Oct. 24, 1939. L. A. HANSEN ET AL 2,176,994

ELECTRIC STOCK PROD

Filed March 19, 1938

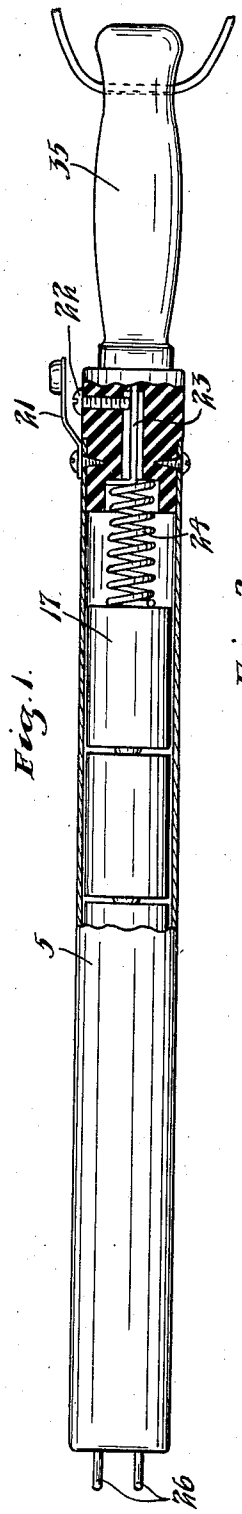


Fig. 1.

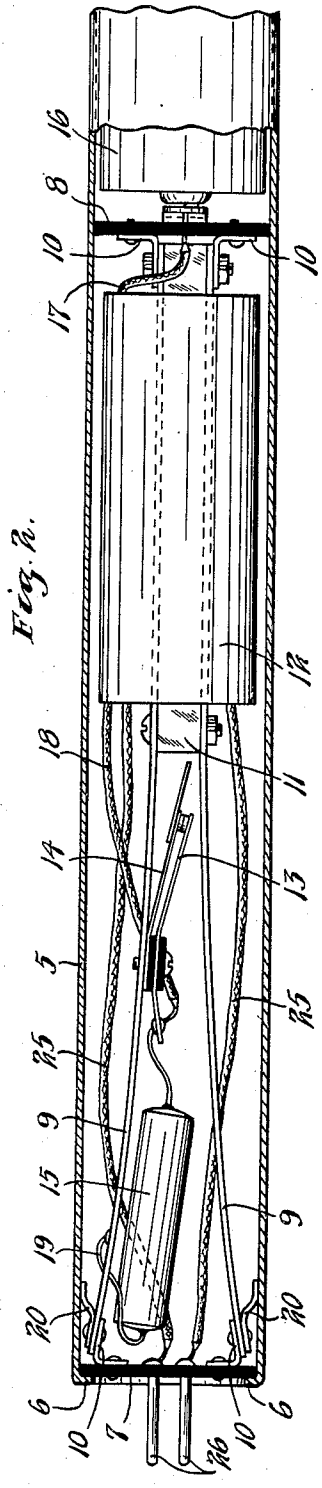


Fig. 2.

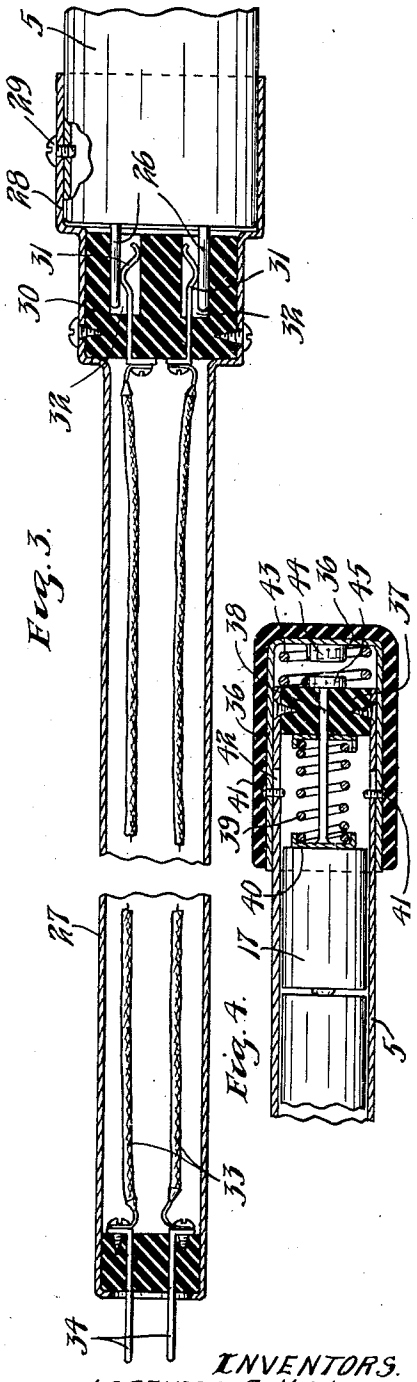


Fig. 3.

Fig. 4.

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Patented Oct. 24, 1939

2,176,994

UNITED STATES PATENT OFFICE

2,176,994

ELECTRIC STOCK PROD

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Application March 19, 1938, Serial No. 196,892

5 Claims. (Cl. 231—2)

This invention relates to electrical stock prods for cattle and other livestock.

Numerous stock prods have been devised which include generally a source of electrical current, an induction coil, and a pair of contacts, said contacts being placed against the hide of an animal to transmit an electrical shock to the animal, the purpose being to direct the movements of the animal when loading or unloading into or out of conveyances or when directing animals into pens or run-ways. The advantages of an electrical device of this general type of ordinary prod pole or stick is that it is not necessary to prod the animal with any great force, and thus the flesh is not bruised.

Although our invention includes generally those features above set forth, it has as an object the compact assembly of the induction coil into a unit which is easily assembled and which is particularly adaptable for use in connection with an electrical prod pole which includes an elongated casing in which the induction coil is housed.

Another object of the invention is to provide means for extending the length of a prod pole so it may be used either as a short implement where the user thereof is standing within easy reach of the cattle, or that it may be quickly converted for use where the operator or user is standing outside of a pen or other enclosure.

A further object of the invention is the provision of interchangeable control means operating on different principles to suit the convenience of the indivdual user.

These and other objects and advantages of the invention will more fully appear from the following description made in connection with the accompanying drawing, wherein like reference characters refer to the same or similar parts throughout the views, and, in which:

Fig. 1 is a plan view of our standard or short form of prod with certain parts broken away and others shown in section;

Fig. 2 is a plan view of the induction coil and contact assembly slightly enlarged with the forward portion of the casing in section;

Fig. 3 is a longitudinal section of the extension unit; and

Fig. 4 is an alternate form of control device.

Referring particularly to Figs. 1 and 2 there is shown a substantially cylindrical casing 5 which is open at its right-hand or rear end and which is provided at its forward end with an opening defined by an inwardly turned flange 6. A disk 7 of dielectric material is positioned within the forward end of the casing against the inner face of the flange 6, and a second dielectric disk 8 is positioned a substantial distance rearwardly of the disk 7. Interposed between the two disks is a pair of metal bars or strips 9, connection being made between the bars and the disks with angled connector brackets 10. Adjacent their rear ends the bars 9 are substantially parallel and secured between them is a core 11 of a coil assembly 12. Just forward of the coil proper is a vibrator including a substantially stationary contact 13 and a movable contact 14, the latter being influenced by current in the coil. As shown the vibrator is secured to one of the substantially rigid bars or strips 9. Just forward of the vibrator is a suitable condenser 15. Current is supplied from a positive pole of a battery indicated at 16 through a wire 17 to the primary circuit of the coil 12, and thence from the coil through a wire 18 to the vibrator point 13 to the condenser 15 from where it is grounded by a wire 19 on the upper rigid rod 9, said rod being grounded to the casing by a suitable spring clip 20. In Fig. 1 there is shown a switch comprising a spring leaf 21 and stationary contact 22, said contact 22 being connected to the positive side of the rearward battery 17 through the medium of a conductor strip 23 and a helical spring 24. It will, of course, be observed that the vibrator element 14 is in contact with the upper rigid supporting element 9 which as stated is grounded. A pair of wires 25 extend from the secondary windings of the coil 12 to suitable rigidly mounted contacts 26 at the forward end of the prod, said contacts being preferably mounted in the forward fibre disk 7.

When the primary circuit is established by depressing the switch element 21 into contact with a stationary element 22, an induced current will be set up in the secondary circuit of the coil and since the contact points 26 are connected to the secondary windings in said coil, an electrical current will be transmitted to the animal when the contact points 26 are placed against the hide thereof.

In Fig. 3 there is disclosed an extension which can be quickly applied to the forward end of the main casing 5 if a longer tool is needed. The extension includes a cylindrical casing 27 which at its rear end is provided with an enlarged sleeve portion 28 of a size adapted to slide over the end of the casing 5. A suitable set screw 29 may be used to secure the extension on the main casing. Just forward of the attaching flange of the extension element is a block of insulation 30 which

carries a pair of contacts 31, the curved ends of which lie within recesses within the block of insulation, and these recesses 32 are adapted to receive the main contact pins 26 which lie in engagement with the contact prongs 31 in the extension. A pair of wires 33 connect with the extension contact pins 34 which are obviously adapted to be placed against the skin of the animal to be shocked by the current. This extension is of particular advantage when it is necessary to reach in through the bars of a fence or a pen and the like where a greater length prod pole is needed than if the user of the prod were more conveniently close to the cattle.

Fig. 4 illustrates an alternate type of switch mechanism in which the handle 35, shown in Fig. 1, is removed from the main casing 5 and a cup-like cylindrical element 36 is slipped over the rear end of the casing. The rear end of the casing is also adapted to receive a block element 37 which is secured in the casing and which carries a slidable contact pin 38 which is normally urged forwardly under influence of the spring 39 so that the contact plate 40 will bear against the rear-most battery 17. It will be noted that the cylindrical cup-element 36 is retained on the rear end of the casing 5 by means of set screws 41 which extend into slots 42 in the main casing to permit limited longitudinal movement of the cup relative to the casing. A spring 43 is interposed between the rear end of the cup 36 and the block 37 and the cup is, therefore, normally urged backwardly with respect to the main casing 5 to separate a contact 44 away from a co-operating contact 45 on the rear end of the slidable contact pin 38. By placing the prod with its forward contact pins against an animal and grasping the cup element 36 as a handle and then pressing forwardly, contact will be established between the two contact elements 44 and 45 thus completing the circuit through the induction coil as above described. If desired a rubber grip may be slipped over the slidable cup element 36.

From the foregoing description it will be seen that we have provided an electrical animal prod which is compact in arrangement and which has an easily operated control mechanism as well as a quickly attached and detached extension element for use when conditions require. The particular arrangement of the pair of spaced dielectrical disks 7 and 8 between which are mounted the substantially rigid bars 9 provides a simple and effective support for the units making up the induction coil as well as the animal contact pins 26. This entire unit can be slipped out of the casing for repair whenever desired, and obviously this unitary construction is of advantage in assembling the apparatus during its manufacture.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the various parts without departing from the scope of our invention.

What is claimed is:

1. In an electric stock prod, an elongated casing, a pair of spaced disks positioned within said casing, a substantially rigid support element connected between said disks, an induction unit mounted on said element out of contact with said casing, a pair of contacts secured to one of said disks and extending from one end of said casing, a battery in said casing, said battery, induction unit, and contacts being electrically connected, and control means for the electrical connected elements.

2. In an electric stock prod, an elongated casing, a pair of spaced disks positioned within said casing, a pair of spaced substantially rigid elements connected between said disks and longitudinally of said casing, an induction unit comprising a coil, a vibrator, and a condenser, said coil being supported on said rigid elements, and said vibrator and condenser being supported between said rigid elements, said disks, rigid elements, and induction unit being slidable as a unit in said casing.

3. In an electric stock prod, an elongated casing having an inwardly directed flange defining an opening at one end of said casing, a pair of spaced disks removably positioned within said casing, one of said disks being positioned against said flange of said casing, a pair of electric contacts secured to one of said disks and extending out of the end of said casing through the opening defined by said flange, a rigid support element connected between said disks, and an induction unit mounted within said casing on said rigid element.

4. In an electric stock prod, a metallic casing, a pair of electrical contacts extending from one end of said casing, means for supplying electrical energy to said contacts, a dielectric handle at the rear end of said casing and means for controlling a supply of electrical energy to said contacts comprising a stationary switch element mounted in said handle and connected to said source of energy, said energy source being grounded to said casing and a flexible spring contact element connected to said casing and disposed above said stationary switch element, said switch elements being positioned adjacent the forward end of said handle to permit actuation with a finger of a hand which grasps said handle.

5. In an electric stock prod, an elongated cylindrical casing, an electric battery slidably inserted in said casing, a pair of spaced rigid arms extending longitudinally of a portion of the interior of said casing, and elements secured to said arms and supporting the same out of contact with said casing, one of said end pieces being positioned at an end of said casing, a pair of electrical contacts supported by said last mentioned end piece and extending outwardly of the end of said casing, an induction coil having a core rigidly clamped between said rigid spaced arms, and a condenser and a vibrator supported by said spaced arms.

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