May 18, 1948. L. D. HAFFNER 2,441,812

ELECTRIC PRODDER

Filed Aug. 12, 1946

FIG. 2.

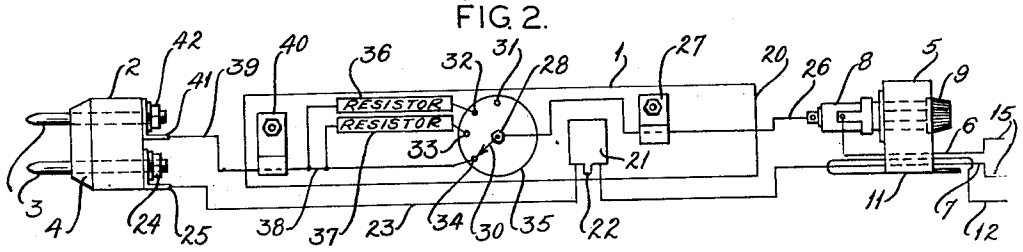


FIG. 1.

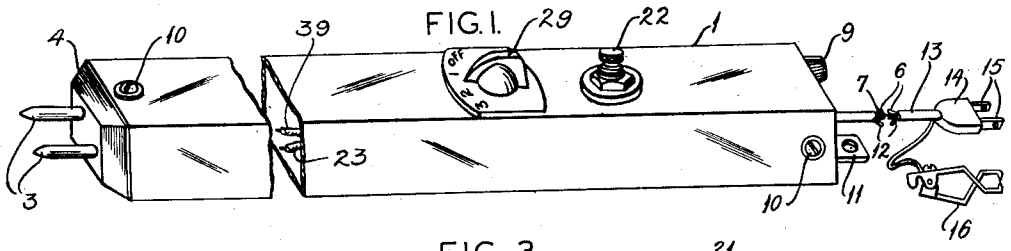


FIG. 3.

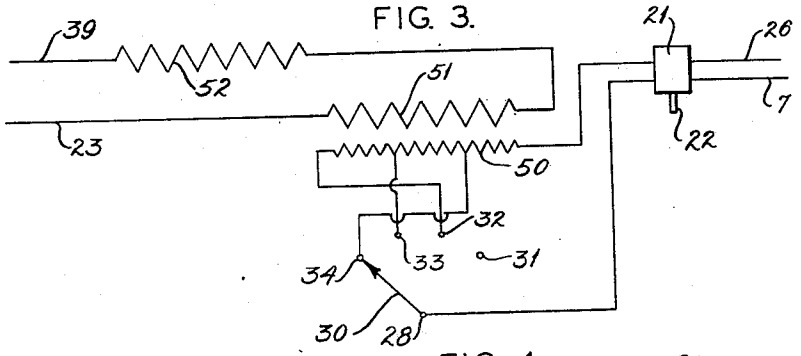


FIG. 4.

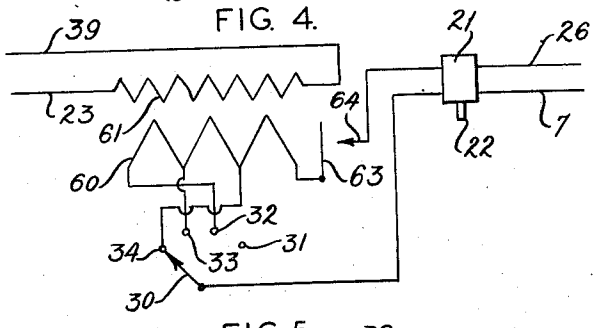
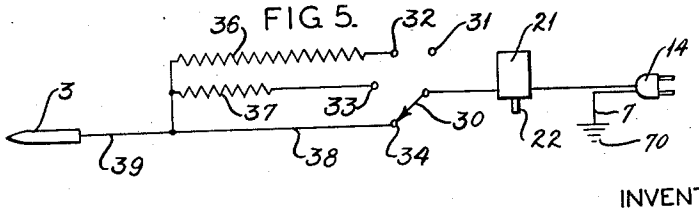


FIG. 5.



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ELECTRIC PRODDER

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5 Claims. (Cl. 231—2)

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This invention relates to electric prodders of the type employed for prodding livestock.

One of the objects of this invention is to provide an electric prodder having means for impressing a voltage upon an electrode or a plurality of electrodes designed for contact with the animal, but having means for varying the impressed voltage.

Further objects will appear from the detailed description taken in connection with the accompanying drawings in which:

Figure 1 is a perspective view illustrating an embodiment of this invention;

Figure 2 is a view showing the electrical connections; and

Figures 3, 4 and 5 are views similar to Figure 2, illustrating other embodiments of this invention.

Generally stated, and in accordance with an illustrative embodiment of this invention, the electric prodder for livestock comprises a pole, a livestock contacting electrode or electrodes on the pole adapted for connection to a source of electric current, whereby a shock may be impressed upon the livestock, and selective means carried by the pole and in circuit with the electrode or electrodes for controlling the shock delivered to the livestock. The electrode or electrodes and the associated means are as usual mounted on a pole which may be in the form of a casing or housing from which the electrode or electrodes project and in which are housed the associated means. Where the casing or housing is of metal it is preferably grounded by a suitable connection.

Referring now to Figures 1 and 2, 1 designates a casing which may be of metal, at one end of which is arranged a block 2 of insulating material, such as fiber, in which are fixed a pair of electrodes 3 of a suitable metal, the end of the block being chamfered, as shown at 4, to project beyond the casing in order to shorten the electrodes. The other end of the casing has a block 5, also of insulating material through which the leads 6 and 7 pass and in which may also be mounted a fuse receptacle 8 provided with a removable fuse holder 9. The blocks 2 and 5 may be secured in the ends of the casing by screws 10 passing through the casing and threaded into the blocks. The block 5 is provided with a metal strip 11 attached to a lead 12 and this strip may be provided with a perforation in order to form a hanger. The leads 6, 7 and 12 may be arranged in a suitable flexible insulating covering 13 of flexible form and of the

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required length. Leads 6 and 7 are connected to a suitable plug 14 provided with contacts 15, while the lead 12 may be connected to a suitable ground clamp 16. It will be understood that the strip 11 contacts with the casing 1 when the block 5 is in place.

Arranged within the casing is a base or strip 20 of insulating material, such as fiber. Lead 7 is connected to a switch 21 of the push button type, the button being shown at 22. From the switch a lead 23 is connected to one of the electrodes 3 by a nut 24 engaging a washer 25. The switch is mounted on the base 20 with its push button 22 projecting through the casing, this push button being of the type in which it is depressed against the action of a spring (not shown) to close the circuit so that upon release of the button the circuit will be open.

From the fuse receptacle 8 a lead 26 passes underneath a clamp 27 and then to a central terminal 28 of a voltage selector having a manipulative handle 29 outside of the casing and provided with a pointer having, as shown in Figure 1, four positions, namely, "off," "1," "2" and "3." This selector has a contact member 30 adapted to contact with a series of contacts 31, 32, 33 and 34 on sub base 35 mounted on the base 20 and corresponding to the position "off," "1," "2," and "3" respectively. Contact 32 is connected to a resistance 36 of high value, viz., 25,000 ohms, contact 33 is connected to a resistance 37 of lower value, viz., 5,000 ohms and contact 34 is connected to a lead 38 of substantially zero resistance. The resistances 36 and 37 and the lead 38 connect to a lead 39 passing under a clamp 40 on the base and connected to the other electrode 3 through a washer 41 and a clamping nut 42.

In the embodiments shown in Figures 1 and 2, the electric prodder is designed to be connected to a source of alternating current by plugging in a lamp circuit of, say 110 volts. Upon depression of the push button 22, the circuit including the electrodes will be closed to impress a voltage on the electrodes so that when the electrodes contact with the animal it will be shocked by flow of current to the animal. If the voltage selector 29 is in "off" position no voltage will be impressed; when the selector is in "1" position, the voltage will be impressed through the resistor 36 of high value, so as to impress a minimum voltage on the electrodes. Likewise, when the selector is in the "2" position, a higher voltage will be impressed on the electrodes because of the lower resistance 37;

while when the selector is in the "3" position, the highest voltage will be impressed on the electrodes. It will be understood, of course, that in this embodiment the voltage which will be impressed will be the voltage applied to the animal upon the flow of current; such voltage when the selector is in the "1" and "2" positions being the resultant voltage due to the existence of voltage drop brought about by the inclusions of the resistances **36** or **37**, respectively, as distinguished from the voltage of the line, impressed when the selector is in the "3" position. With this construction, therefore, a variable voltage may be impressed upon the electrodes, this voltage being readily varied by the voltage selector for controlling the shock delivered to the livestock.

In the embodiment shown in Figures 1 and 2, it is not necessary that there be a ground connection for impressing the voltage; however, in order to avoid shock to the manipulator, a ground connection to the casing is provided by a ground clamp **16** adaptable to any suitable ground for that purpose. The circuit, including the electrodes and the source of current, is normally open when the push button **22** of the switch **21** is not depressed, so that after the voltage selector has been set, the circuit may be closed by depression of a button, in order to apply the voltage determined by the position of the selector. However, the circuit may also be opened by moving the selector **29** to the "off" position.

In the embodiment shown in Figure 3 in which similar parts are indicated by the same reference numerals as in Figure 2, the voltage varying means is in the form of a transformer comprising a primary **50** and a secondary **51**. The primary **50** may have a suitable number of turns compared with that of the secondary, but divided into three sections by taps brought out to the contacts **32**, **33** and **34**, and the lead **39** may have a resistance **52** on the order of 25,000 ohms. The push button switch **22** may also be of the double pole, instead of the single pole type. When the selector is in the "1" position by contact of **30** with **32** the lowest, voltage is impressed upon the electrodes through the resistance **52**. In position "2" by contact of **30** with **33**, the voltage impressed is doubled, and in position "3" by contact of **30** with **34**, it is tripled, because of the ratio of transformation.

In Figure 4 similar parts are indicated by the same reference numerals as in Figure 2, with the push button switch **22** again of the double pole type. This electric prodder is arranged for connection to a source of direct current, such as a battery. In this embodiment the means for varying the impressed voltage is in the form of an induction coil comprising a primary **60** and a secondary **61**. A vibrator **63** contacting with a contact screw **64** is vibrated by the primary which may be provided with an iron core (not shown). In this case, the induction coil is made of sufficiently high resistance so that an extra resistance need not be provided in the lead **39**, particularly since the voltage applied to the primary may be low, on the order of 6 volts. In this case, as in the Figures 2 and 3, when the voltage selector is in the "1," "2" and "3" positions by contact of **30** with **32**, **33** and **34** respectively, successively increasing voltages are impressed on the electrodes.

In Figure 5, the embodiment is as in Figure 2, with similar parts indicated by the same reference numbers. In this case, however, there is

only a single electrode **3**, which is permitted because the lead **7** can be grounded as shown at **70**. The voltage applied to the electrode returns through the ground in order to complete the circuit. Likewise, in Figures 3 and 4 a single electrode may be provided by again connecting the lead **23** to a ground a prodder such as shown in Figures 2–4 is, however, advantageous, because it enables more close control of the prodding action.

It will, therefore, be seen that this invention accomplishes its objects. An electric prodder is provided in which the voltage impressed on one or more electrodes designed for contact with the animal may be varied. The prodder is simple in construction and the parts can all be assembled on a pole so as to make a compact and readily manipulated instrument.

The conditions under which an electric prodder for live stock is used are unique. The purpose of a prodder is not to drive the animal, but to guide it by applying the electric current to the body at such part of the animal as will cause it to move away from the prodder; thus, if it is desired that the animal move forward, the prodder is applied to its rear end; if it is desired that the animal move backward, the prodder is applied at its front end; while, if it is desired that the animal be moved sidewise, the prodder is applied at the side. Throughout, the purpose is to only apply current of such value as is necessary to effect the purpose in mind; for the purpose is not to scare or torture the animal or to make it wild, but to simply cause it to obey the driver as was frequently done by tap of a stick or a whip handle.

Different animals are susceptible to different current intensities and the difference in this respect is particularly true of different classes of live-stock, such as cattle, sheep, horses and hogs. Moreover, in each of the classes, the young are more susceptible than the old. Moreover, pregnant animals must be handled very carefully so as not to frighten them. By providing selective means on the pole for varying the current delivered by the electrode or electrodes to the animal upon contact therewith, the driver can quickly and selectively at that, apply the prodder to the animal at such a current as may be required to cause it to obey.

Having thus described the invention, what is claimed and desired to be secured by Leters Patent is:

1. An electric prodder for live-stock, comprising, a pole, a live-stock contacting electrode on the pole adapted for connection to a source of electric current whereby a shock may be impressed upon the live-stock, and selective means carried by the pole and in circuit with said electrode for controlling the shock delivered to the live-stock.

2. An electric prodder for live-stock, comprising, a pole, a live-stock contacting electrode on the pole adapted for connection to a source of electric current whereby a shock may be impressed upon the live-stock, and selective means including a high resistance and carried by the pole and in circuit with said electrode for controlling the shock delivered to the live-stock.

3. An electric prodder for live-stock, comprising, a pole, a live-stock contacting electrode on the pole adapted for connection to a source of electric current whereby a shock may be impressed upon the live-stock, a series of resistances carried by the pole, and means carried by the pole for selectively including the resistances in

circuit with said electrode in order to control the shock delivered to the live-stock.

4. An electric prodder for live-stock, comprising, a pole, a live-stock contacting electrode on the pole adapted for connection to a source of electric current whereby a shock may be impressed upon the live-stock, a transformer carried by the pole and having its secondary in circuit with said electrode, and means carried by the pole for selectively varying the primary of the transformer in order to control the shock delivered to the live-stock.

5. An electric prodder for live-stock, comprising, a pole, a live-stock contacting electrode on the pole adapted for connection to a source of electric current whereby a shock may be impressed upon the live-stock, selective means carried by the pole and in circuit with said electrode for controlling the shock delivered to the live-stock, and a switch on the pole for opening and closing the circuit.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,553,135	Byrnes	Sept. 8, 1925
1,193,168	Martin	Aug. 1, 1916
2,199,058	Vaughan	Apr. 30, 1940
2,204,041	Jefferson	June 11, 1940
2,204,295	Brockman	June 11, 1940
2,346,965	Harris	Apr. 18, 1944

FOREIGN PATENTS

Number	Country	Date
50,631	Norway	Apr. 11, 1932