(No Model.)

J. H. GUNNING.

VETERINARY APPLIANCE.

No. 540,835. Patented June 11, 1895.

Fig 1.

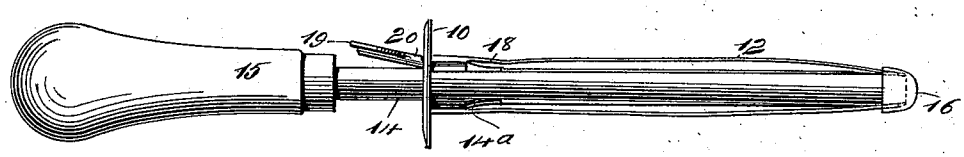


Fig 2.

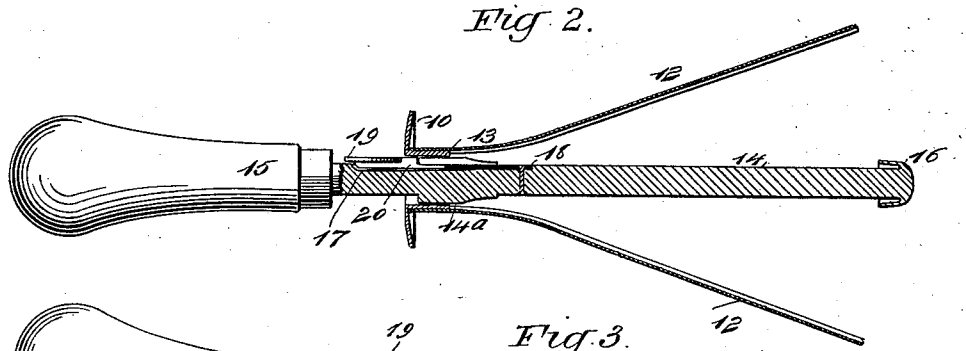


Fig 3.

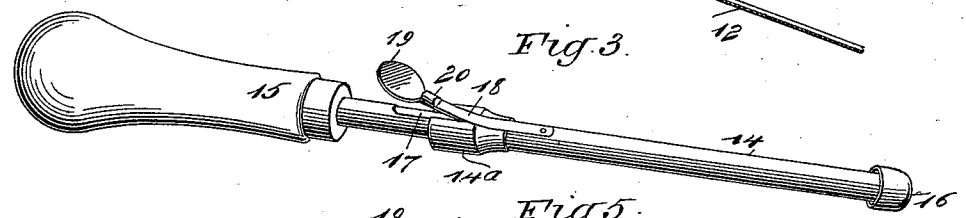


Fig 5.

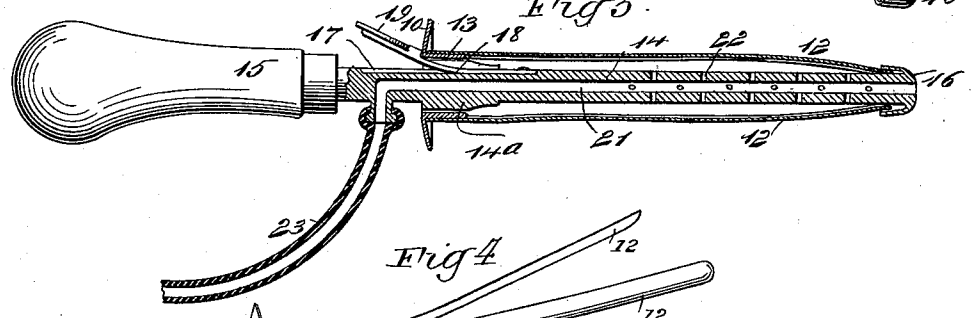
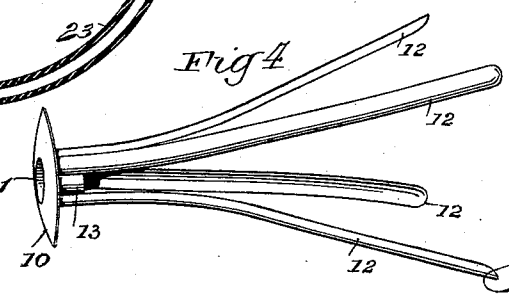


Fig 4



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VETERINARY APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 540,835, dated June 11, 1895.

Application filed July 9, 1894. Serial No. 516,956. (No model.)

To all whom it may concern:

Be it known that I, JOSEPHUS HENRY GUNNING, of New York city, in the county and State of New York, have invented a new and Improved Cannula, of which the following is a full, clear, and exact description.

The object of the invention is to so construct a cannula that it may be conveniently deposited within the uterus of a mare or other breeding animal, operating when in place to maintain the mouth of the uterus open, and the entire uterus in a position favorable for the reception of the charge of the male in service.

Another object of the invention is to supply an instrument that may be applied to a wound, or to any opening or incision in the body, for the purpose of distending its walls and draining, exploring, operating upon, or dressing the same.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the instrument in position to be introduced into a cavity of the body. Fig. 2 is a longitudinal section of the instrument, illustrating the cannula in the position it occupies in service and its introductory stem in position to be withdrawn. Fig. 3 is a perspective view of the introductory stem. Fig. 4 is a perspective view of the cannula proper expanded; and Fig. 5 is a section taken longitudinally through the instrument, illustrating the adaptation of the same for washing cavities.

In many instances the service of a stallion is not productive of the desired results, because the mouth of the uterus of the mare is closed either by a gelatinous substance present in the generative organs of such animals, or from other causes, and in consequence the sexual fluid can not be received by the uterus.

The prime object of this invention is to overcome such difficulties, and provide an instrument which when introduced into the uterus will open its mouth and maintain it in that position during copulation, and insure an uninterrupted course for the sexual fluid into the body of the uterus, leading almost invariably to conception.

The cannula proper consists of a suitable base piece and a series of expansible fingers attached thereto, the base piece being provided with an unobstructed through bore or opening for the free passage therethrough of the sexual fluid and the fingers being adapted to expand and maintain open the neck of the uterus during copulation. The base piece in its preferred form is in the form of a plate 10 which when the device is in position forms a face plate for the uterus, the plate having a central opening 11, and a short tubular neck 13, to which the series of expansible fingers 12 are permanently secured, the plate and the neck having an unobstructed through bore or opening. The outer surfaces of the elastic fingers are convexed while their inner surfaces are preferably concaved. When the fingers are not confined at their free ends, and the cannula is in its expanded or working position, the fingers curve outwardly in opposite directions, preferably from a point near the face plate 10, but the curvature may commence at the said plate, if found desirable, whereby in the expanded position of the cannula, the fingers at their free ends are decidedly outwardly flared in different directions. It will be seen that the face plate 10 virtually forms concavo-convex flange for the body of the cannula at its contracted end, and that the body when in its expanded position approximates the shape of the frustum of a cone.

The introductory stem 14 of the instrument, or that section thereof which is adapted to carry the cannula and introduce it into the desired cavity, is preferably made round in cross section, and is provided with a handle 15 at one end, and a cap ferrule 16 at the opposite end, the outer surface of the said ferrule being more or less cylindrical and smooth, although it may be given other shapes if in practice it is found desirable. Near the handle end the stem 14 is of increased thickness as at 14^a, and this thickened end is gradually reduced in diameter at its forward portion until it assumes the diameter of the stem proper; or the outer end of the enlarged section 14^a may be made abrupt to form a shoulder. A longitudinal recess 17 is made in the upper face of the stem, the recess extending through

the enlarged section 14^a. This recess is adapted to receive a spring latch 18, secured at its forward end by a pin, or the equivalent thereof, in the forward portion of the recess, while the rear end of the latch, which normally stands at an elevation from the stem, is made to terminate in a thumb or finger plate 19, and adjacent to this plate an offset 20, is formed upon the spring section of the latch. When the latch is depressed the upper surface of the offset will be practically flush with the upper surface of the enlargement 14^a of the stem.

When the instrument is to be used as an aid to conception, it is employed in the following manner: The cannula is carried over the introductory stem until the front plate thereof is received by the enlarged section 14^a of the said stem, the latch 18 being pressed down. The fingers are then gathered together and compressed around the stem, and the stem is drawn outward until the clips of the fingers are received by the ferrule 16, as shown in Fig. 1, whereupon the latch 18 will be elevated sufficiently to bring the offset 20 back of the front plate, preventing the cannula from slipping. The instrument in this position is introduced into the vaginal canal, and the stem, together with the cannula, is passed up the cervical canal of the uterus until the flange or front plate of the cannula bears against the neck of the uterus, whereupon the latch 18 is depressed and the stem is forced forward, thereby relieving the tips of the fingers from the ferrule 16, permitting the cannula to expand and assume the position shown in Figs. 3 and 4. The stem is then withdrawn, leaving the cannula in the uterus. It may here be remarked that the fingers 12 may be made substantially the length of the cervical canal, and when the cannula is so applied, owing to its peculiar construction, the mouth of the uterus will be held open, and the cervical canal expanded to such an extent as to afford an unobstructed passage into the body cavity of the uterus. After copulation the cannula is removed from the uterus through the medium of a cord attached prior to its introduction, and which is readily grasped at the vagina.

The cannula is applied to wounds, incisions, or openings to be drained or operated upon, in the same manner as above described, the cannula being introduced until the face plate shall cover the mouth of the wound, or surround the opening connecting with the channel to be drained. It is obvious that the expanding cannula will afford ample room for the use of an instrument, and will likewise enable a cavity to be readily inspected; and in the event the cavity in connection with which the cannula is to be used is to be washed, the stem, as shown in Fig. 5, may be made tubular or provided with a longitudinal, substantially central opening 21, having an outlet at the outer end of the stem, and a series of small outlets 22 along the outer face of the stem, connecting with the interior opening, while the receiving end of the opening 21 may be shaped to receive a tube 23, connected with a pump of any description, or with a bulb.

It will be observed that the cannula is virtually a membered tube, and when the free ends of the members are received in the ferrule or cap of the stem, they are prevented from chafing or irritating during their passage into the cavity.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The herein described cannula for the purpose specified, the same consisting of a base piece provided with a through bore, a series of spring fingers arranged in front of the base piece and adapted to spread apart by their own elasticity, and means for holding the spring fingers in a closed position, substantially as set forth.

2. The herein described cannula for the purpose specified, the same consisting of a base piece provided with a through bore, a series of spring fingers arranged in front of the base piece and adapted to spread apart by their own elasticity, a cap for holding the spring fingers in a closed position, and means for moving the cap independently of the fingers to release the latter, substantially as set forth.

3. The herein described cannula for the purpose specified, the same consisting of a base piece in the form of a plate, and a series of spring fingers located in advance of the plate, and adapted to spread apart by their own elasticity said plate having an opening for the free passage of the fluid, and projecting by its edge beyond the bases of the fingers, substantially as described.

4. The herein described cannula for the purpose specified, the same consisting of a base piece having an opening for the passage of the fluid, and a series of spring fingers extending forwardly from said base, and adapted to spread apart by their own elasicity, the base piece forming a face plate for the cannula when the latter is in position and being free from rearward projections at its outer side, substantially as described.

5. The herein described cannula for the purpose specified, the same consisting of a base comprising a plate and a short tubular member in front of said plate, and a series of spring fingers held to the base piece, and projecting forwardly beyond the same in outwardly curved form when expanded, the whole being adapted for retention, substantially as described.

6. The herein described instrument comprising a cannula having spring fingers adapted to spread apart by their own elasticity, and an introductory stem, the stem having means for temporarily securing the cannula thereon, and having when released a free sliding movement relatively to the cannula, to permit of removing the stem, substantially as described.

7. The herein described instrument comprising a cannula having an opening and a series of expansible fingers having free ends,

and an introductory stem over which the cannula fits, the stem having a device for temporarily confining the free ends of the fingers, and the stem further being removable from the cannula when the fingers are released, whereby the stem may be removed leaving the cannula in position, substantially as described.

8. The herein described instrument comprising a cannula having an opening and a series of expansible fingers, and a detachable introductory stem carrying a cap at its forward end adapted to temporarily confine the fingers, the stem with its cap being free to be removed from the cannula when the fingers are released, substantially as described.

9. The combination, with a cannula, substantially as described, of an introductory stem provided with a latch, and a cap or ferrule, temporarily securing the cannula to the stem, the stem with its latch and cap being removable from the cannula when the fingers are released as and for the purpose set forth.

10. An introductory stem for a cannula, provided with a cap or ferrule adapted to guard and receive one end of the cannula, and also provided with a latch for locking engagement with the cannula, as and for the purpose set forth.

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