

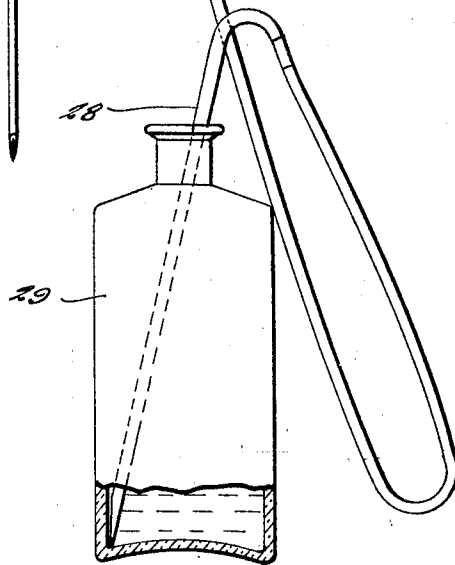
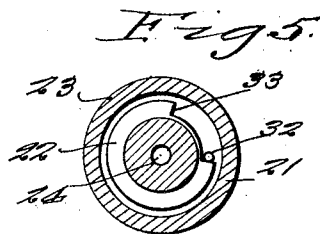
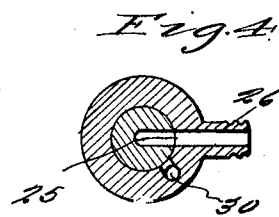
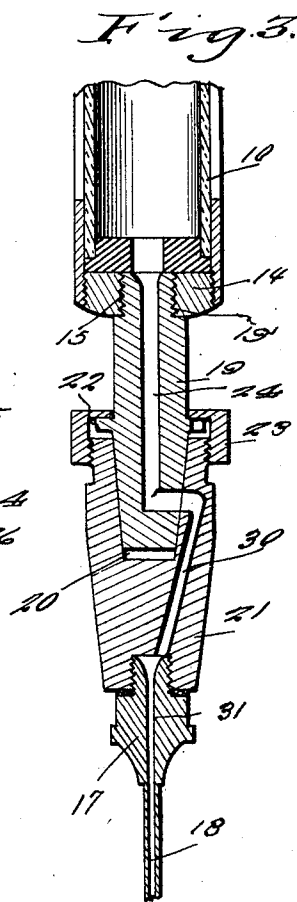
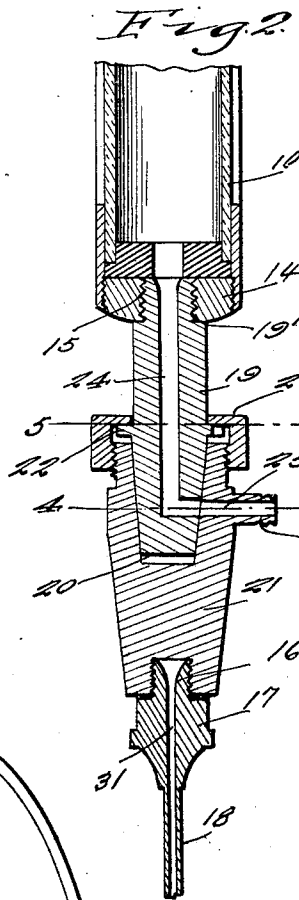
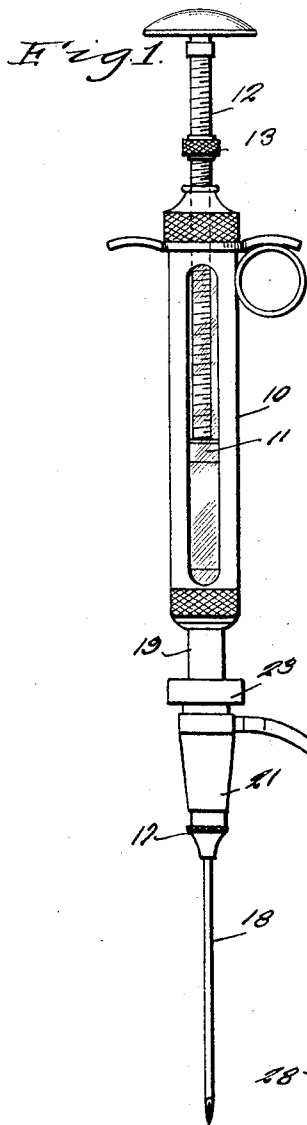
Nov. 10, 1931.

C. E. JUHL

1,831,668

SYRINGE

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## SYRINGE

Application filed April 28, 1928. Serial No. 273,581.

This invention relates to hypodermic syringes especially designed for the treatment of animals, an object being to provide a syringe which will be useful in vaccinating hogs.

To this end, the invention provides a novel valve construction, whereby the serum may be drawn into the barrel of the syringe from a suitable container while communication is cut off from the discharge passage. Conversely, communication may be established with the discharge passage and cut off from the container during the expelling operation.

In vaccinating hogs, the usual dose is from sixty to one hundred cubic centimeters, and for pigs, from forty to sixty cubic centimeters. The serum is drawn from a container of approximately five hundred cubic centimeters. The hypodermic needle is inserted beneath the skin of the animal in from two to four places and the serum is alternately drawn from the container and is "shot" beneath the skin. In automatic ball valve syringes, the valves sometimes fail to seat due to sediment, and from other causes, and some of the serum goes back into the container instead of beneath the skin of the animal, so that an accurate dose is not used. The present invention provides means for positively closing either the intake or discharge passage of the syringe and thus overcomes this disadvantage.

Another object of the invention is the provision of a valve of the above type which may be manufactured and sold separately and applied to a syringe, or may form a part of the syringe.

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 claim.

In the drawings:—

Figure 1 is a view illustrating the use of the invention.

Figure 2 is an enlarged fragmentary sectional view taken through the valve and the adjacent part of the barrel of the syringe, the

valve being arranged to open the inlet passage.

Figure 3 is a similar view but showing the valve arranged to open the discharge passage.

Figures 4 and 5 are sectional views taken respectively on the lines 4—4 and 5—5 of Figure 2.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the reference character 10 indicates the barrel of the syringe which is of the usual type and is provided with the usual plunger 11, graduated stem 12 and stop nut 13. One end of the barrel is provided with a plug 14 having a threaded opening 15 and this opening removably receives the reduced threaded extension 16 of a chuck 17 which carries a hypodermic needle 18.

The present invention is in the form of an attachment for the syringe and the chuck 17 is removed from the plug 14 and is replaced by a reduced threaded extension 19 which extends from one end of a neck 19, the threaded extension 19' of this neck and the threaded extension 16 of the chuck 17 being adapted for removable connection with the plug 14.

The outer end of the neck 19 is tapered and is received within a tapered socket 20 provided in one end of a valve member 21. The neck 19 is provided with a flange 22 and this flange is engaged by a nut 23 which threadedly engages the rotatable member 21 so that the latter is swiveled upon the neck 19.

Extending through the neck is a longitudinally and laterally extending passage 24 which is adapted to communicate with an inlet passage 25 provided in the valve member 21. A nipple 26 extends from the passage 25 and a flexible tube 27 has one of its ends secured to the nipple while secured to the opposite end of this tube is a canula 28. The latter is adapted to be inserted within a serum container 29.

The valve member 21 is provided with a discharge passage 30 which is also adapted to communicate with the passage 24 of the neck 19 so as to provide communication be-

tween this passage 24 and the passage 31 of the chuck.

In the use of the invention, the canula is inserted within the serum container and the valve positioned so as to provide communication between the inlet passage 25 and the interior of the barrel. The plunger is operated to draw the serum into the barrel, after which the valve is rotated so that the passage 24 communicates with the discharge passage 30. The passage 25 will thus be positively cut off from the passage 24 while the serum may be expelled through the needle 18.

The rotatable member 21 is provided with a stop pin 32 which extends from its upper end and is adapted to engage opposite shoulders 33 provided at opposite ends of a cut-out portion of the flange 22. By rotating the member 21 the limit permitted between the shoulders 33, the passages 25 and 30 will be properly positioned with respect to the passage 24.

Due to the construction of the valve, no sediment of any character can lodge therein to interfere with its efficient operation or to cause back firing or discharge of some of the serum from the syringe barrel back into the container 29.

By adjusting the nut 23, wear may be taken up between the rotatable member and neck 19.

The invention may be manufactured and sold separately from the syringe, it being only necessary to remove the lug 17 and insert the neck 19 with the chuck attached at the outer end of the rotatable member 21.

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 claim.

Having described the invention what is claimed is:

In a hypodermic syringe of the usual type including a barrel, a plug having a threaded opening and secured in said barrel, a chuck carrying a hypodermic needle and provided with a passage extending through the needle, a threaded extension on said chuck and adapted to be received in the threaded opening, an attachment for said syringe and being adapted to be disposed between the barrel and chuck and including a neck portion having means adapted to be received in the threaded opening, a tapered portion formed with said neck and together with said neck being provided with a passage in communication with said barrel, a rotatable member provided with a tapered socket at one end to receive the tapered portion and a threaded opening at its opposite end to receive the threaded extension of the chuck, said rotatable member being provided with a laterally extending passage and an inclined passage, the latter terminating in the threaded

opening of the rotatable member for communication with the passage in the chuck, said rotatable member being movable for alternately disposing the passages thereof in registration with the passage of the neck, stop means for said rotatable member, and means for disposing a canula in communication with the laterally disposed passage.

In testimony whereof I affix my signature.

CHRIS E. JUHL.