

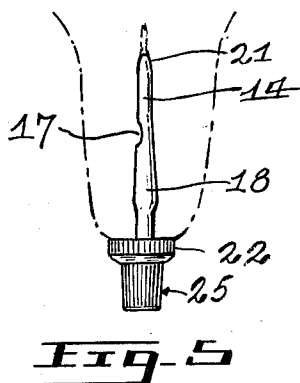
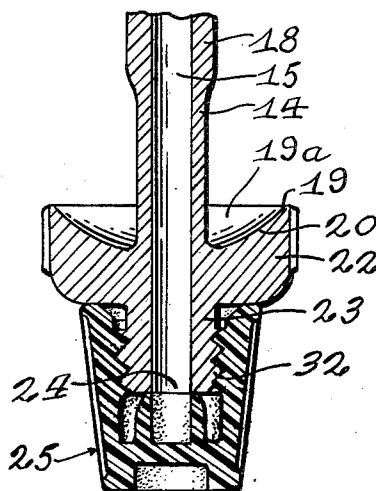
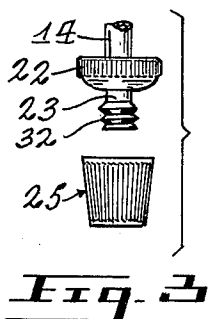
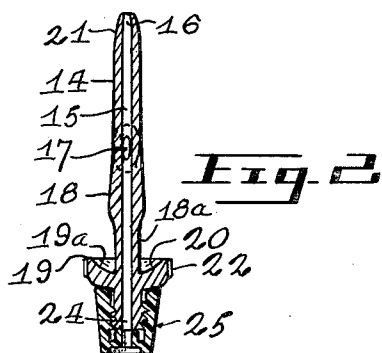
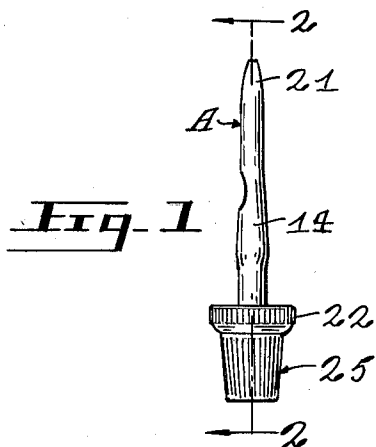
April 24, 1962

E. S. TURNER ETAL

3,030,960

TEAT DILATOR

Filed May 2, 1960



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3,030,960

TEAT DILATOR

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Filed May 2, 1960, Ser. No. 26,048

Claims priority, application Canada Aug. 21, 1959

1 Claim. (Cl. 128—348)

This invention relates to a teat dilator for insertion into the teat canal of a bovine or caprine animal, particularly cows and goats.

There is now employed a teat dilator having a dilating stem, and a laterally extending base limiting the extent of insertion and a screw cap for closure purposes. The cap is removable for milking with the dilator in place.

The present invention contemplates a dilator of this general type with the added feature of means which provides for the application and maintenance of a medicament in contact with the tip and adjoining regions of the teat orifice which are particularly susceptible to soreness and infection. More specifically, according to the invention, the base of the dilator is in the form of a cup which is adapted to abut the end of the teat. By placing medicament in this cup it can be maintained in continuous contact with the end of the teat.

Having thus generally described the invention a preferred embodiment of it will now be illustrated in the accompanying drawings in which

FIGURE 1 is a side elevation of the preferred dilator.

FIGURE 2 is a longitudinal cross-section along the line 2—2 of FIGURE 1.

FIGURE 3 is an exploded view of the lower portion of the dilator with the sealing cap removed.

FIGURE 4 is a greatly enlarged cross-section of the lower portion of the dilator with the cap in place.

FIGURE 5 shows the dilator in place.

Referring in detail to the drawings, the dilator A is made up of a tubular stem 14 having a longitudinal bore 15. The bore 15 extends from an end opening 16 at the thin end 21 of the stem 14 to an opening 24 at the other end 23 of the stem. A lateral opening 17 is provided in the stem to communicate with the bore 15. A tapered stem 14 gradually widens from thin rounded tip to an enlarged portion 18 and then narrows to a neck portion 18a. The stem 14 towards the end 23 carries a flange or base 22.

In accordance with the invention the base 22 has a cup-like upper part provided with a concave surface 20 bounded on the outside by a rim 19 and on the inside by the stem 14. The stem 14 continues below the body 22 to terminate in an exteriorly threaded nipple 32. The nipple 32 receives an internally threaded closure cap 25 preferably of the form indicated.

The dimensions of the cup portion of the dilator are as follows. The diameter of the base is within the range from about $\frac{1}{4}$ to about $\frac{3}{4}$ of an inch, for a stem within the range from about .060 to about .175 of an inch. The depth of the cup at its maximum is within the range from about $\frac{1}{32}$ to about $\frac{5}{32}$ of an inch.

The rather shallow depression of the cup is to allow the end or orifice of any size teat to seat itself into the medication when the dilator is in place. A deeper and more pronounced cup will accommodate the small teat of a Jersey heifer, but prohibit the larger teat of a Holstein, which has been milked for several years.

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The applicants have found that a cup of the form defined is effective in embracing the end of the teat and will retain medicament in contact with the teat for considerable time without annoying the animal. A cup portion of the preferred shape and dimensions has been found highly satisfactory. It will be understood, however, that this may be varied somewhat within the scope of the invention provided that the cup portion is adequate to retain a medicament and not too embracing to interfere with easy application and removal of the device. For milking, the cap 25 merely has to be removed, to be replaced after milking.

The teat dilator may be made of any suitable material as will be understood by one skilled in the art. It may for example be of metal, e.g. aluminium, or of a plastic material like polyethylene, nylon or any other suitable material. Or the different parts, for example the cap 25, may be made of one material and the stem and cup of another material.

We claim:

A teat dilator, comprising, a tubular stem having one end for insertion in the milk duct of a bovine teat and the other for extending outwardly from the teat, an annular flange extending laterally from the stem close to its outwardly extending end leaving a relatively long portion of the stem protruding in the insertion direction and a relatively short portion extending in the opposite direction, said flange having a cupped surface adjoining the long portion of the stem and adapted to abut the end of the teat when the dilator is in place in the milk duct, the long portion of the stem being stepped in diameter to have a relatively narrow portion adjacent to said cupped surface for engagement by the teat in the region of the sphincter muscle and a wider portion towards the insertion end adapted to resist withdrawal past the sphincter muscle, the stem having an axial bore extending from one end to the other and at least one opening extending from the bore to the surface of the elongated portion, the cupped surface forming with the adjoining portion of the stem a medicament applicator adapted to abut the end of the teat as it is retained thereagainst by the action of the sphincter muscle, said cupped portion terminating in a narrow annular outer rim presenting a relatively acute edge adapted to embed itself into the teat to form therewith a seal for retaining medicament between the cupped surface and the teat, the said thin portion of said stem having a diameter within the range of about .060 to about .175 of an inch, the flange at the cupped surface having a diameter within the range from about one-quarter to about three-quarters of an inch, and the cupped surface having a depth at the maximum from about one-thirty-second to about five-thirty-seconds of an inch.

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