C. E. CROWE.

TROCAR.

APPLICATION FILED DEC. 16, 1910.

1,014,128.

Patented Jan. 9, 1912.

Fig. 1

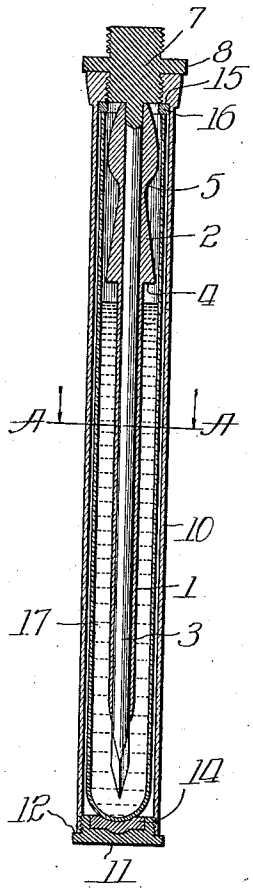


Fig. 2.

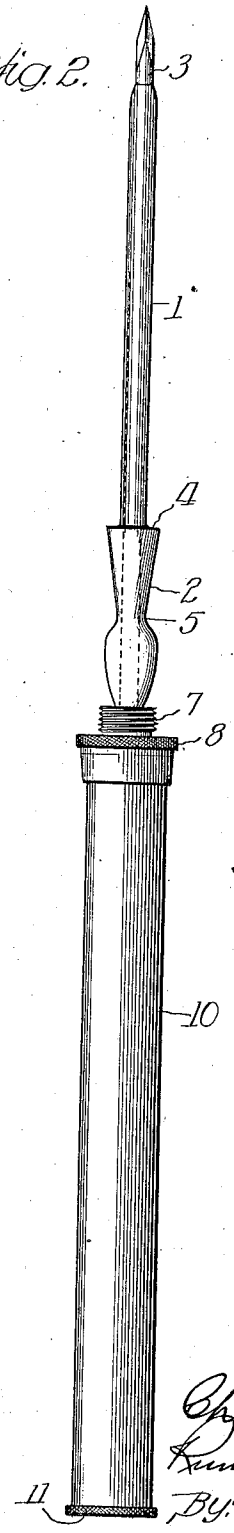


Fig. 4.

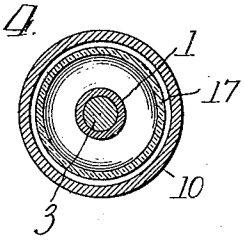
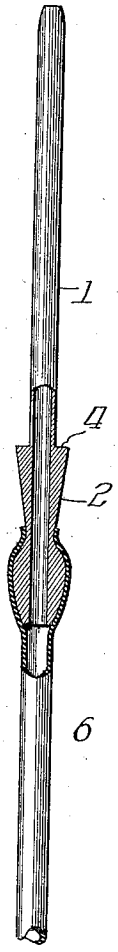


Fig. 3.



Witnesses:
Edwin Sheets
Mary M. Sullivan

Inventor:
Charles E. Crowe
Kummler & Kummler, Attys
By: C. A. Kummler

UNITED STATES PATENT OFFICE.

CHARLES E. CROWE, OF CHICAGO, ILLINOIS.

TROCAR.

1,014,128. Specification of Letters Patent. Patented Jan. 9, 1912.

Application filed December 16, 1910. Serial No. 597,664.

To all whom it may concern:

Be it known that I, CHARLES E. CROWE, a citizen of the United States of America, and a resident of Chicago, Cook county, State of Illinois, have invented certain new and useful Improvements in Trocars, of which the following is a specification.

The main objects of this invention are to provide an improved form of trocar particularly adapted for use in veterinary surgical operations; to provide an improved form of cannula which is of such form that when the trocar is removed, a hose may be readily attached for the purpose of injecting fluids through the cannula and in which the cannula is of such form that a portion thereof will provide a convenient hand grip by means of which it may be held while attaching the hose after the cannula is in position in the animal's body, and by means of which the cannula may be readily withdrawn from the body; to provide an instrument of this class in which the operating handle is arranged to form a fluid-tight receptacle in which the trocar and cannula can be held submerged in a bath of antiseptic fluid when the instrument is not in use, thus insuring that the device is always ready for instant use. These objects are accomplished by the device shown in the accompanying drawings, in which:—

Figure 1 shows the parts in the relative positions which they occupy when the device is not in use. Fig. 2 shows the parts of the instrument assembled, ready for the commencement of an operation. Fig. 3 shows the cannula with the trocar removed and a hose connected to its bulbed end. Fig. 4 is a sectional view of Fig. 1 taken on the line A—A.

In the construction shown, the cannula comprises a tube 1 with a head 2 at one end. The trocar 3 closely fits the bore of the cannula 1 and is provided with a sharp point which is adapted to extend beyond the end of the tube of the cannula for the purpose of cutting an aperture through which the cannula is inserted for a surgical operation. The head 2 presents an abrupt shoulder 4 for limiting the inward movement of the instrument when inserted into the body of the animal. The head is slightly contracted at 5 so as to form a bulb at its end, over which a rubber tube 6 may be readily slipped and secured, as indicated in Fig. 3.

The head of the cannula is of considerable length between the contracted neck 5 and the shoulder 4, so as to provide a convenient grip which may be held in the hand of the operator while the hose 6 is being connected to the head 2 or while the cannula 1 is being withdrawn from the animal's body. The trocar 3 is mounted in a double-ended screw-threaded plug 7 which is provided with a central lock nut or shoulder 8 having a knurled edge. A combined casing and operating handle 10 is formed of a piece of tubing which is screw-threaded to receive the plug 7. The lower end of the casing 10 is also provided with a screw plug 11 having a shoulder 12 and a recess which is adapted to hold a resilient packing 14 of leather or the like.

The end of the casing 10 which is adapted to receive the screw-threaded plug 7 has an internal shoulder 15. An annular gasket 16 is seated against the shoulder 15 and against the inner wall of the casing 10. Between the annular gasket 16 and the resilient plug 14 is placed a glass receptacle 17 which forms a liquid-tight joint at its open end where it coacts with the annular gasket 16. Sufficient pressure to form a liquid-tight joint between the glass receptacle and the annular gasket is obtained by the pressure of the resilient plug 14 on the closed end of the glass receptacle 17. The reversible double screw-threaded plug 7, when screwed into the casing 10, forms a liquid-tight receptacle which is adapted to hold an antiseptic solution. This liquid-tight receptacle is closed when the plug 7 is inserted either end up.

In operation, the trocar 3, which is secured to the double screw-threaded plug 7, is attached to the casing 10 so that the casing forms a handle for manipulating the trocar. The cannula 1 is slipped over the trocar into operating position, so that the head 2 contacts with the plug 7, as shown in Fig. 2. After the trocar is forced into position, the operator secures the head 2 with his fingers, and the trocar 3 is removed from the aperture, leaving the cannula 1 to form a passage through the aperture made by the trocar. When it is necessary to either insert or withdraw liquid matter, a rubber tube 6 is slipped over the bulbed head 2 of the cannula, forming a convenient arrangement by which fluids can be passed into or taken out of the aperture. After the can-

nula has served its purpose, it is removed from the aperture, cleaned, and replaced in its position on the trocar, as shown in Fig. 2.

A convenient carrying case or sheath is provided by removing the double screw-threaded plug 7 from the casing 10 and reversing the plug, so that the trocar and cannula are held in suspension in the glass receptacle 17, which may contain an antiseptic solution, so that the trocar will always be ready for use. In order to remove the glass receptacle from the casing, the screw-threaded plug 11 is loosened and removed, by which process the tension on the glass receptacle is taken away, and the receptacle 17 is free to slip out of the casing, and by a reversal of the operation, as stated, the glass receptacle 17 can be replaced in the casing 10.

Although but one specific embodiment of this invention is herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention, as defined by the following claims.

I claim:

1. An instrument of the class described, comprising a trocar, an operating handle adapted to be rigidly connected thereto, a cannula, a bulbed hose connection at the rear end of the cannula, and a limiting annular shoulder in front of said connection, said shoulder and connection being spaced apart to provide a hand grip between them.

2. An instrument of the class described, comprising a trocar, a cannula; a liquid-tight receptacle adapted to contain said trocar, said cannula, and a liquid bath therefor; and a sheath for said receptacle adapted to serve as a handle for said trocar.

3. In a trocar, the combination of a sheath, a glass receptacle fitted in said sheath, a reversible screw-threaded plug forming a liquid-tight closure for said sheath and receptacle, a trocar secured to said plug, a cannula fitting said trocar and having a shoulder and a hose connection spaced apart to provide a holding grip between them, said trocar and said cannula being adapted to be held submerged in an antiseptic solution in said receptacle.

4. In a trocar, the combination of a sheath, an annular shoulder in said sheath, a glass tube forming a lining for said sheath, means holding said tube in liquid-tight contact with said shoulder, a reversible screw-threaded plug forming a liquid-tight closure for said sheath and tube, a trocar secured to said plug, a cannula fitting said trocar and having a limiting shoulder, a hose connection, and a grip space between them, said trocar and cannula being adapted to be held submerged in an antiseptic solution in said casing.

Signed at Chicago this 13th day of December, 1910.

CHARLES E. CROWE.

Witnesses:
EUGENE A. RUMMLER,
EDWIN PHELPS.