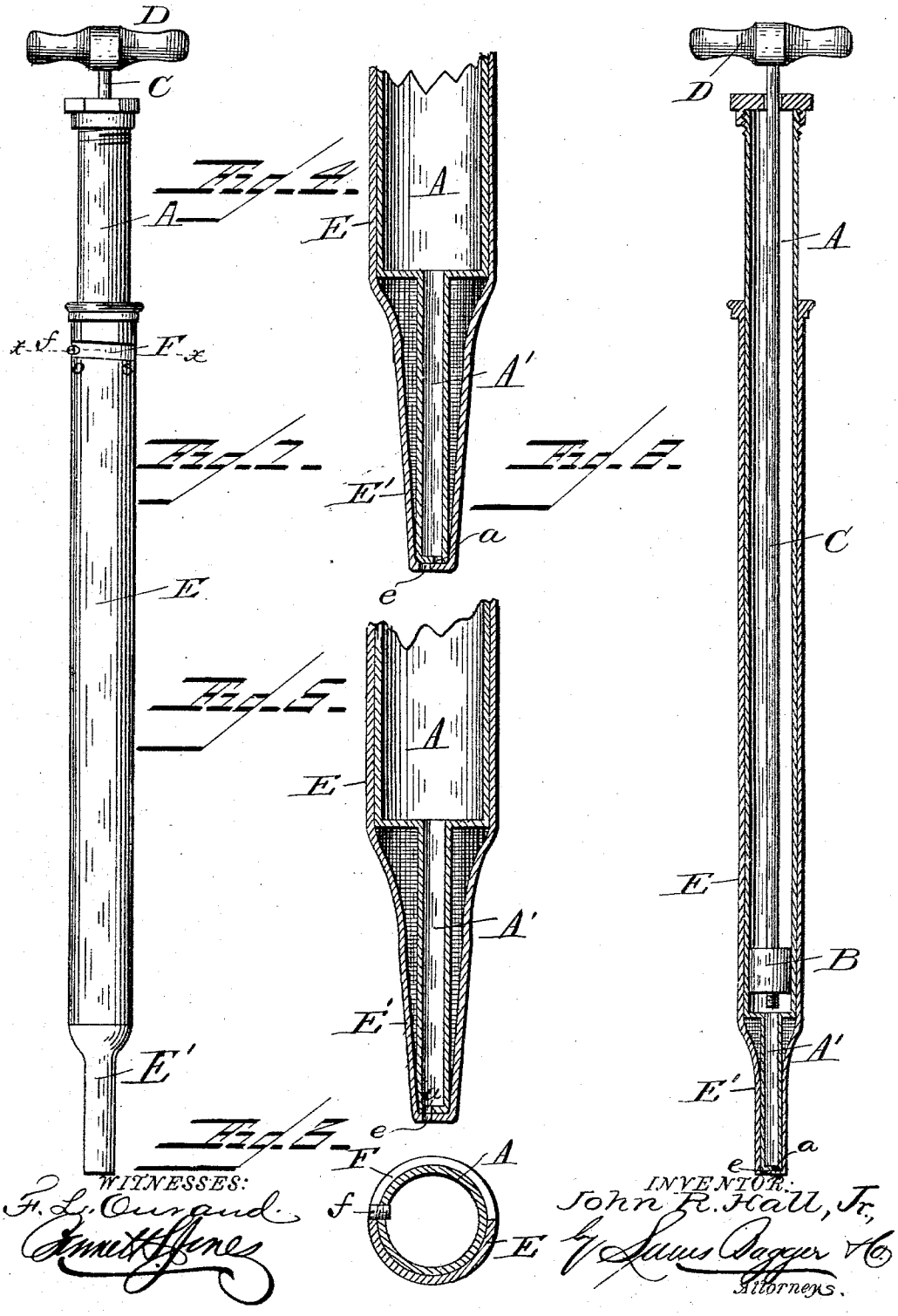
(No Model.)

J. R. HALL, Jr.

SYRINGE.

No. 546,148. Patented Sept. 10, 1895.



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SYRINGE.

SPECIFICATION forming part of Letters Patent No. 546,148, dated September 10, 1895.

Application filed September 20, 1894. Serial No. 523,616. (No model.)

To all whom it may concern:

Be it known that I, JOHN RILEY HALL, Jr., a citizen of the United States, and a resident of Fort Recovery, in the county of Mercer and State of Ohio, have invented certain new and useful Improvements in Syringes; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side view of my improved syringe. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a cross-section on line *x x*, illustrating the cut-off stop and slot. Fig. 4 is a sectional detail view on an enlarged scale, showing the combination and arrangement of the inside nozzle and outside cut-off as the parts appear when the nozzle is closed; and Fig. 5 is a sectional detail view of the same parts in their relative position when the nozzle is open.

Like letters of reference designate corresponding parts in all the figures.

This invention relates to impregnating-syringes for breeding purposes, used for the artificial introduction of the male semen into the womb of the female animal, and has for its object to prevent access of air to the syringe and to the womb of the female animal to be impregnated during the delicate operation of introducing the semen, experience having demonstrated that atmospheric air in contact with the male semen during and after its introduction into the womb will destroy its vitality.

With this object in view my improvement consists in the combination, with the barrel and nozzle of the syringe, of a peculiarly-constructed air-tight cut-off, as will be hereinafter more fully described and claimed.

In the accompanying drawings, the reference-letter A denotes the barrel of my improved syringe, A′ the nozzle of the same, B the piston or plunger, C the piston-rod, and D the handle of the same. Instead of having the orifice *a* in the center of the nozzle, as usual, it is placed on one side, as shown more clearly in Figs. 4 and 5, so as to be much nearer one side of the nozzle than the other. The barrel A, with its nozzle A′, are inserted into another closely-fitting barrel E of corresponding shape, and also provided with a nozzle E′, having an orifice *e* on one side of its flat or slightly convex point. Near its other or open end the barrel E has a transverse slot F, into which projects a small screw head or stud *f*, fastened in and projecting from the inside barrel A, and forming a stop or limit for the turning or partial rotation of the exterior cut-off barrel E upon the interior syringe-barrel A. At one end of the slot F is marked upon the exterior barrel the letter "O," and at the other end the letter "S."

From the foregoing description, taken in connection with the drawings, the operation of this device will readily be understood. The orifices *a* and *e* are so located and arranged relative to each other that when the outside barrel is turned or partly rotated upon the inside barrel until stopped by the stud *f* striking against that end of slot F marked "O," the two nozzle-orifices will coincide or register with each other, as illustrated in Fig. 5, while by turning the outside barrel one-half a revolution in the opposite direction, till stud *f* strikes against the opposite end of the slot marked "S," the two orifices *a* and *e* will be diametrically opposite to each other in the relative position illustrated in Fig. 4, thus closing the inner orifice *a* air-tight.

To use the syringe the nozzle A′ is opened and the semen drawn up into the syringe by withdrawing the plunger. After it has been charged the nozzle-orifice *a* is closed in the manner described, and the syringe is carefully introduced into the womb of the mare, cow, or other female animal to be impregnated for breeding. The cut-off barrel is then again turned so as to open the inner orifice, as shown in Fig. 4, and the contents of the syringe are injected into the womb by pressing the plunger home with a quick even pressure.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

A syringe consisting of the barrel A, provided near its upper end with a stud *f*, and having a cylindrical nozzle A′ provided with an orifice in its point end at one side of the

center of said point end, the piston, piston-rod and handle, and the exterior cut-off barrel E, having a transverse slot F into which the stud *f* projects, and a nozzle E′ having an orifice in the horizontal portion of its tapered end at one side of the central longitudinal line of said syringe, and a nozzle A′ having an orifice in the horizontal portion of its tapered end which may be turned in and out of alignment or register with the orifice in the nozzle A′, substantially as specified.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

JOHN RILEY HALL, JR.

Witnesses:
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