

No. 677,756.

Patented July 2, 1901.

R. CALDWELL.

LANCET.

(Application filed Aug. 2, 1900.)

(No Model.)

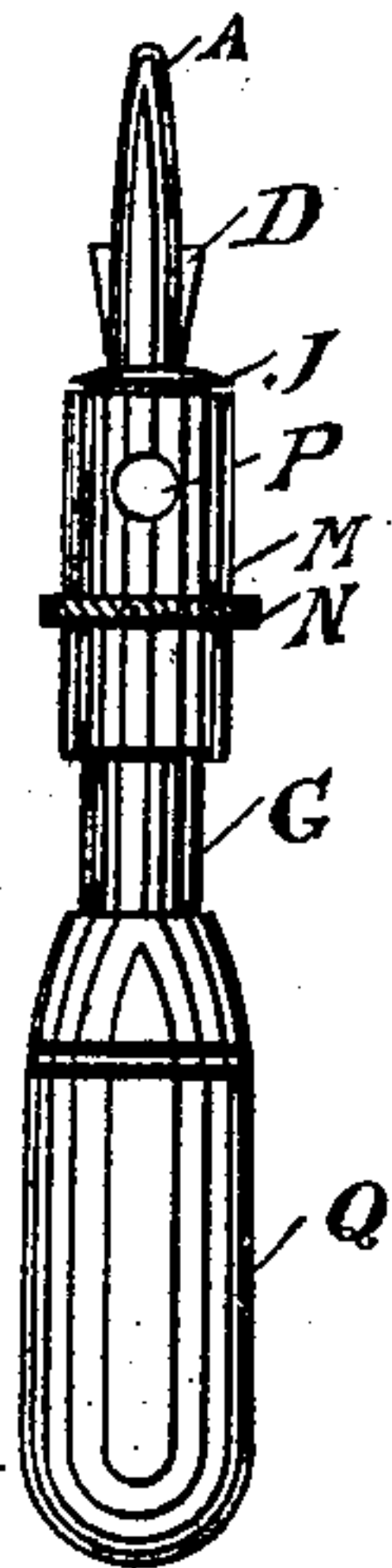


fig. 1.

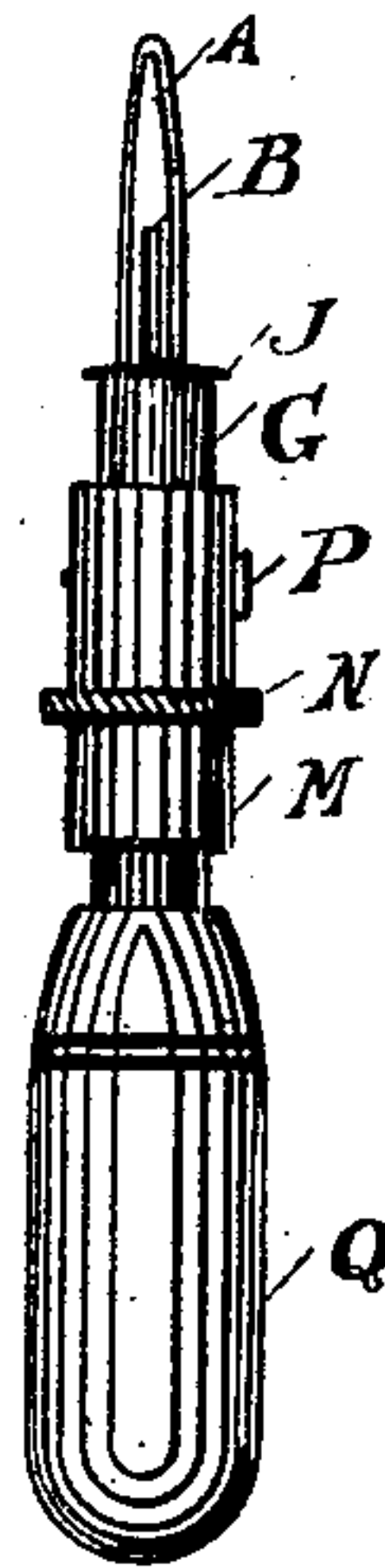


fig. 2.



fig. 3.

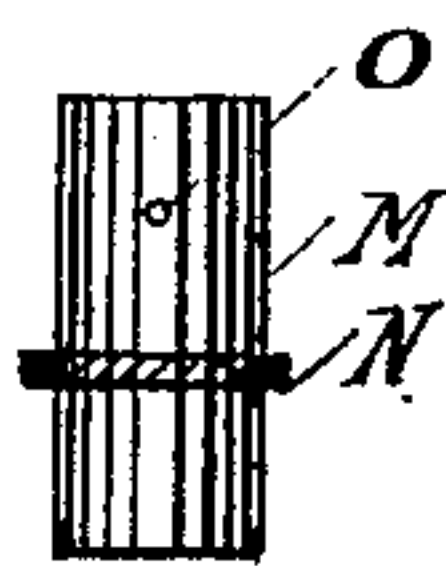


fig. 4.



fig. 5.

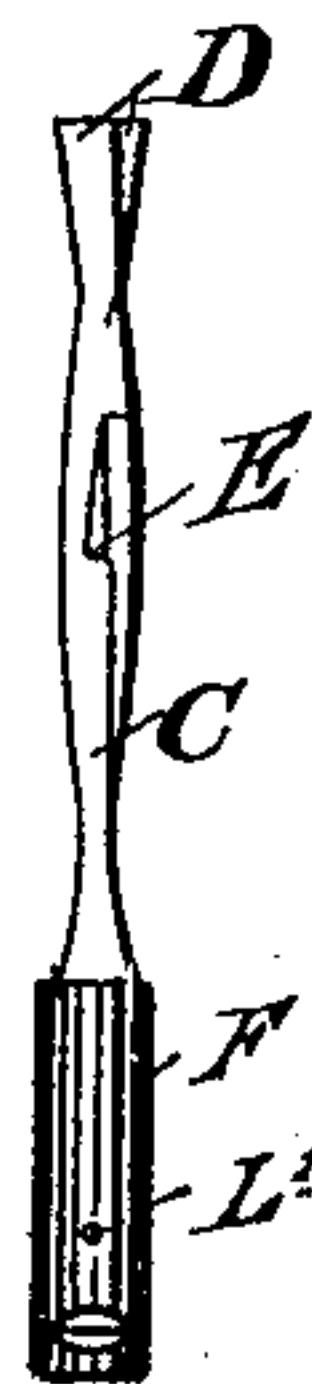


fig. 6.

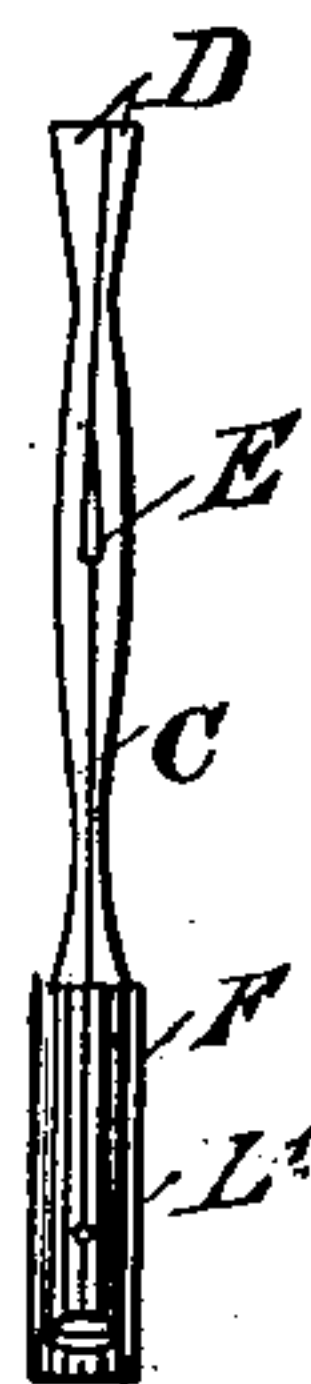


fig. 7.

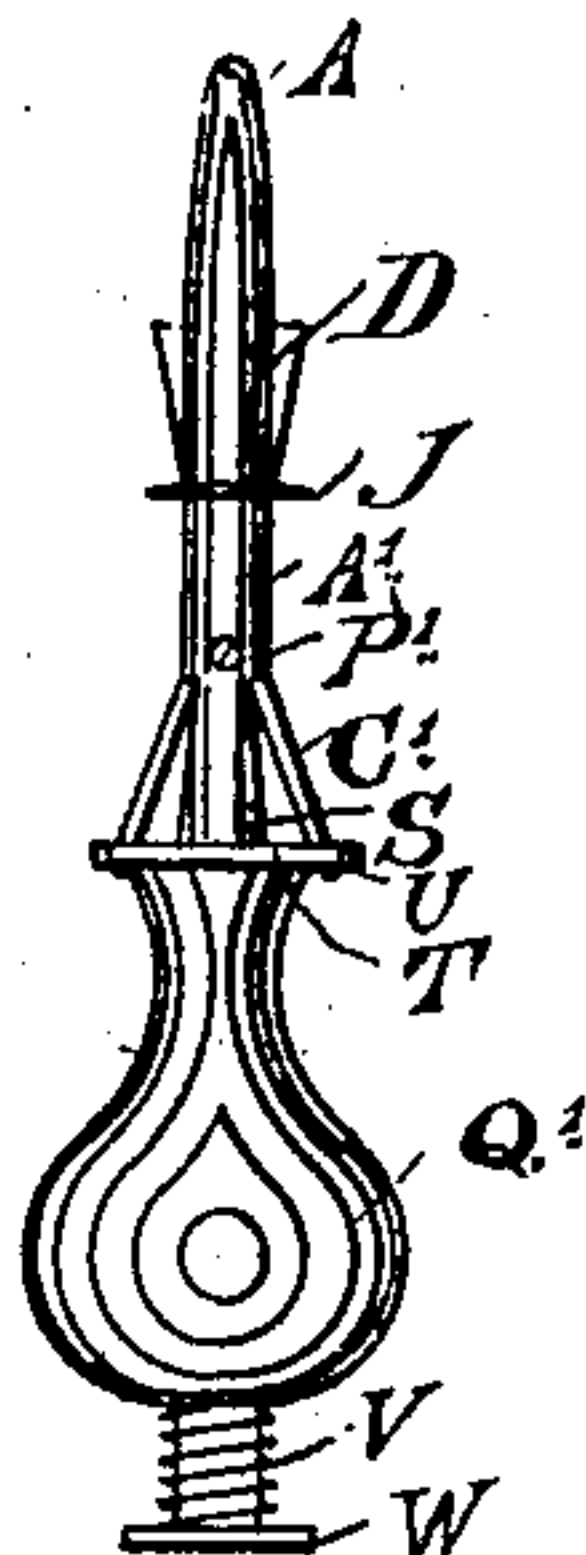


fig. 8.



fig. 9.



fig. 10.

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# UNITED STATES PATENT OFFICE.

ROBERT CALDWELL, OF AUCKLAND, NEW ZEALAND.

## LANCET.

SPECIFICATION forming part of Letters Patent No. 677,756, dated July 2, 1901.

Application filed August 2, 1900. Serial No. 25,654. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT CALDWELL, engineer, a subject of Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, and a resident of the city of Auckland, in the provincial district of Auckland and Colony of New Zealand, have invented a certain new and useful Lancet for Rendering Easier the Milking of Cows and other Female Animals, of which the following is a specification.

The purpose of the instrument the subject of this invention is to cut through and open the obstruction that in some cases forms in the inside of the lower end of the cow's teat, or any other female animal's teat, so that the milk may thereby be made to flow more readily and freely.

The instrument comprises a rod so made that one end is taper-shaped, with a more or less blunt point, for the purpose of being passed up the animal's teat, and having a shoulder to prevent it being pushed up too far. Tempered pieces of steel are so held within the rod that they can by the operation of springs, joints, pins, and such like be made to slightly thrust out their upper ends, which are suitably sharpened, through openings in the rod, which should be done after the instrument has been passed up the teat, so that upon being withdrawn the necessary cutting will be effected.

The accompanying drawings show ten figures representing the instrument and its different parts.

Figure 1 indicates one form of instrument, showing the jacket and pin pressed up and the blades of the knives thrust out. Fig. 2 represents the same form of instrument, showing the jacket and pin drawn down and the blades within the probe. Fig. 3 shows the rod fitted into the cylinder, shoulder, slot, and worm. Fig. 4 shows the jacket, shoulder, and pin-hole. Fig. 5 is a plan of the jacket and shoulder. Fig. 6 shows one form of knives with hole for pin to slide in. Fig. 7 shows another form of knives with hole for pin to slide in. Fig. 8 represents another form of instrument, showing the knives differently arranged and with the knives thrust

out. Fig. 9 shows the arrangement and jointure of these knives. Fig. 10 shows one of these knives separately.

In the form of instrument shown in Figs. 1 and 2, A is the rod, screwed or otherwise joined to the cylinder G at the shoulder J. B represents the slots in the rod A through which the blades D of the knives C are pressed out and through which they are withdrawn. The knives C, with their upper ends D sharpened to a fine blade formation, having the pin-hole E, as shown in Figs. 6 and 7, and holder F for keeping the knives C in position and together, are placed within the cylinder G and rod A in such a way that the blades D rest with their sharp and outer edges just inside the slots B and the pin-hole E just inside the slots H. The jacket M, having the shoulder N on it, is then placed over the cylinder G in such a way that the holes O fit over the slots H, and the pin P is passed through the holes O, slots H, and hole E. The catch L' engages the incision L, so that the knives C are held firmly within the cylinder G and rod A. The handle Q is then screwed onto the cylinder at K, and it is then ready for use.

The form of instrument shown in Fig. 8 differs somewhat from the foregoing in some of its parts, but the main parts, rod A, slots B, blades D, and shoulder J, forming the principle of the invention, are the same in both forms of instrument and the other parts are mere details of operation. The knives C', as shown in Figs. 9 and 10, have a different form, being separate and fitted together at R when they are placed in the rod A' and held by the pin P'. A slot formation is provided in the rod A' into which the knives C' are fitted. The shoulder J fits over this slot and keeps the knives C' in place, besides fulfilling its main purpose of preventing the rod A from passing too far into the animal's teat. The two sides of the rod A' are beveled at S to allow the knives C' to close in on the rod A' when they are being operated. Incisions are made in the shoulder T, through which the lower ends of the knives C' project, and the ends are kept in position by the rivets U. A handle Q', either formed in one piece with



the shoulder T or screwed or otherwise fastened thereto, envelops the rod A' and surmounts a spiral spring V, which spring is kept in position by a button W.

5 When it is desired to use the instrument shown in Figs. 1 and 2, the rod A is passed up the teat of the animal until stopped by the shoulder J, and the jacket M, shoulder N, and pin P are pressed upward, whereby the  
10 hole E is opened out by the pressure of the pin P, and the knives C extend so that the blades D are thrust out through the slots B. This being done, the rod A is drawn down, whereby the blades D so cut through the  
15 growth or obstruction that the milk afterward flows freely.

The instrument shown in Fig. 8 has a different action to that in Figs. 1 and 2. It is shown with the blades D extended or thrust  
20 out, which is effected by the shoulder T being brought down with the handle Q' onto the spiral spring V. When the downward pressure of the shoulder T is released, it rises and takes the strain off the knives C', so that the  
25 blades D are withdrawn inside the slots B. It is when the blades D are thus withdrawn that the rod A is passed into the teat in the same way as before described. Then the shoulder T is drawn down, which compresses  
30 the lower ends of the knives C', whereby the upper ends or blades D are thrust out through the slots B, so that when the instrument A is drawn down the blades cut through the growth or obstruction, so that the milk will  
35 flow freely.

The knives C are shown in Figs. 6 and 7 with the blades D resting on one another; but they can be so shaped that the backs of the blades D will rest against one another with-  
40 out overlapping, and the pin P, acting in the hole E, will thrust out the edges of the blades D in the manner already described. The blades can be operated by drawing down the jacket M instead of pressing it upward, as  
45 the pin P will open out the hole E by the downward as well as the upper pressure. These two forms of operating the blades D are given and others might be given; but the illustration is sufficient to show the principle of the  
50 invention; further, more than two slots B and two blades D can be used if thought necessary.

Having fully described my invention, what I desire to claim and secure by Letters Patent is—

1. A lancet comprising a slotted body, knives mounted in the body to move in and out of the slots thereof, said knives being normally held within the body by spring-pressure, and a sliding sleeve-like member loosely  
60 mounted on the body and connected with the knives to move them in and out of the slots as it is slid up and down on the said body, said connection also serving to retain the slid-

ing sleeve-like member on the body of the instrument, substantially as described. 65

2. A lancet, comprising a body provided with opposing slots, knives mounted in the body to move in and out of the said slots, said knives being normally held within the body  
70 by spring-pressure, a sleeve-like member mounted to slide on the body, and means for connecting the said sliding member with the knives to move the latter in and out of the slots as the sleeve-like member is slid back  
75 and forth on the body, said means also serving to retain the sleeve-like member on the body and limit its movement thereon, substantially as described.

3. A lancet, comprising a cylinder provided  
80 with opposite longitudinal slots, a rod provided with slots, knives mounted in the rod and cylinder and adapted to have their cutting edges project out through the slots of the rod, and a sleeve loosely mounted on the  
85 cylinder and carrying a transverse pin, said pin passing through the slots of the cylinder and between the shanks of the knives, substantially as described.

4. A lancet, comprising a slotted cylinder,  
90 a rod secured to one end of the cylinder and provided with slots, a collar at the junction of the rod with the cylinder, knives mounted in the cylinder and rod, and a sleeve loosely  
95 mounted on the cylinder and carrying a pin, said pin passing through the slot of the cylinder and between the shanks of the knives, substantially as described.

5. A lancet, comprising a slotted cylinder,  
100 a rod secured to and projecting from the cylinder and provided with slots, knives projecting from a holder and mounted in the cylinder and rod, a catch carried by the holder of the knives and engaging the cylinder to hold  
105 the knives in position, and a sleeve loosely mounted on the cylinder and carrying a pin, said pin passing through the slot of the cylinder and between the shanks of the knives, substantially as described.

6. A lancet, consisting of a cylinder having  
110 one end notched and provided with a longitudinal slot, a rod secured to and projecting from the cylinder, said rod being provided with slots, knives projecting from a holder and provided with an opening between their  
115 shanks, said knives being mounted in the cylinder and rod, a catch on the holder of the knives and engaging the notched end of the cylinder, a sleeve mounted loosely on the cylinder and a pin passing through the sleeve,  
120 the slot of the cylinder and the opening between the shanks of the knives, substantially as described.

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Witnesses:

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