No. 790,234. PATENTED MAY 16, 1905.

A. R. WALDO.

SURGICAL INSTRUMENT.

APPLICATION FILED MAY 11, 1904.

Fig. 1.

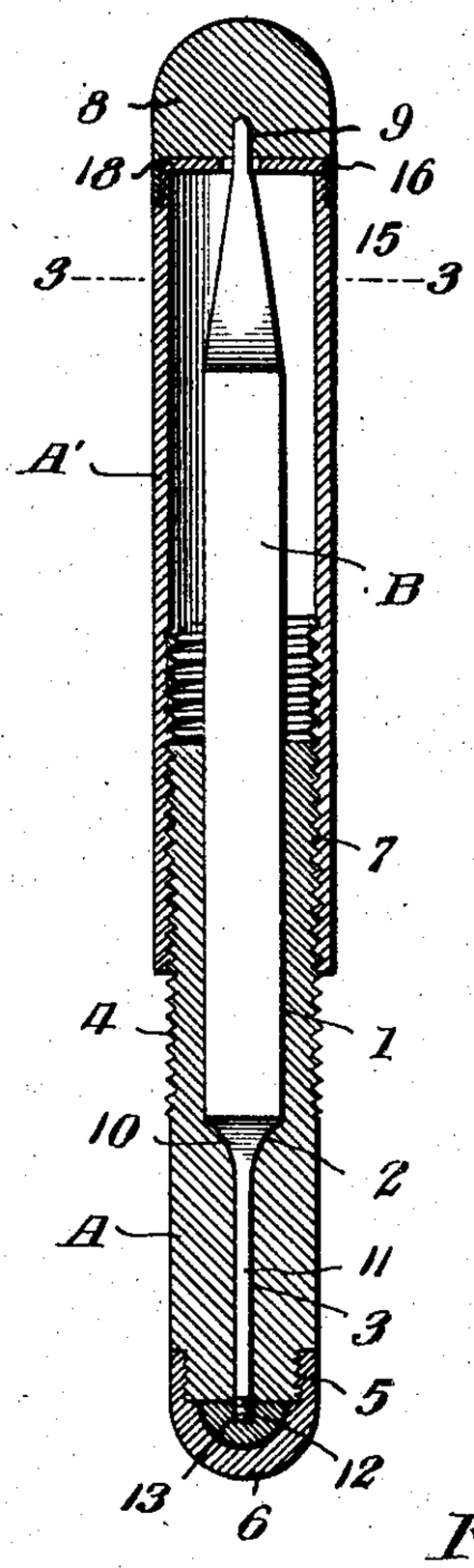


Fig. 2.

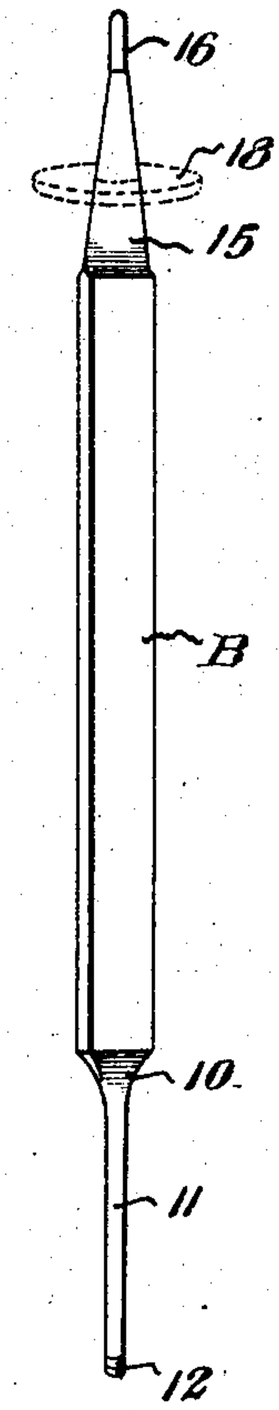
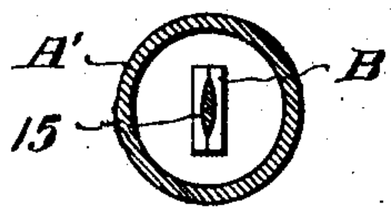


Fig. 3.



Witnesses

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No. 790,234. Patented May 16, 1905.

UNITED STATES PATENT OFFICE.

ABRAHAM R. WALDO, OF EATON, COLORADO.

SURGICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 790,234, dated May 16, 1905.

Application filed May 11, 1904. Serial No. 207,454.

To all whom it may concern:

Be it known that I, ABRAHAM R. WALDO, a citizen of the United States, residing at Eaton, in the county of Weld and State of Colorado, have invented new and useful Improvements in Surgical Instruments, of which the following is a specification.

My invention relates to improvements in the class of surgery, and particularly to the subclass of instruments in veterinary operations; and the object is to provide an improved instrument for cutting the sphincter muscles located adjacent to the orifice of a cow's teat or those of other milk-producing domestic animals.

The invention embodies a telescoping casing and a lance or knife of particular construction held in one of the sections of the handle, all as will be hereinafter fully specified, and the novelty claimed particularly and distinctly pointed out.

I have fully and clearly illustrated the invention in the annexed drawings, to be taken as a part of this specification.

Reference being had to the drawings, Figure 1 is a central longitudinal section through the casing and handle and showing the lance or knife as properly positioned therein. Fig. 2 is a perspective view of the lance or knife complete removed from the case, the adjustable disk being indicated in dotted lines. Fig. 3 is a transverse section through the casing and knife, taken on the line 3 3 of Fig. 1.

In the drawings the same parts appearing in the different illustrations are designated by similar reference notations.

Referring to the drawings, A A′ designate the parts or sections of the handle or casing of round or cylindrical exteriors.

The section A is a solid cylinder, having a lance-socket 1 made therein to take in the main portion of the shank of the knife-blade. The socket is tapered, as at 2, to form a shoulder against which the shoulder in the blade abuts and is held, and then the socket is continued in a straight bore of reduced diameter, as at 3. At 4 the part A is provided with exterior screw-threads and at the outer end is provided with screw-threads 5, with which the interior threads of a cap 6 engage. This cap 6 is concaved in its inner face, as shown, to fit over a convex screw-cap which clamps the knife or lance in position in the handle, substantially as shown in Fig. 1 of the drawings.

The section A′ consists of a hollow cylinder and is provided with interior screw-threads 7, which engage over the threaded end portion of the part A, as indicated in Fig. 1 of the drawings. It will be perceived that by this threaded connection the sections of the handle or case may be adjusted endwise to each other, and thus cause the cutting portion of the knife to project more or less beyond the open end of the part A′, so as to make a deeper or more shallow cut within the orifice of the teat. The free end of the part A′ is provided with exterior screw-threads, which engage with the interior threads of a cap 8, which closes the end of the handle when the instrument is not in use. Centrally in the cap 8 is formed a socket 9, which takes in the round extension at the end of the knife, the socket being made deep enough to extend to the point or termination of the cutting-blade, as indicated in Fig. 1 of the drawings.

B designates the knife or lance made of a flat piece of steel, the shank of which fits in the passage or socket 1 of the part A and is formed with a tapering shoulder 10 to set against the tapering shoulder 2 in the handle, and from the termination of this tapered portion the round part 11 extends, which is adapted to fit the counterpart bore 3 of the part A. The part 11 extends beyond the end of the handle and is provided with left-hand screw-threads 12 to engage in like threads made in the socket of the clamping-nut 13, which is made with a round head to set within the concave of the cap 6. It will be readily perceived that by screwing up the clamping-nut the body of the blade is drawn tight in position and held firmly. The lower portion of the shank or body of the knife extends centrally and loosely through the casing A′, substantially as shown. The cutting-blade 15 of the knife tapers in the direction of its length and is of such width and length as may suit it for the purposes intended. It has both edges sharp, as indicated, and at its point or termination has a round extension 16, which

sets in the socket 9 of the cap 8 when the cap is in place. On the cutting-blade 15, while the operation is being performed, is arranged an elastic disk 18, which acts as a shield to prevent the cut from being made deeper than required.

It is well known that some cows are hard to milk and the operation of milking them is tedious and laborious. The cause of difficult expulsion of the milk abides in the fact that the sphincter muscles adjacent to the orifice of the teat close the duct so closely as to be of difficult manipulation. By the use of my invention the sphincter muscles are readily separated and the "hard-milking" problem no longer exists.

The uses of my improvements in operation are effected as follows: The parts being assembled as indicated in Fig. 1 of the drawings, the operation may be proceeded with by removing the cap 8 and adjusting the rubber disk on the blade to suit the depth of the cut, and then the extension 16 is inserted in the orifice of the teat and pushed home until the cutting edges can take effect, when by a quick movement inward or upward the knife is moved until the rubber disk is encountered, when the operation is complete and the instrument is withdrawn. The operation is attended with very little pain to the animal and has no sequential inconvenience attending it. The muscles remain severed without detriment or soreness or should they again connect they do so by accretion.

Having thus described my invention, what I claim is—

1. In an instrument of the character described, a handle-piece having a longitudinal central blade-seat, a knife having its shank fitted and secured in the seat of the handle-piece, and formed with a double-edged cutting portion terminating in a round projection, a yielding disk on the cutting-blade, and a second cylindrical handle-piece adjustably mounted on the first-mentioned handle-piece.

2. An instrument for cutting the sphincter muscles of a cow's teat, comprising a two-part handle adjustable endwise, a knife the shank of which is fixedly secured in one of the handle parts and the cutting-blade thereof extending beyond the end of the detachable handle part, said blade terminating in an extension to guide the cutting-blade into the duct of the teat, and caps on the outer ends of the handle parts.

In testimony whereof I affix my signature in presence of two witnesses.

ABRAHAM R. WALDO.

Witnesses:
FRANK J. DUXBURY,
THOMAS HALPIN.