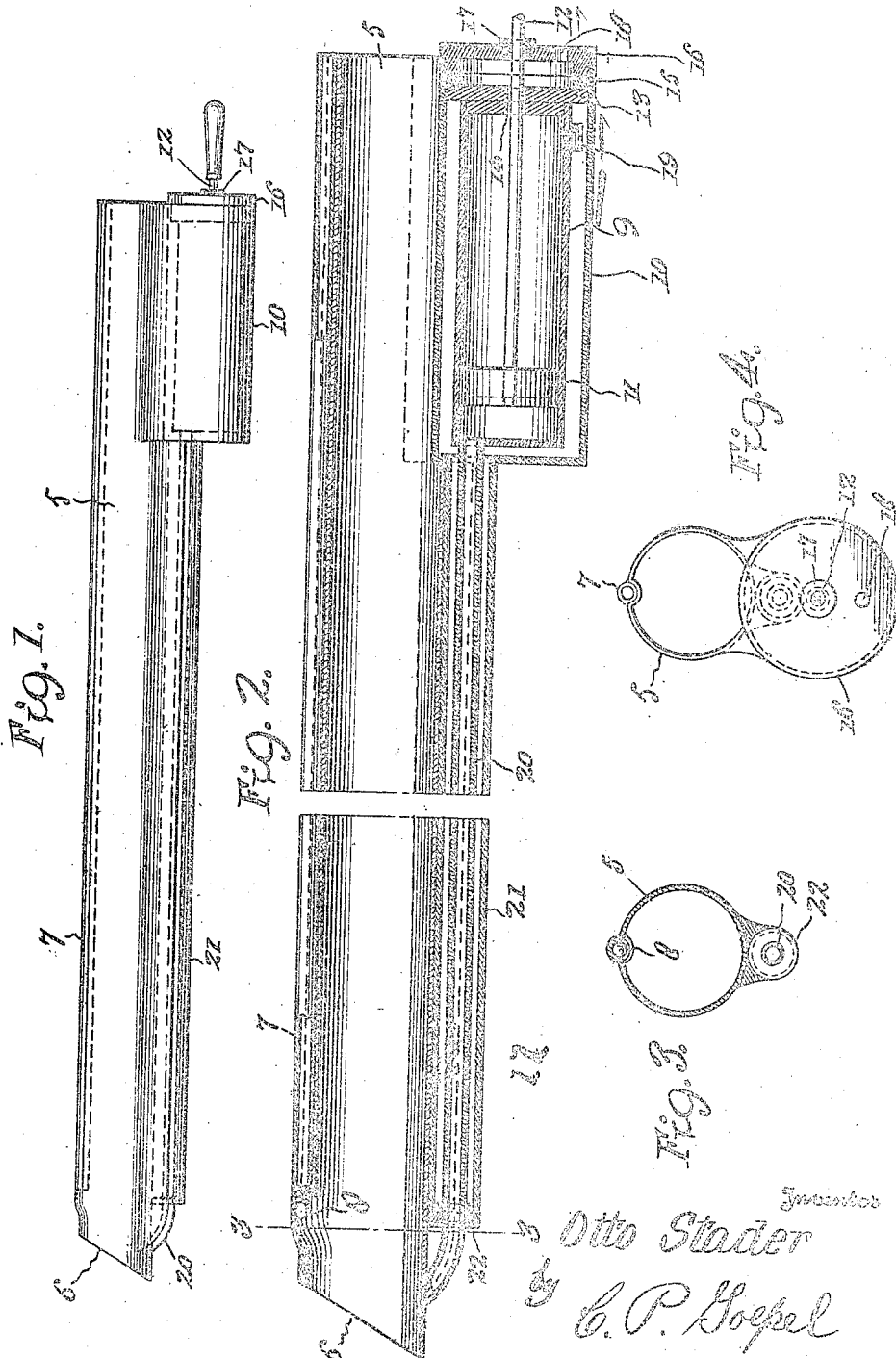


O. STADER.
VETERINARY SURGICAL INSTRUMENT
APPLICATION FILED MAR. 26, 1921.

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VETERINARY SURGICAL INSTRUMENT.

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To all whom it may concern:

Be it known that I, OTTO STADER, a citizen of the United States, and a resident of Oconomowoc, in the county of Waukesha and State of Wisconsin, have invented certain new and useful Improvements in Veterinary Surgical Instruments, of which the following is a description.

This invention relates to veterinary surgical instruments and has for its primary object to provide means for transferring the generative semen from a previously bred female animal and injecting the same into the anterior portion of the vagina of one or more unbred females, by which operation the male reproductive germ is so placed that by virtue of its locomotive powers it can gain entrance into the uterus and there fertilize the female egg.

The present invention is designed with a view to procuring the reproduction of desirable species of cattle or other animals and increasing the offspring from a selected male without necessitating copulation with a large number of females which would impair the vitality of the male animal.

For the above purpose, in one construction I provide a sight tube with illuminating means at one end so that the operation may be readily observed by applying the eye to the opposite end of said tube. A vacuum cylinder and piston is carried by the latter end of the tube and a longitudinal tube is connected at one of its ends to said cylinder and at its other end communicates with the operative end of the sight tube and collects the semen from the vagina of the bred female animal. The cylinder and tube connected therewith are surrounded by a jacket within which a vacuum may be maintained to prevent devitalization of the semen by a reduction of its temperature. The position of the instrument for transference of the semen to the unbred female is reversed and the end of the tube is inserted into the vagina directly over the cervix. Then by operating the piston the semen or part of it can be ejected in close proximity to the cervix.

With the above and other objects in view, the invention consists in the improved form, construction and relative arrangement of the several parts of the improved instrument as will be hereinafter more fully described, illustrated in the accompanying

drawing and subsequently incorporated in the subjoined claims.

In the drawing wherein I have illustrated one practical embodiment of the invention and in which similar reference characters designate corresponding parts throughout the several views:

Fig. 1 is a side elevational view of the instrument;

Fig. 2 is a longitudinal sectional view of the same;

Fig. 3 is a transverse section taken on the line 3--3 in Fig. 2; and

Fig. 4 is an end elevation.

Referring in detail to the drawing, the sight tube 5, of sheet metal, is preferably cylindrical, though it may be of any other desired cross sectional form. One end of this tube is obliquely cut as at 6 and at one side of the tube 5 a longitudinally extending tube 7 of relatively small diameter is suitably secured to the wall thereof. This tube 7 provides a housing for the feed wires of an electric light bulb 8 which is engaged in the end of the tube 7 which terminates adjacent to the oblique end 6 of the tube 5.

The opposite end of the tube 5 carries a cylinder 9 having a concentric jacket wall 10. A piston 11 reciprocates within the cylinder 9 and is actuated by means of a rod 12. The outer end of the cylinder is closed by a head 13 fitting within the jacket 10 said head having a central opening 14 of larger diameter than the rod 12 and through which air may freely pass from the interior of the cylinder in the outward movement of the piston 11. An annular packing ring 15 is disposed against the outer side of the cylinder head and held in place by the cap 16 threaded into the end of the jacket 10. This cap carries a stuffing box 17 through which the piston rod 12 moves and is further provided with an air outlet opening 18. In the wall of the cylinder 9 adjacent its outer end an inwardly opening check valve 19 is disposed.

To the inner end of the cylinder 9 a longitudinally extending tube 20 is connected at one of its ends, the other end of said tube communicating with the interior of the tube 5 adjacent to its end 6 and in advance of the light bulb 8 at the opposite side of the tube 5. A jacket 21 surrounds the tube 20 and forms a continuation of the jacket space surrounding the cylinder 9. This jacket at its

forward end is provided with an air tight closure 22.

Prior to using the instrument the piston is operated and during the inward movement thereof the finger is held over the opening 18 so that air will be drawn from the jacket into the cylinder 9. In the outward movement of the piston air is expelled from the cylinder through the opening 18. In this manner a vacuum is finally produced within the jacket.

The oblique end 6 of the tube 5, held in the position shown in Fig. 1, of the drawing, is then engaged with the posterior sexual organs of the bred female animal and the interior of this end of the tube illuminated by means of the lamp bulb 8. By placing the eye at the opposite end of the tube the collection of the semen may be observed. Upon operation of the piston 11 the semen, or a part thereof is drawn from the vagina into the tube 20. A part of the semen may collect in the forward end of the cylinder 9. By creating a vacuum in the jacket, as above explained the semen contained in the tube 20 and cylinder 9 is maintained substantially at its original temperature. Preferably in transferring the instrument the jacket walls are submerged in hot water or otherwise heated so that the temperature of the semen will not be materially reduced.

The semen is discharged into the anterior vagina of the unbred female animal by reversing the position of the instrument in the hand and inserting the point of the tube 5 into the vagina directly over the cervix. The curved outlet end of the tube 20 is then at the upper side of the instrument and upon operation of the piston 11 the semen flows under pressure and by gravity through said tube and is deposited in the vagina. The reproductive germ of the male by its locomotive powers will then pass into the uterus and fertilize the female egg after which the development of the foetus and the embryo takes place in the natural way in the womb. In due course birth occurs and a calf is delivered.

From the foregoing description considered in connection with the accompanying drawing the construction, manner of use, and several advantages of the improved instrument will be fully understood. By means of the present invention the experienced veterinary surgeon may readily carry out artificial impregnation and produce a condition of pregnancy in the female animal without

that female being bred by a male. Thus the discharge of semen resulting from one act of copulation between a male and female may be distributed between a plurality of other unbred females to the end that the offspring of the male may be increased without impairing its vital powers.

While I have herein disclosed a preferred embodiment of the invention which I have found very satisfactory in practical use, it will be manifest that the instrument is susceptible of many modifications in the form, proportion and arrangement of its several parts. Therefore, I reserve the privilege of resorting to all such legitimate changes as may be fairly embodied within the spirit and scope of the appended claims.

I claim:

1. An instrument of the character described comprising a sight tube, means carried by said tube and communicating therewith adjacent one of its ends to receive animal semen, and additional means carried by the tube for maintaining the semen substantially at its original temperature.

2. An instrument of the character described comprising a sight tube, means for illuminating the interior of said tube adjacent one of its ends, and means carried by said tube and communicating with the interior thereof opposite the illuminating means and adapted to receive animal semen.

3. An instrument of the character described comprising a sight tube, a semen receiving tube exterior of the sight tube and communicating therewith adjacent one of its ends, and a jacket which may be evacuated surrounding said tube to maintain the semen substantially at its original temperature.

4. An instrument of the character described comprising a sight tube, a semen receiving tube exterior of the sight tube and communicating therewith at one of its ends, a cylinder carried by the sight tube to which the semen receiving tube is connected, a jacket surrounding said tube and the cylinder, a valve controlling communication between the cylinder and the jacket space, and a piston reciprocating in said cylinder and acting to withdraw the air from within said jacket to maintain the semen substantially at its original temperature.

In testimony that I claim the foregoing as my invention, and I have signed my name hereunder.

OTTO STADER.