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(54) **Animal birth aid device**

(57) Abstract

The invention provides an animal birth aid device to assist a veterinarian during the delivery of an animal foetus, for example during calving, the device comprising a head adapted to be secured to a handle, the head comprising a proximal end and a distal end, and a recess formed at or adjacent the distal end. <Figure 1>



“Animal Birth Aid Device”Field of the invention

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This invention relates to an animal birth aid device, an in particular a device to assist a veterinarian or the like during the delivery of an animal foetus, for example during calving.

10 Background of the invention

It is common during the birthing process that an animal foetus such as a calf comes to birthing with the mother exhausted or distressed, and/or with the foetus out of position, and in such situations some form of human intervention is generally necessary.

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In such cases the conventional procedure is for a veterinarian, farmer, or any other suitably experience person to advance one arm into the uterus in an attempt to reach the calf and assist the birthing by pulling the calf from the womb into the uterus and outwardly therefrom. However this process is often complicated by various factors, for example the amniotic sac may not have been ruptured, and can be difficult to break, preventing access to the calf. Even when the amniotic sac has been breached, the calf or other animal foetus is often located at or just beyond touching distance in the womb, thereby preventing a sufficient grip to be secured by the person attempting to assist in the birth. Furthermore, the size of the uterus and presence of bodily fluids create a constricted yet slippery environment into which it is only possible to insert a single arm, making it very difficult to obtain a sufficient hold on the calf, or to correctly locate a rope or the like around a leg of the calf, which can result in breaking the calf's leg, or if significant time has elapsed, drowning of the calf in amniotic fluid.

It is therefore an object of the present invention to overcome the above mentioned problems by providing a simple to use device to assist in the birthing of an animal foetus.

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Summary of the invention

35 According to the present invention there is provided an animal birth aid device comprising a head adapted to be secured to a handle, the head comprising a proximal end and a distal end, and a recess formed at or adjacent the distal end.

Preferably, the head comprises a longitudinal axis extending between the proximal and distal ends, and wherein the recess comprises a bore extending transversely through the head and an opening extending from the distal end into the bore.

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04/01/2021

Preferably, the recess is substantially keyhole shaped.

Preferably, the opening onto the distal end defines a pair of opposed edges on the distal end.

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Preferably, the pair of opposed edges are bevelled.

Preferably, the opening at the distal end is constricted relative to the through bore.

10 Preferably, the birth aid device comprises a cutting member.

Preferably, the cutting member is provided on the distal end of the head.

Preferably, the cutting member is defined by one or more edges on the distal end.

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Preferably, the birth aid device comprises a camera.

Preferably, the birth aid device comprises a screen remote from, and operable to display an image captured by, the camera.

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Preferably, the birth aid device comprises a light.

Preferably, the head comprises a surgical grade material.

25 Preferably, the birth aid device comprises a handle secured to the head.

Preferably, the head is reversibly secured to the handle.

Preferably, the head is substantially cylindrical in the longitudinal direction.

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Brief description of the drawings

The present invention will now be described with reference to the accompanying drawings, in which:

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Figure 1 illustrates a side elevation of an animal birth aid device according to a preferred embodiment of the present invention;

Figure 2 illustrates a perspective view of a head of the animal birth aid device shown in Figure 1;

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Figure 3 illustrates a side elevation of the head;

04/01/2021

Figure 4 illustrates the birth aid device as shown in Figure 1 being secured to a loop of rope which is located around the hand of a user;

- 5 Figure 5 illustrates the loop of rope, still around the user's hand and with the head of the device secured, being advanced into a bovine uterus and located around a free end of a leg of a calf;

Figure 6 illustrates the arrangement shown in Figure 5 following removal of the user's hand, and with the loop of rope being retained in position about the leg of the calf by means of the birth aid device;

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Figure 7 illustrates the birth aid device being withdrawn following the firm securement of the loop of rope to the leg of the calf; and

- 15 Figure 8 illustrates the calf being drawn from the birth canal using the rope secured to the leg of the calf.

Detailed description of the drawings

- 20 Referring now to the accompanying drawings there is illustrated an animal birth aid device, generally indicated as 10, for use in assisting in the birthing of an animal foetus, for example a calf, and in particular when human intervention is required when the mother is too exhausted to give birth naturally, or when the mother or foetus is distressed for whatever reason.

- 25 The device 10 comprises a head 12 which is secured, preferably reversibly, to an elongate handle 14 which preferably comprises a relatively slender shaft 16 and a grip 18, preferably located at the end of the shaft 16 opposite the head 12. It will be appreciated that the particular shape and location of the grip 18 may be varied once the underlying functionality is maintained. The head 12 and shaft 16 may be formed from any suitable material or combination of materials, and are preferably formed
- 30 from a surgical grade material. The head 12 may be formed from a different material to the shaft 16. The shaft 16 may be arranged to embody a suitable level of flexibility to assist in positioning the head 12 during use, as hereinafter described, and may for example be formed from stainless steel and having a diameter of 4mm, while the head 12 may be formed from a polymer such as Delrin® and having a diameter of in the range of 15mm to 20mm.

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The head 12 is preferably cylindrical and elongate in a direction along a longitudinal axis LL of the device 10, and comprises a proximal end 20 at which the shaft 14 is secured, and an opposed distal end 22. The proximal end is defined by a tapered shank 24 which may include a threaded bore (not shown) into which the end of the shaft 14 may be threaded to secure the head 12 and shaft 14 to

- 40 one another. The taper of the shank 24 reduces the likelihood of the head 12 catching and/or

damaging the uterus during removal. Similarly the outer circumferential lip of the distal end 22 is radiused to minimise the risk of tissue damage during insertion and removal.

The head 12 further comprises a recess 26 formed adjacent the distal end 22, and which in the preferred embodiment illustrated is substantially keyhole shaped, comprising a through bore 28 extending transversely through the head 12 relative to the longitudinal axis LL and located inboard of the distal end 22, and an opening 30 which extends from the distal end 22 into the bore 28, thereby facilitating access to the bore 28 from the distal end 22. The bore 28 is dimensioned to have approximately the same diameter as a length of conventional rope, for example in the range of 8mm to 10mm, while the opening 30 is reduced or constricted relative to the diameter of the bore 28, and may for example have a transvers width of approximately 6mm. In this way, and as will be described hereinafter, a length of rope to be used in pulling the foetus from the womb/uterus may be compressed and forced through the opening 30 into the bore 28, and the constriction defined by the opening 30 will then retain the rope in the bore 28 unless sufficient force is applied to remove same back through the opening 30. It will of course be understood that the above dimensions are exemplary and may be varied as required, in particular where the dimensions of the birth aid device 10 are altered to suit different animals.

The opening 30 defines a pair of opposed edges 32 which extend substantially diametrically across the distal end 22. The edges 32 are preferably bevelled or otherwise softened in order to assist in channelling and compressing the section of rope being forced through the opening 30 into the bore 28.

The opening 30 serves to divide the distal end 22 into two sections having a reduced surface area relative to the full cross section of the head 12, and this in combination with the edges 32 allow the distal end to be utilised, where necessary, to rupture the amniotic sack, preferably through a combination of pressure against the sack and a twisting motion, cutting the amniotic sack and allowing access to the animal foetus.

Thus in use and referring in particular to Figures 4 to 8 there is illustrated the normal sequence of steps in utilising the birth aid device 10 of the invention to assist in birthing an animal foetus. As noted above, if the amniotic sack is intact the head 12 of the device 10 can be inserted into the uterus and located against the amniotic sack at the entrance to the womb. Sufficient pressure, along with a twisting motion about the longitudinal axis LL, will force the two sections of the distal end 22, in particular the edges 22, to cut the amniotic sack to provide access to the foetus.

Referring to Figure 4, prior to insertion of the device 10 into the uterus to effect removal of the foetus, a length of rope R is provided with a loop at one end thereof, preferably by means of a slipknot which will allow the loop to be tightened around a leg of the foetus. The length of rope R is then secured to the device 10, preferably along the loop, by forcing the rope R through the opening 30 and into the

bore 28, where the rope R will be retained due to the restriction at the opening 30. The loop of rope R is then located loosely around the hand of the veterinarian or other operator.

- Referring to Figure 5, the operator then inserts their hand into the uterus, carrying the loop of rope, with the remaining length of rope R remaining externally of the uterus. The head 12 of the device 10 is therefore also advanced into the uterus, with the handle 14 being used as required to guide the head 12 towards the foetus, and in particular one or more legs of the foetus, around which it is desired to pass the loop of rope.
- Turning to Figure 6, once the loop of rope is at or advance over the end of the leg of the foetus the operator may remove their hand while retaining the head 12 in position within the uterus and holding the loop of rope R in position. The handle 14 can be used to further advance the loop of rope up the leg of the foetus to ensure a firm grip can be secured.
- At this point, and referring to Figure 7, the rope external of the uterus can be pulled taut in order to tighten the loop of rope around the leg, and once sufficiently tight the device 10 can be drawn outwardly such as to pull the rope free of the bore 28, allowing the head 12 to be fully withdrawn from the uterus.
- As illustrated in Figure 8, the rope can then be used in conventional fashion to pull the foetus free of the uterus. The device 10 of the invention thus provides a simple and effective means to assist in the birthing of an animal foetus, effectively constituting an second arm/hand to manipulate the rope in the tight and difficult confines of the uterus.

Claims

- 5 1. An animal birth aid device comprising a head adapted to be secured to a handle, the head comprising a proximal end and a distal end, and a recess formed at or adjacent the distal end.
- 10 2. An animal birth aid device according to claim 1 comprising a longitudinal axis extending between the proximal and distal ends, and wherein the recess comprises a bore extending transversely through the head and an opening extending from the distal end into the bore.
- 15 3. An animal birth aid device according to claim 2 in which the recess is substantially keyhole shaped.
4. An animal birth aid device according to claim 2 or 3 in which the opening at the distal end defines a pair of opposed edges on the distal end.
5. An animal birth aid device according to any preceding claim comprising a cutting member.

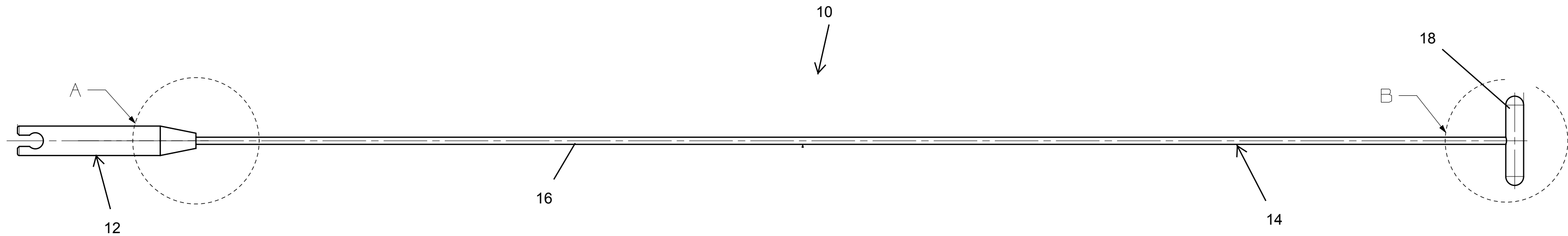


Fig. 1

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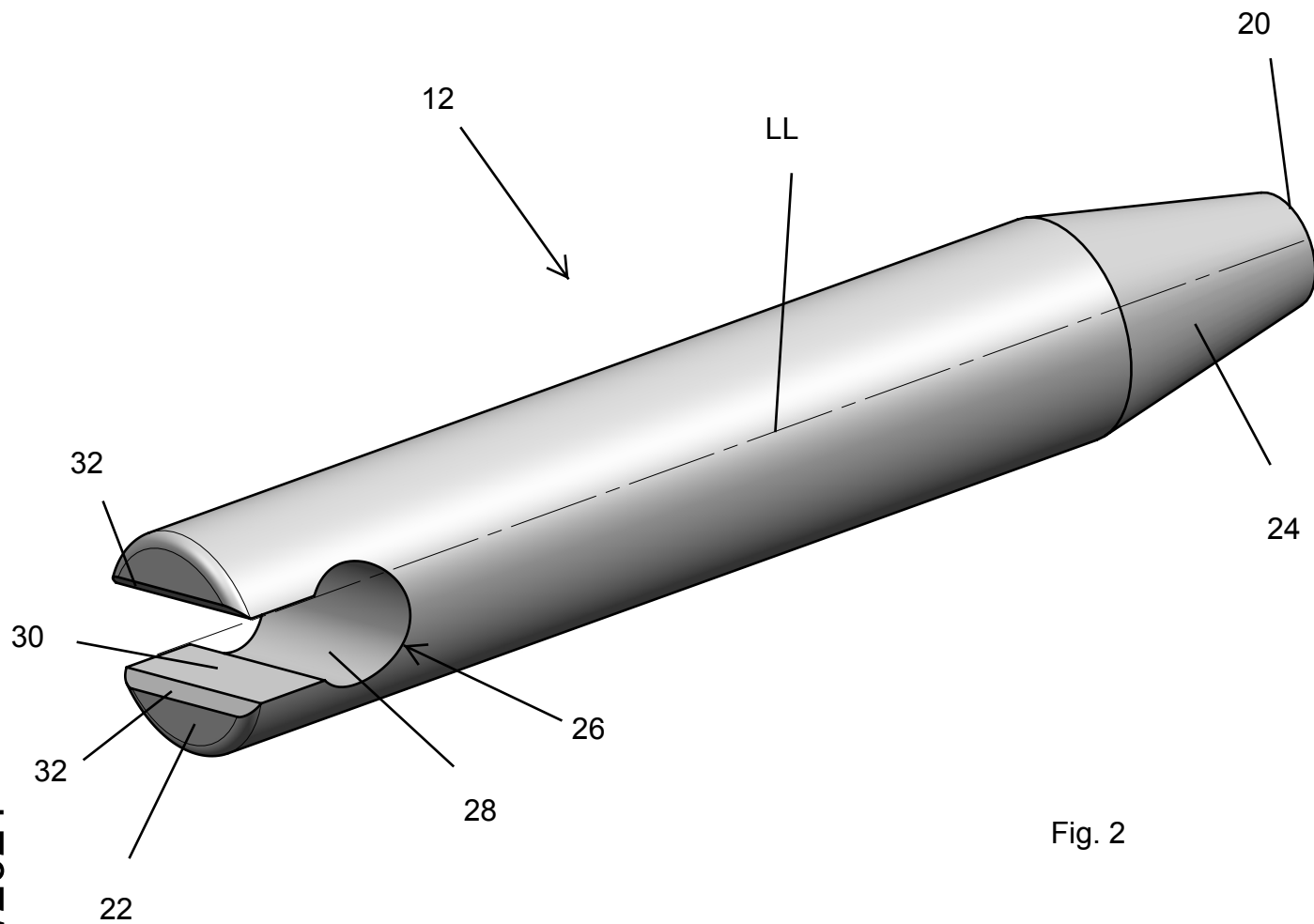


Fig. 2

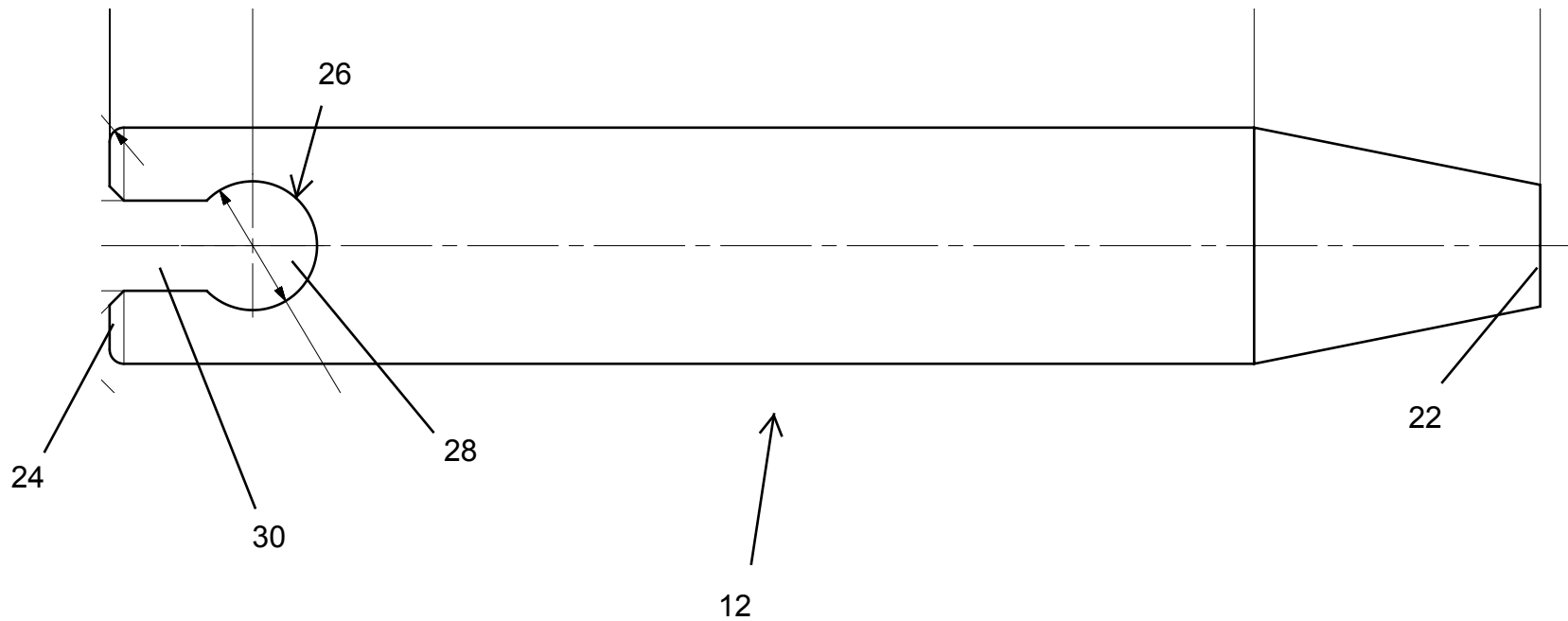


Fig. 3

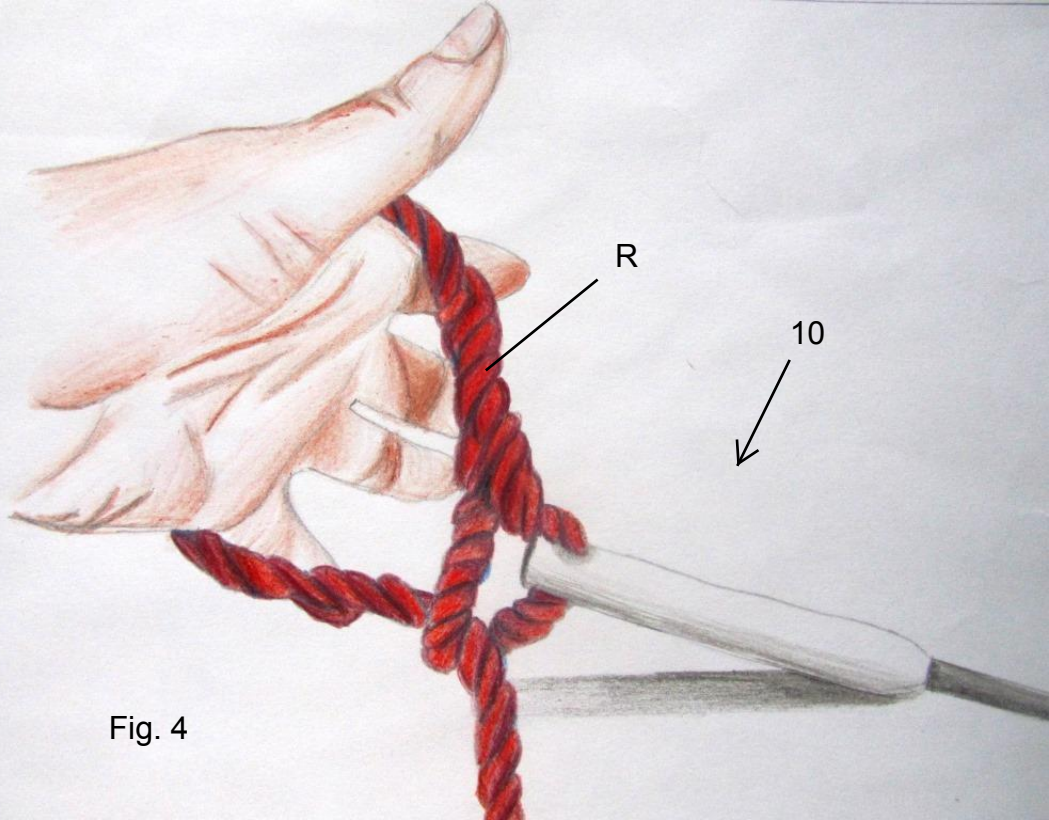
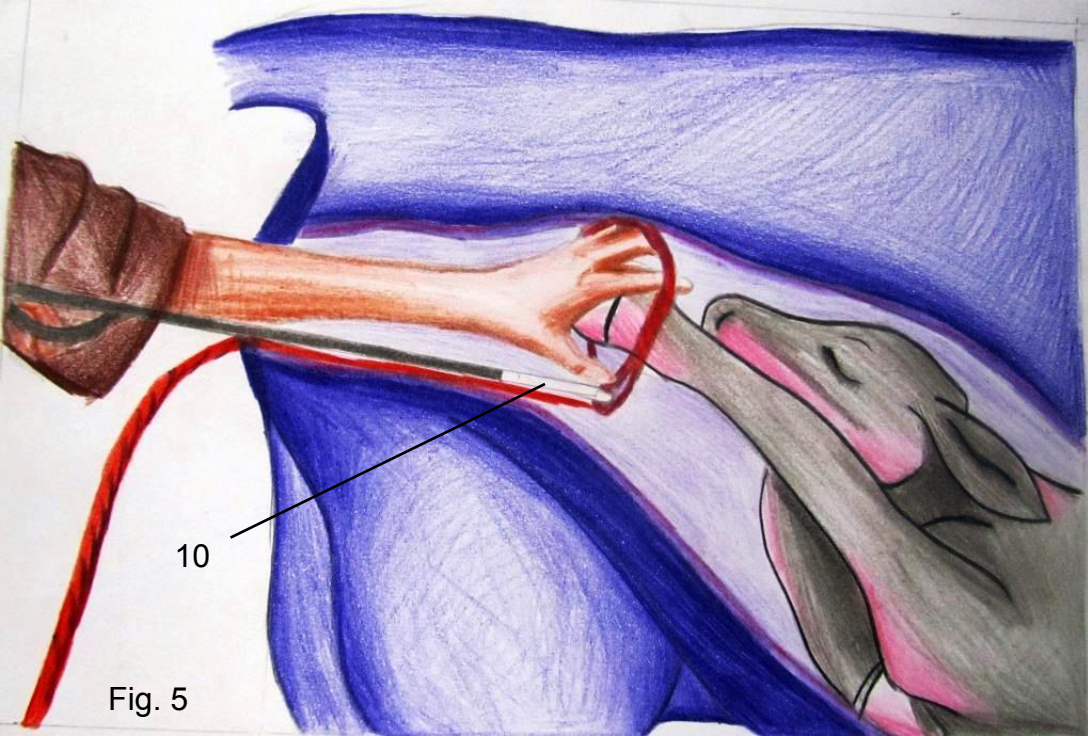


Fig. 4



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Fig. 5

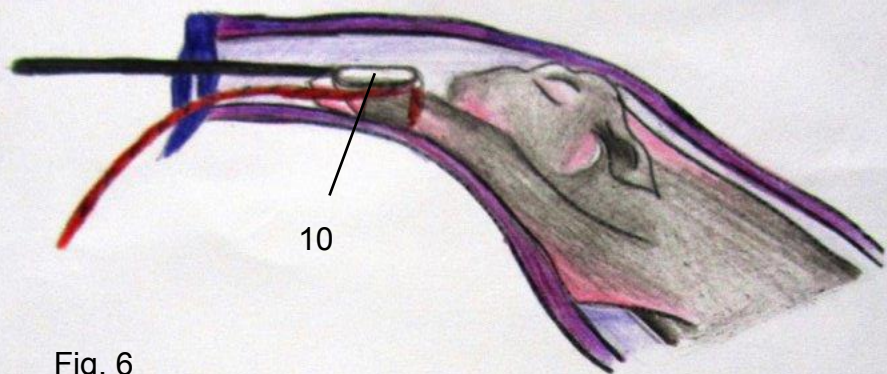


Fig. 6

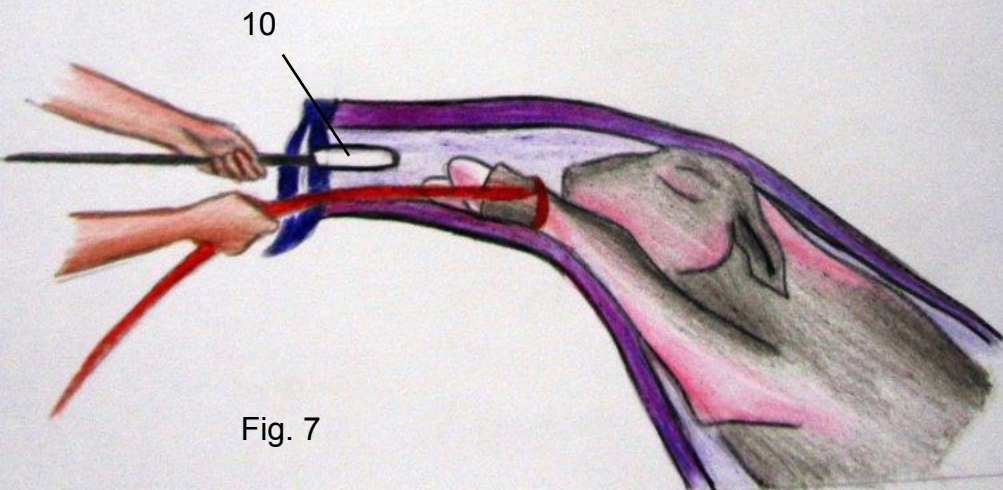


Fig. 7

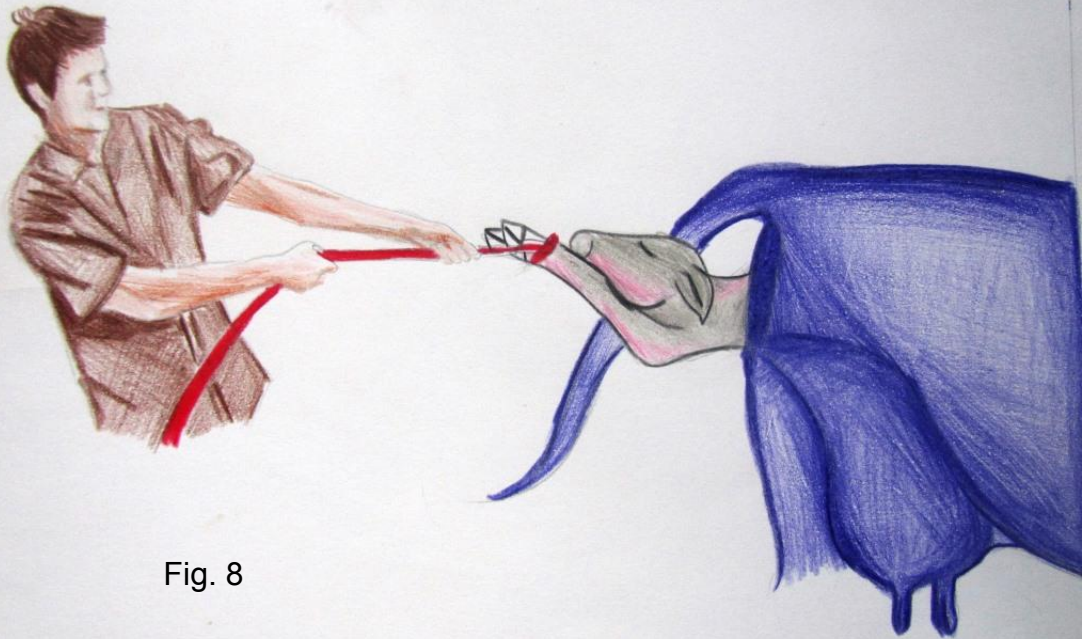


Fig. 8