

Aug. 28, 1928.

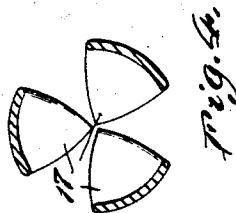
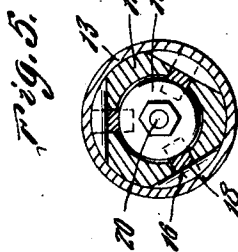
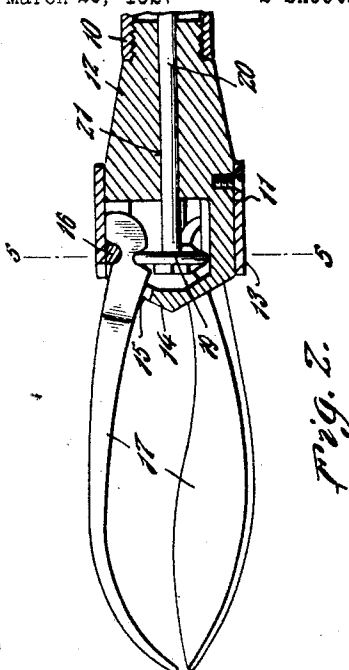
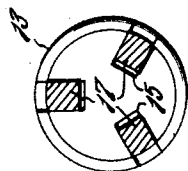
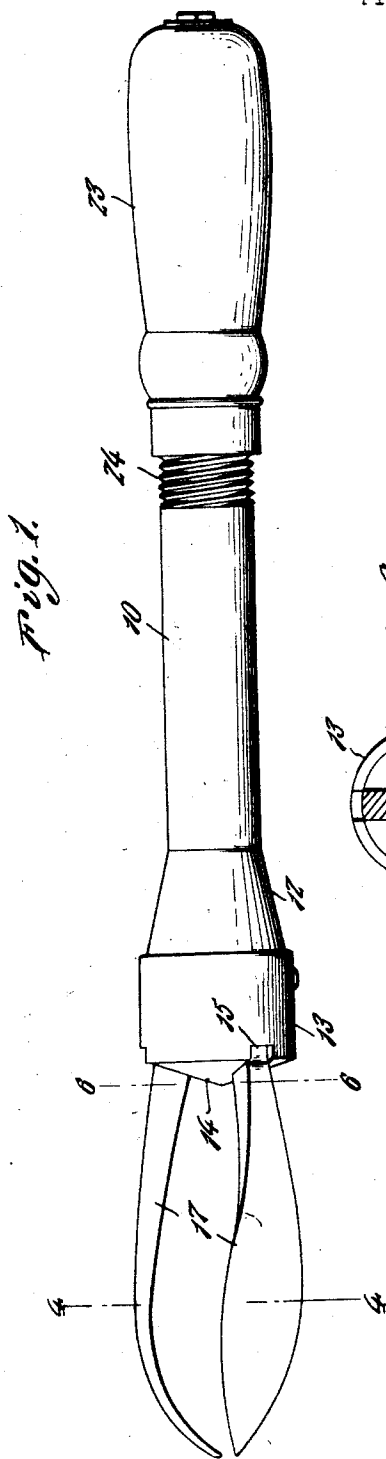
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F. LENESCHMIDT

FORCEPS

Filed March 25, 1927

2 Sheets-Sheet 1



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WITNESS:

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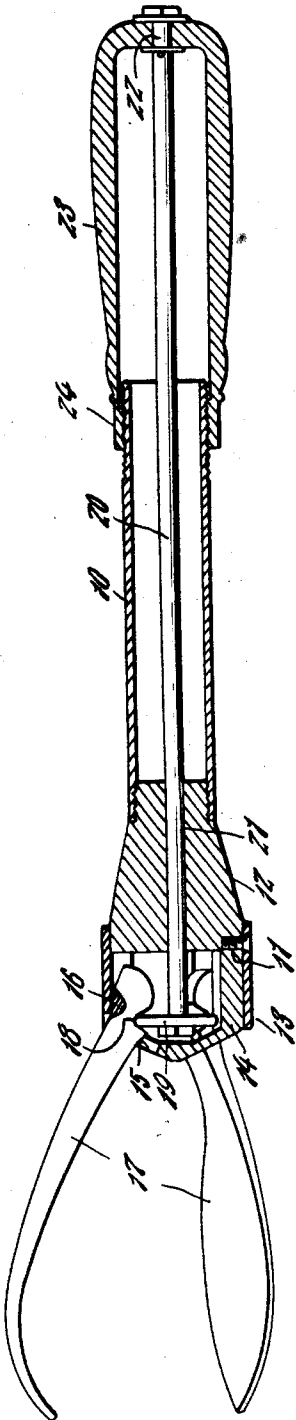
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Fig. 3.



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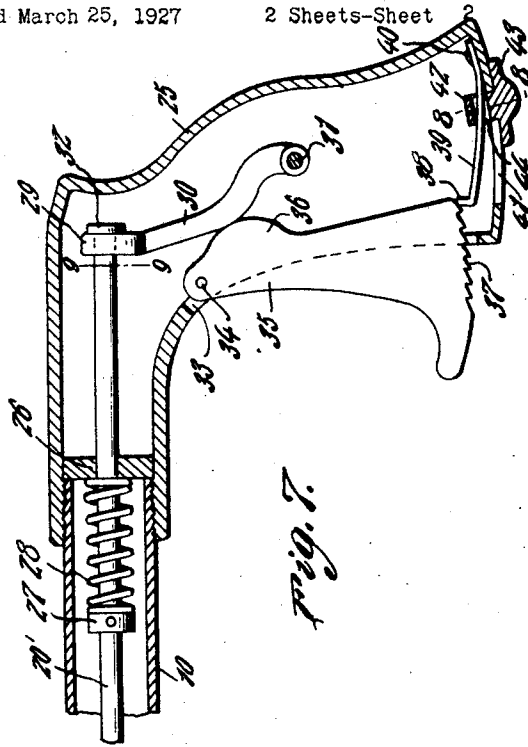


Fig. 7.

Fig. 9.

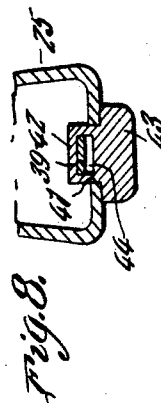


Fig. 8.

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UNITED STATES PATENT OFFICE.

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FORCEPS.

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This invention relates to veterinary instruments designed for use in assisting at the birth of animals, an object being to provide a forceps especially adapted for assisting in the delivery of pigs.

Another object of the present invention is the provision of an instrument as above stated which may be inserted within a sow or other animal with a minimum amount of inconvenience and pain, with less chance of injury to both the sow and the young pigs.

Another object of the invention is the provision of an instrument by means of which young pigs may be easily gripped by the sense of feel, so that delivery may be made quickly and in a humane manner.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claims.

In the drawings:—

Figure 1 is an elevation of an instrument constructed in accordance with the invention.

Figure 2 is a sectional view through one end of the instrument with the gripping fingers closed.

Figure 3 is a longitudinal sectional view through the instrument with the gripping fingers open.

Figure 4 is a section on the line 4—4 of Figure 1.

Figure 5 is a section on the line 5—5 of Figure 2.

Figure 6 is a section on the line 6—6 of Figure 1.

Figure 7 is a fragmentary view through one end of the instrument showing a different form of means for operating the gripping fingers.

Figure 8 is a section on the line 8—8 of Figure 7.

Figure 9 is a section on the line 9—9 of Figure 7.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the instrument is shown as comprising a hollow shank 10 which has secured upon one end a head 11, the latter being provided with threads 12 for engagement with the adjacent threaded end of the shank 10. The head 11 is recessed as at 13, while slots 15 are provided in the outer end 14 of the head to communicate with the recess.

Pivotally mounted upon pins 16 carried

by the head and extending through the slots 15 are the inner ends of gripping fingers 17. These fingers extend through the slots 15 and their outer ends are properly shaped so that when the instrument is in use they will grip the young animal with a minimum amount of danger of injury to the latter. Further, the shape of the fingers and their arrangement is such that the fingers may be closed and inserted within an animal with a minimum amount of inconvenience and danger of injury. The inner ends of the fingers 17 are notched as at 18 and the disk 19 which operates within the recess 13 engages within these notches. The fingers are preferably three in number and are freely movable upon the pivot 16 through the instrument of the disk 19.

The disk 19 is secured upon one end of a rod 20 and this rod passes through a guide opening 21 provided in the head 11 through the shank 10 where its opposite end has a swiveled connection 22 with a handle or grip 23. This handle has a threaded engagement with the shank 10 as shown at 24 and the character of the threads is such that rotation of the handle will impart a relatively rapid sliding movement to the rod 20. By manipulating the handle 23, the fingers 17 may be properly adjusted and held in adjusted position when the device is in use.

If desired, the instrument may be provided with a handle 25 which is shaped after the manner of pistol grip as shown in Figures 7, 8 and 9. When a handle of this type is employed, the rod 20' is preferably guided through an opening provided in a disk 26 at the adjacent end of the shank 10. A collar 27 is secured upon the rod and a spring 28 is interposed between this collar and the disk 26 so that the rod will be yieldingly forced in a direction to open the fingers 17. The rod is held by a fork 29 provided upon one end of an arm 30 and the latter is pivotally mounted as shown at 31 within the handle 25. A head 32 carried by the rod engages the fork.

The handle 25 is provided with an opening 33 and mounted for pivotal movement within this opening as indicated at 34 is a trigger 35. This trigger is provided with an offset or cam portion 36 to engage the cam 30 and when the trigger is moved pivotally inward, the rod 25 will be drawn inward against the action of the spring 28 to close the fingers 17. The lower edge of the trigger 35 is

toothed as indicated at 37 and these teeth are adapted to be engaged by the free end 38 of a flat spring 39, the latter being secured within the handle 25 as shown at 40. Operating through a slot 41 provided in the lower end of the handle 25 is the shank 42 of an operating button 43. This button 43 is movable upon the outside of the handle and the shank 42 is provided with an opening 44 which receives the spring 39. Normally, the button 43 is in the position illustrated in Figure 7 and when the trigger 35 is moved inward to force the rod 20' outward or in a direction to close the fingers 17, the free end of the spring 39 will engage the teeth 37 and hold the rod against movement in an opposite direction. By sliding the button 43, the spring 39 may be disengaged from the trigger 35 so that the latter will be free to swing upon its pivot, whereupon the spring 28 will move the rod 20' outward to open the fingers 17.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claims.

Having described the invention what is claimed is:—

1. A veterinary instrument comprising a shank, a head at one end thereof, notched gripping fingers pivotally carried by the head, a rod movable longitudinally of the shank and having one end within the head, a disk secured to the referred to end of the rod for engagement within the notches of the fingers to move the latter pivotally when the rod is moved longitudinally, spring means to move the rod in a direction to open the fingers, a handle at the other end of the shank, an arm pivotally mounted within the handle and having an operative connection with the end of the rod, a trigger pivotally mounted within the handle and engaging the

arm, whereby the latter may be actuated to operate the rod and move the fingers to a closed position and means engaging the trigger to prevent opening movement of the fingers.

2. A veterinary instrument comprising a shank, a head at one end thereof, notched gripping fingers pivotally carried by the head, a rod movable longitudinally of the shank and having one end within the head, a disk secured to the referred to end of the rod for engagement within the notches of the fingers to move the latter pivotally when the rod is moved longitudinally, spring means to move the rod in a direction to open the fingers, a handle at the other end of the shank, an arm pivotally mounted within the handle and having an operative connection with the end of the rod, a trigger pivotally mounted within the handle and engaging the arm, whereby the latter may be actuated to operate the rod and move the fingers to a closed position, a flat spring secured to the handle and engaging the trigger to hold the latter against movement in one direction and a button having a sliding engagement with the spring and operable to disengage said spring from the trigger.

3. A veterinary instrument comprising a head having an axial recess in one end and radially disposed slots extending from the recess, outwardly extending notched gripping fingers having their inner ends pivotally mounted within the slots and extending into the recess, a tubular shank secured to the other end of the head, a rod movable longitudinally through the shank and extending axially through the head into the recess, a disk carried by the rod within the recess for engagement within the notches of the fingers to move the latter pivotally when the rod is moved longitudinally, and means at the end of the shank to move the rod.

In testimony whereof I affix my signature.
FRED LENESCHMIDT.