

Oct. 19, 1937.

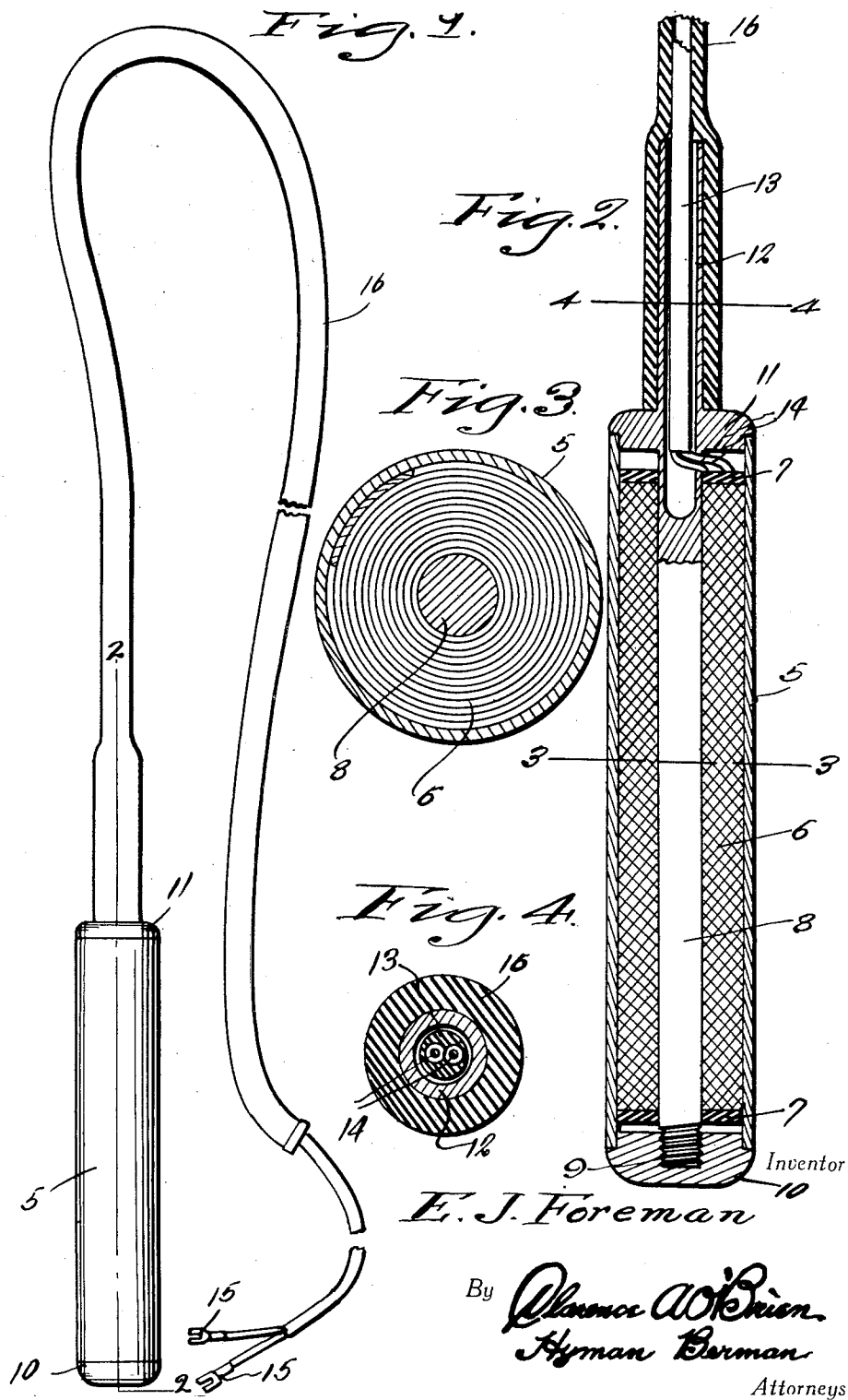
E. J. FOREMAN

2,095,976

GASTRO-TRAUMATIC MAGNET

Filed July 14, 1936

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 5.

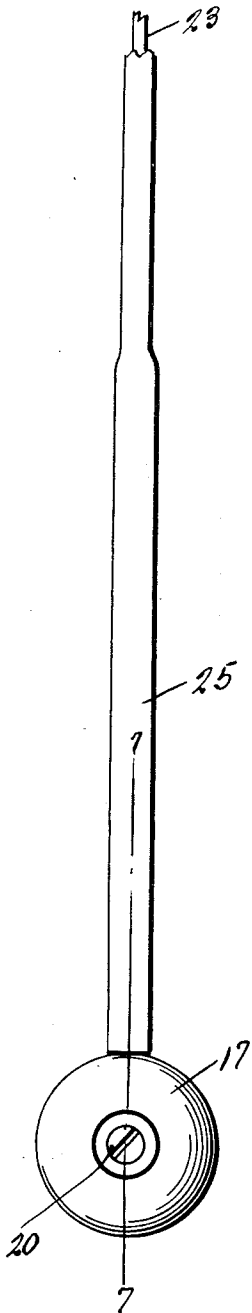


Fig. 6.

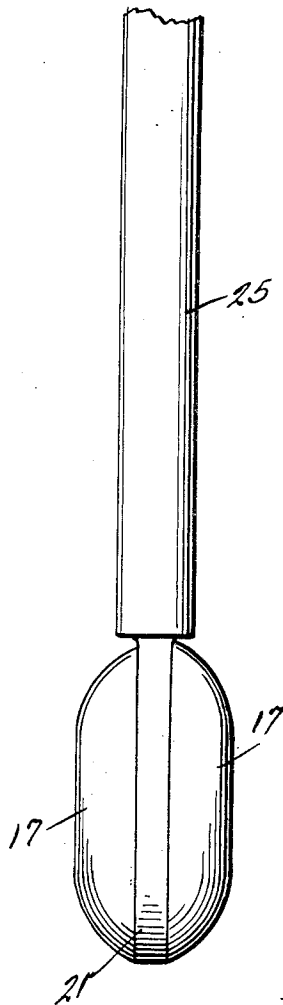
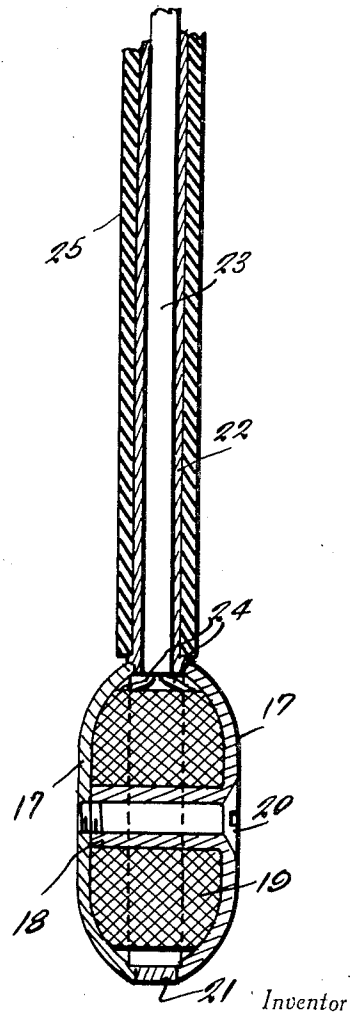


Fig. 7.



E. J. Foreman

By

Clarence A. O'Brien
Hyman Berman

Attorneys

UNITED STATES PATENT OFFICE

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GASTRO-TRAUMATIC MAGNET

Ernest J. Foreman, Trinidad, Colo.

Application July 14, 1936, Serial No. 90,596

1 Claim. (Cl. 128—1.4)

This invention is an instrument for introduction through the natural or surgical channels into the cavities of animal bodies, and having sufficient magnetic power to contact for removal all metallic objects of magnetic character introduced into the body cavities by injection or otherwise.

At the present time, much financial loss is suffered by cattlemen annually as the result of the peculiar habit of cattle for swallowing nails, wire, etc. These sharp articles puncture the walls of the stomach, diaphragm, pleura, and pericardium, causing death.

It has been found that due to the peculiar oesophageal gastric opening in ruminants and especially in cattle, a surgical opening must be made posterior to the last rib on the left side through which the arm is passed into that portion of the stomach where these metallic articles are found. Due to the distance from incision to point of location of the offending material the arm is not long enough for effective removal. Also due to the peculiar construction of the lining membrane of this portion of the stomach, it is very difficult to locate by touch the objects sought.

It is therefore the object of the present invention to provide an instrument having the necessary length as will permit the remote recesses of the stomach to be searched, and also having magnetic qualities for locating and extracting the metallic objects that would otherwise be overlooked were the sense of touch depended upon.

Further, an object of the invention is to provide an instrument of this character particularly designed with special reference to sanitation and asepsis, and the invention together with its objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings, wherein:—

Figure 1 is an elevational view of an instrument embodying the features of the present invention.

Figure 2 is an enlarged detail sectional view of the magnet equipped end of the instrument.

Figures 3 and 4 are transverse sectional views taken substantially on the lines 3—3 and 4—4 respectively of Figure 2.

Figure 5 is a fragmentary elevational view of a second form of the invention.

Figure 6 is an elevational view taken at right angles to Figure 5, and

Figure 7 is an enlarged longitudinal sectional view through the second form of the invention.

Referring to the drawings more in detail it

will be seen that both forms of the invention are somewhat identical as far as construction is concerned, but being slightly different in form or shape to meet varying needs.

The form of the invention shown in Figures 1 to 4 inclusive is particularly designed for introduction into the stomach through the oesophagus, while the form of the invention shown in Figures 5 to 7 is particularly designed for introduction into the stomach through a surgical opening.

Referring more particularly to the form of the invention shown in Figures 1 to 4 inclusive, it will be seen that in the preferred embodiment thereof this form of the invention comprises an elongated tubular casing 5 of brass or other non-magnetic material within which is snugly fitted an elongated magnet 6 at the opposite ends of which are disposed disks 7 of insulating material. Extending through the magnetic field 6 is the core 8 which at one end is threaded as at 9 for the threaded reception of a cap 10 of magnetic material serving to close one end of the casing 5.

Formed integral with the core 8 intermediate its ends is a collar 11 of magnetic material which has a diametrically reduced portion which fits within the adjacent end of the casing and between which and the cap 10 casing 5 is held securely in position about the magnet 6.

For a portion of its length the core 8 of the magnet is hollowed out as at 12 to receive an end portion of an electric cord 13 the wires 14 of which at one end are electrically connected with the magnet 6 while at their respective opposite ends the wires of the cord are provided with terminal clips 15 for electrically connecting the wires with a source of electricity (not shown).

The cord 13 extends through a sheathing 16 of rubber or other suitable material, which at one end is sleeved on to the hollowed end 12 of the core 8 as shown in Figure 2.

It will be understood that in actual practice when the ends 15 of the conductors are connected with a source of electricity the magnetic coil 6 will be electrically excited and the core 6 and the cap 10 magnetized thus enabling the metallic articles within the stomach of the animal to be recovered.

In the form of the invention shown in Figures 5 to 7 inclusive, the preferred embodiment thereof comprises a casing comprising a pair of complementary half-sections 17—17 of magnetic material one of which is provided with an inwardly directed centrally located tube 18 which forms the core for the magnet, the coil of which is indicated

by the reference numeral 19 and which is confined between the sections 17 of the casing, said sections being held together through the medium of a screw 20 that extends through the core 18 and has threaded engagement with one of the sections 17 as clearly shown in Figure 7.

Also forming part of the casing is a substantially circular narrow band 21 of brass or other non-magnetic material that is clamped between the edge portions of the casing sections 17, permitting a nail or the like to engage both poles, 17—17 of the magnet at the same time, giving a greater pull upon objects embedded in the stomach tissues.

The intermediate casing section or ring 21 has formed integral therewith or otherwise secured thereto a tubular extension 22 of suitable length which accommodates an end portion of the electric cord 23 the conductor wires 24 of which at one end are electrically connected with the magnetic coil 17.

The cord 23 which is similar in every respect to the cord 13 is also covered for the major portion of its length by a sheathing 25 of rubber or other suitable material one end of which is sleeved onto the tubular extension 22 as shown in Figure 7.

It will thus be seen that the head portion or casing part of this form of the invention is substantially circular and consequently is particularly adapted to be introduced into the body cavity of the animal through a surgical opening or incision.

In both forms of the invention the casing part thereof is so constructed as to be fluid tight, impervious to contamination, readily washed,

cleansed and disinfected. Also the casing part housing the magnet, in each form of the invention, will be capable of being highly polished and perfectly lubricated.

Thus it will be seen that the instrument, in either form thereof, is especially constructed for introduction into body cavities, the chief construction being such as to have full regard as to strict asepsis and a minimum of friction.

It is thought that a clear understanding of the construction, utility and advantages of an invention of this character will be had without a more detailed description.

Having thus described the invention what is claimed as new is:—

A surgical instrument comprising a metallic casing, a solenoid confined wholly within said casing and including a core having a reduced end extending beyond one end of said casing and bored to accommodate an electric cord, an electric cord having an end disposed within the hollow of said core with the conductor wires of the cord electrically connected at one end with the solenoid and provided at a relatively opposite end with means for electrically connecting the wires with a source of current, a sheathing of rubber embracing the cord and having an end sleeved onto and covering the reduced end of said core, said casing being of elongated tubular form, a collar integral with the core intermediate its ends and fitted within one end of the casing to close said end and a cap closing the opposite end of the casing and connected to the adjacent end of the core to retain the core in the casing.

ERNEST J. FOREMAN.