an opening therethrough to detachably hold an electrode, and a metallic electrode socket removably fitting into the inner end of the

opening through the nose piece but held from being drawn through such opening, whereby when the socket is fitted into the nose piece and the nose piece secured in 5 the end of the barrel the socket is forced against free end of the terminal to make an electrical connection.

2. An electrode handle for the purpose specified, having in combination, a barrel 10 having its outer end open and screw-threaded, a terminal supported in said barrel and having a free end, a nose piece screwing into the outer end of the barrel and having an axial opening therethrough adapted to de- 15 tachably hold an electrode, and a metallic electrode socket removably fitting into the inner end of the opening through the nose piece but abutting said nose piece so as to avoid being drawn through the nose piece, 20 whereby when the socket is placed in the nose piece and the nose piece screwed into the barrel the socket is forced into contact with the free end of said terminal to make an electrical connection.

25 3. An electrode holder for the purpose specified, having in combination, a barrel, a member contained therein having at its outer end a terminal, a nose piece adapted to fit into the outer end of the terminal 30 and be secured thereto and provided with a longitudinal opening through the said nose piece having at its inner end a polygonal countersunk portion, and a tubular electrode socket adapted to fit into the longitudinal opening and provided with a polygonal head adapted to fit into the polygonal countersunk portion of the nose piece, the 35 said head being adapted to make contact with the terminal when the nose piece is secured into the end of the barrel.

40 4. An electrode holder for the purpose specified, comprising a barrel provided with

an outer internally threaded end, an induction coil adapted to fit into the barrel and provided with a terminal at its outer end, 45 a nose piece screwing into the end of the barrel and provided with a longitudinal opening having a polygonal countersunk portion at its inner end, and a tubular electrode socket fitting into the bore and pro- 50 vided with a polygonal head adapted to fit into the polygonal countersunk portion of the nose piece and making firm contact with the induction coil contact when the nose piece is screwed into the end of the 55 barrel.

5. An electrode holder for the purpose specified, comprising a barrel provided with an internally threaded end, a nose piece provided with an inner externally threaded 60 end adapted to screw into the end of the barrel and also provided with a longitudinal opening opening out at its inner end into a countersunk portion, and an electrode socket in the form of a tube having an enlarged 65 head at its inner end adapted to fit into the nose piece from the inner end thereof and having an enlarged head adapted to seat into the countersunk portion of the nose piece. 70

6. An electrode holder for the purpose specified, comprising a barrel having a sealed inner end provided with a cable opening, an induction coil secured to the end of the cable and drawn in place by drawing 75 the cable through the cable opening, said coil carrying a terminal on its outer end and a nose piece provided with an electrode socket and detachably securable in the opposite open end of the barrel to force the 80 electrode socket into contact with said terminal.

In testimony whereof I affix my signature.
JAMES H. EASTMAN.