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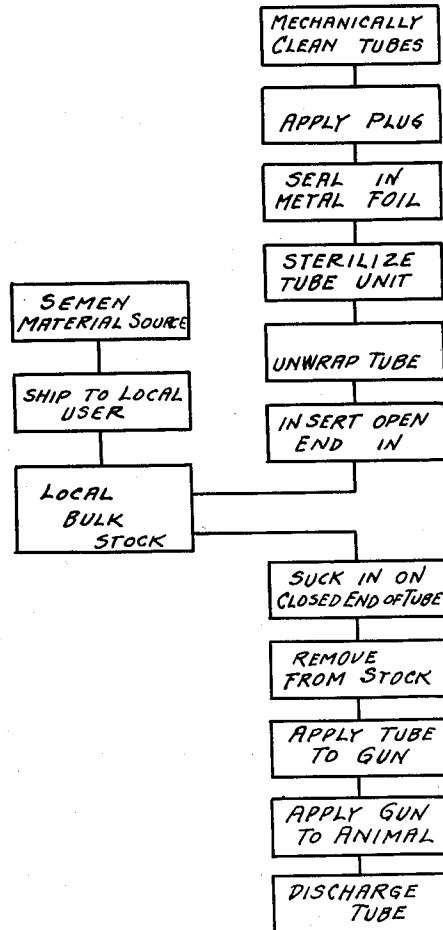
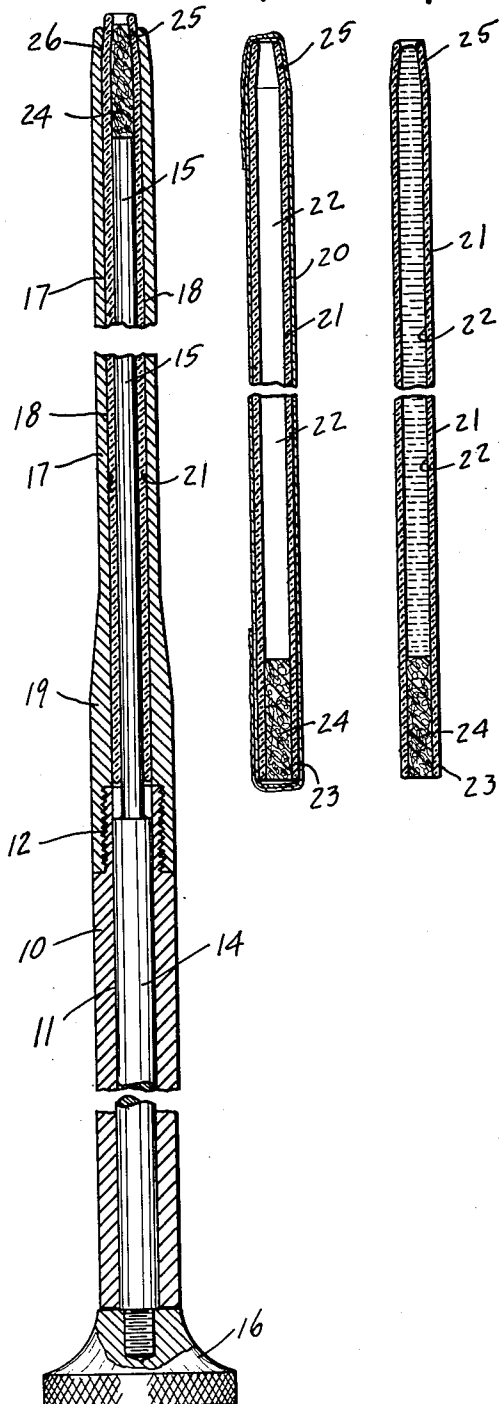
R. H. HOYT

2,572,155

VIAL FOR USE IN ARTIFICIAL INSEMINATION

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FIG. 1 FIG. 2 FIG. 3 FIG. 4



INVENTOR.

ROBERT H. HOYT,

BY

Lockwood, Goldsmith & Calt
ATTORNEYS.

UNITED STATES PATENT OFFICE

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VIAL FOR USE IN ARTIFICIAL
INSEMINATION

Robert H. Hoyt, Converse, Ind.

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1 Claim. (Cl. 128—272)

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This invention relates to a system of artificial insemination.

The chief object of the present invention is to provide suitable means and utilize same in a novel manner so that artificial insemination can be practiced successfully without contamination or infection or loss of semen or loss of potency.

The chief feature of the present invention resides in supplying a proper dosage of semen to the female animal and in the field under conditions that accomplish the foregoing object.

Other objects and features of the invention will be set forth more fully hereinafter.

Briefly artificial insemination has been practiced for a considerable period and has been relatively successful. However, previous systems have inherent defects, etc., that cannot be eliminated except by utilizing the system herein disclosed.

Herein it is contemplated that semen from the selected and proved male animal is suitably conditioned and held under controlled conditions well known in the art. This can be shipped in bulk amounts in a sterile container and under controlled conditions to the local veterinarian and held by him under controlled conditions for subsequent multiple breeding within the expiration date, that is, the date at which the said semen loses a predetermined amount of its potency.

The veterinarian is supplied with a gun and individual sterile tubes. Before insertion of the gun into the vagina of the female said gun is sterilized so that no germ, virus or contaminant is introduced into the female. This prevents subsequent infection and also prevents transference of infection from one female to another.

The tubes may be formed of glass, plastic or metal and are preferably formed of a translucent or transparent material. Each tube is fully sterilized inside and out. Such a tube has a constricted intake and discharge end and an opposite full bore end. Therein is fitted a sterilized closure of the air passing type. This may be of cork, rubber or felted cotton. This plug functions when subjected to suction, applied by mouth if desired, to suck out the sterile air in the tube, the void being filled by the sucked up semen until the tube is filled.

As stated, each plug provided tube is sterilized and maintained in that condition in a sterile sealed wrapper such as a metal foil until the seal is broken in the field and the sterile tube removed therefrom for charging with semen.

The sterile tube has its restricted open end in-

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serted in the bulk container, held under controlled conditions as by an ice jacket, and the semen is sucked up into that sterile tube by the veterinarian sucking upon the opposite end of the tube which is provided with a sterilized closure or plug of the air passing type as above described.

When the tube is filled the bulk container is immediately closed and the tube is inserted in the sterilized gun, which is immediately inserted in the animal. Then the gun plunger is pushed "home" which forces the plug from its original position at the full bore end of the tube to the tapered end but not discharging therefrom. Such plug movement effects semen discharge into the female animal uterus.

Note tubes are filled as required and do not contaminate the bulk supply. Further gun disinfection following use prevents infection transfer from animal to animal.

Having thus described in considerable detail the system, method or process, reference will now be had to the gun and the tube members employed.

The full nature of the invention will be understood from the accompanying drawings and the following description and claim.

In the drawings,

Fig. 1 is an enlarged longitudinal sectional view of a form of gun which can be used in the invention, the inseminator tube being disposed therein with its plug closure in the discharge portion.

Fig. 2 is a longitudinal sectional view of a sterile, wrapped, empty tube prior to loading.

Fig. 3 is a similar view of such tube after loading.

Fig. 4 is a diagrammatic flow plan of the invention.

In Fig. 1 of the drawings, 10 indicates the handle portion of an inseminator device having longitudinal bore 11 therethrough. At the forward end the tube is reduced externally and threaded as at 12. Disposed in and slidable longitudinally in bore 11 is the plunger rod 14 having pressure applying end 15 and being provided at its opposite end with an exposed push rod handle or head 16.

A nose piece 17 is also tubular and the bore 18 thereof may be slightly larger than the bore 11. The rear end of nosepiece 17 is enlarged as at 19 and internally threaded to take the threaded end 12 of the gun handle or barrel.

In Fig. 2 there is illustrated a metal foil sealed wrapper 20 enveloping tube 21. This tube has bore 22 therethrough. Throughout the major portion of the bore it is uniform and is large

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enough in diameter to accommodate the pressure applying end 15 of the plunger 14. At its rear and full size end 23 it seats an air passing closure or plug 24. Its opposite end preferably is tapered as indicated at 25 forming a restriction. This end is fire polished if the tube be of glass or otherwise smoothed, etc., if of plastic or metal. Herein taper 25 conforms to taper 26 of the discharge end of the nose bore 18. The plug closure may be of sterile cotton, paper, or rubber-like material so long as it passes air when opposite sides are subjected to a fairly slight pressure difference.

The plug, aforesaid, never moves except for material discharge and the tube is filled and discharged from the same end as described. In the discharge operation the plug is sealed off as it were by the adjacent pressure end 15 of the plunger. This, if slightly tapered, can partially embed in the exposed face of the plug and thus compress same laterally outward for full seal thus preventing rearward seepage or oozing of the liquid from the tube provided the plug is of a type that can be compressed.

The specific details of the ends of the nose piece, the tubes, etc., may be exactly as shown or slightly depart therefrom as desired. The filling of the tubes, insertion in the gun and ejection of material has all been previously described and requires no further amplification.

The flow diagram, Fig. 4, is believed sufficient disclosure of the preferred method herein disclosed.

While the invention has been illustrated and described in great detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character.

The several modifications described herein as well as others which will readily suggest them-

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selves to persons skilled in this art, all are considered to be within the broad scope of the invention, reference being had to the appended claim.

The invention claimed is:

5 An artificial insemination or medication unit for a disburseable liquid substance in sanitary condition and directly discharging the substance at its point of application comprising an elongated tubular casing of uniform cross-section, 10 the discharge end of said casing being smaller in diameter than the body of the casing and being provided with an unrestricted discharge opening smaller in diameter than the bore of the casing, an air passing plug member of porous flexible 15 fabric or the like fitting into the rear end of the casing and through which air initially trapped in the casing can be exhausted when the liquid substance is supplied to the casing interior through the discharge opening, said plug member constituting a piston empellable through the casing 20 by pressure applied to the rearward end of the member and being restrained from discharge through said discharge opening by the reduced diameter of the end of the tube.

ROBERT H. HOYT.

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