No. 834,261. PATENTED OCT. 30, 1906.

C. S. CHAMBERS.

VACCINE INJECTOR.

APPLICATION FILED APR. 4, 1906.

Fig. 1.

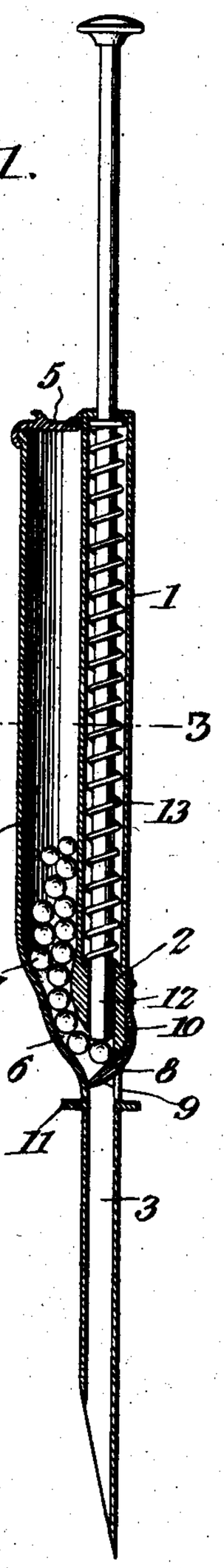


Fig. 2.

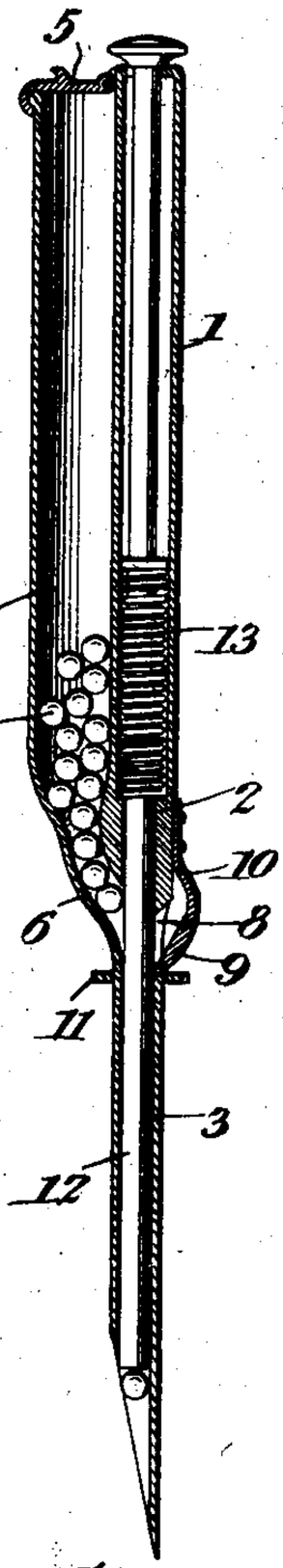
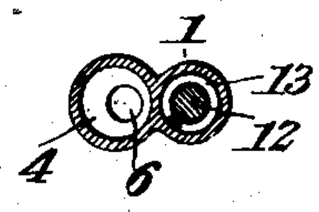


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CLARENCE S. CHAMBERS, OF SIDNEY, NEBRASKA.

VACCINE-INJECTOR.

No. 834,261. Specification of Letters Patent. Patented Oct. 30, 1906.

Application filed April 4, 1906. Serial No. 309,919.

To all whom it may concern:

Be it known that I, CLARENCE S. CHAMBERS, a citizen of the United States, residing at Sidney, in the county of Cheyenne and State of Nebraska, have invented a new and useful Vaccine-Injector, of which the following is a specification.

This invention relates to injectors of that class used in inoculating animals with virus, said virus being in the form of pellets.

One of the objects of the invention is to provide means for controlling the discharge of pellets from the injector, so that only one can be discharged at a time.

With the above and other objects in view the invention consists of certain novel features of construction and combinations of parts, which will be hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings, Figure 1 is a longitudinal section through the device and showing the parts in their normal positions. Fig. 2 is a similar view showing the plunger projected into the needle; and Fig. 3 is a section on line 3 3, Fig. 1.

Referring to the figures by numerals of reference, 1 is a tubular body having a contracted end 2, opening at one end into a tubular needle 3, said needle being pointed, so as to facilitate its insertion through the skin of an animal. A magazine 4 is disposed upon the body and has a cap 5 at one end for closing it, while its other end communicates through a passage 6 with the contracted portion 2 of the body 1. The diameter of this passage, as well as the interior diameter of the needle 3 and the contracted portion 2 of the body, is a little greater than the diameter of pellets 7, adapted to be used in the injector. A slot 8 is formed in the wall of the contracted portion 2 opposite the end of passage 6, and into this slot projects a keeper 9, formed at one end of a spring 10, which is secured longitudinally upon the body. The base of the keeper nearest the body is inclined into the needle, and a guard-flange 11 is formed around the needle close to the slot, so that when said needle is inserted through the skin the operation of the keeper will not be interfered with. The plunger 12 is slidably mounted in the body 1, the inner end thereof being normally disposed in the contracted portion 2 of the body and adapted to be projected into the needle. A spring 13 surrounds the plunger and bears at one end against the body and is fastened at its other end to the plunger. This spring serves to hold one end of the plunger normally in position within the contracted portion 2. A knob 4 is located on the outer end of the plunger to facilitate its actuation.

When the plunger is in its normal position, the distance between the end thereof and the inclined face of the keeper 9 is slightly greater than the diameter of a pellet, but is not sufficiently large to receive more than one pellet. The magazine is filled with virus pellets of the proper size, and these pellets will assume positions within the passage 6, and the end one will drop upon the inclined face of the keeper and into the path of the plunger. When it is desired to inject the pellet, the needle is inserted through the skin and plunger 12 is driven forward, so as to compress the spring 10. The pellet and plunger will be forced against the inclined face of the keeper and cause the same to spring outward through the slot 8, and the pellet will then be pushed through the needle by the plunger. While the parts are in this position the pellets are prevented by the plunger from moving into the body, and as soon as the plunger is released the spring 10 returns to its normal position and the keeper moves automatically into its longitudinal position. The next pellet will therefore drop by gravity into the space between the keeper and plunger and the device is thus automatically charged for another operation. Importance is attached to the particular construction and arrangement of the keeper, because it constitutes a regulator for controlling the feed of pellets without interfering with the operation of the plunger. This keeper permits the injector to be held in any position without danger of the pellets falling through the needle. The flange 11 prevents the skin of the animal from interfering with the operation of the keeper.

What is claimed is—

1. In a device of the character described the combination with a body, a needle extending therefrom, and a plunger adapted to reciprocate within the body and needle; of a magazine opening into the path of the plunger, and a keeper interposed between the needle and the outlet of the magazine.

2. In a device of the character described the combination with a body, a needle extending therefrom and a plunger adapted to

reciprocate within the body and needle; of a magazine having an outlet into the path of the plunger, and a resilient keeper projecting into the body between the outlet and the needle, said keeper adapted to be projected from the needle by the plunger.

3. In a device of the character described the combination with a body, a needle extending therefrom, and a plunger adapted to reciprocate within the body and needle; of a magazine having an outlet into the path of the plunger, a resilient keeper projecting into the body between the outlet and the needle, said keeper having an inclined face adapted to be contacted by the plunger.

4. In a device of the character described the combination with a body, a needle extending therefrom, and a plunger adapted to reciprocate within the body and needle; of a magazine having an outlet into the path of the plunger, said outlet adapted to be closed by the plunger when the plunger is out of its normal position, and a resilient keeper projecting into the body between the outlet and the needle, said keeper adapted to be projected from the body by the plunger.

5. The combination with a body having a contracted portion, a needle extending therefrom, and a plunger adapted to reciprocate within the body and needle; of a magazine having an outlet-passage opening into the contracted portion of the body and into the path of the plunger, said passage adapted to be closed by the plunger, and a resilient keeper projecting into the contracted portion of the body between the passage and the needle, said keeper adapted to be projected from the body by the plunger.

6. The combination with a body having a contracted portion, a needle extending therefrom, and a plunger adapted to reciprocate within the body and needle; of a magazine having an outlet-passage opening into the contracted portion of the body and into the path of the plunger, said passage adapted to be closed by the plunger, and a resilient keeper projecting into the contracted portion of the body between the passage and the needle, said keeper adapted to be projected from the body by the plunger, and a guard upon the needle and adjacent the keeper.

7. A device of the character described comprising a body, a needle extending therefrom, said body having a slot therein adjacent the needle, a resilient keeper extending through the slot and into the body, a plunger adapted to reciprocate within the body and needle to project the keeper from the body, and a reservoir opening into the body between the plunger and keeper.

8. A device of the character described comprising a body, a needle extending therefrom, said body having a slot therein adjacent the needle, a resilient keeper extending through the slot and into the body, a plunger adapted to reciprocate within the body and needle to project the keeper from the body, and a reservoir opening into the body between the plunger and keeper, the outlet of said reservoir adapted to be closed by the plunger when the keeper is projected.

9. A device of the character described comprising a body, a needle extending therefrom, a keeper, means for projecting pellets into and through the needle, said means adapted to remove the keeper from the path of the pellet, and means for feeding pellets successively between the keeper and the projecting means.

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

CLARENCE S. CHAMBERS.

Witnesses:
J. A. F. WOLF,
C. P. CHAMBERS.