J. J. HARRISON & A. B. CHATFIELD, JR.

MEDICINE EJECTOR.

APPLICATION FILED DEC. 20, 1911.

1,019,465. Patented Mar. 5, 1912.

Fig. 1.

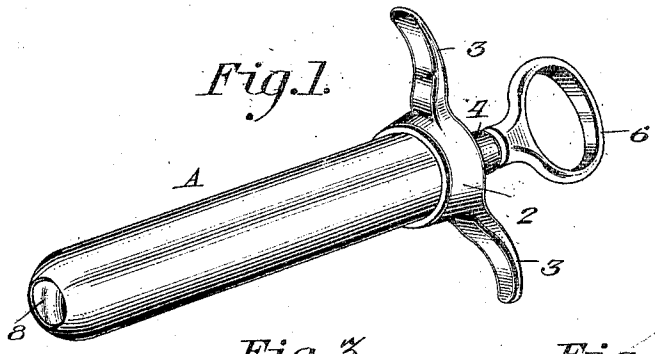


Fig. 3.

Fig. 4.

Fig 2.

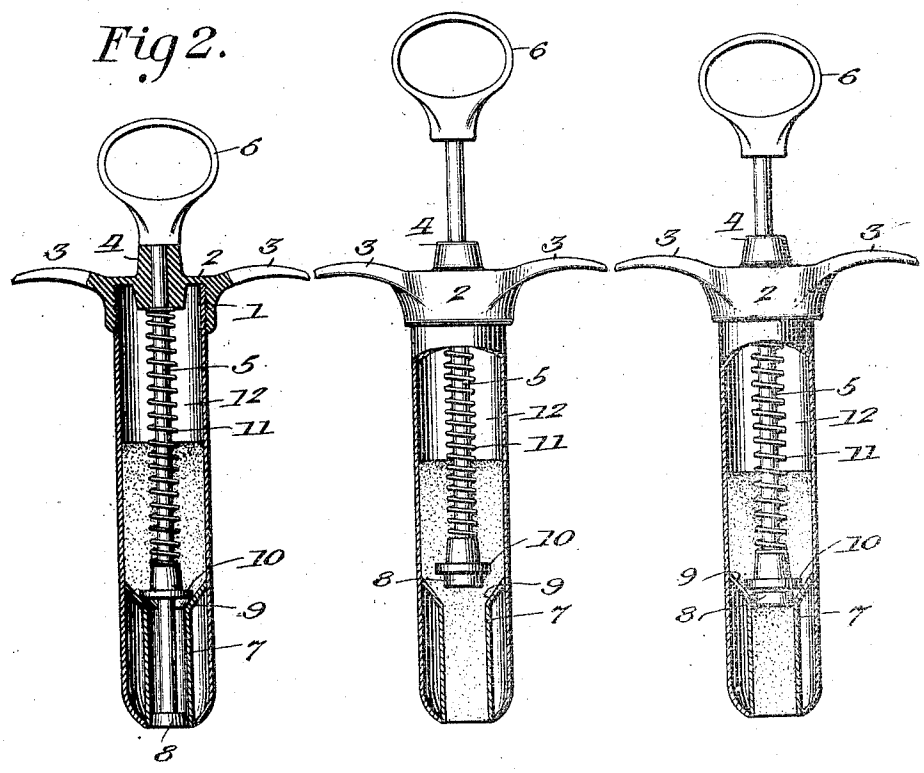
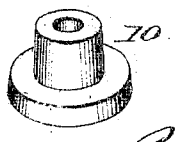


Fig. 5.



WITNESSES

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MEDICINE-EJECTOR.

1,019,465. Specification of Letters Patent. Patented Mar. 5, 1912.

Application filed December 20, 1911. Serial No. 667,000.

To all whom it may concern.

Be it known that we, JAMES J. HARRISON and ALONZO B. CHATFIELD, Jr., citizens of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Medicine-Ejectors, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a device known as an applicator or insufflator for the injection into the vaginal canal of healing powder for the local treatment of diseases of the genitive organs, the device being so designed that the patient can administer in a simple, convenient and sanitary manner, and without the attendance of a physician, the remedies which may be prescribed for the particular diseased condition. The device is of that type comprising a reservoir barrel for holding the medicinal powder that is adapted to flow in a charge barrel in which is a reciprocatory plunger or piston that is manipulated to eject therefrom a charge to the afflicted organ.

The invention has for one of its objects to improve and simplify the construction and operation of devices of this character so as to be reliable and efficient in use and conveniently manipulated, and at the same time be comparatively easy and inexpensive to manufacture.

Another object of the invention is the provision of an improved cut-off valve between the charge and reservoir barrels in connection with the ejecting plunger or piston.

With these and other objects in view, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one embodiment of the invention, Figure 1 is a perspective view of the ejector. Fig. 2 is a central longitudinal section thereof showing the plunger at the end of its ejecting movement and the cut-off valve in closed position. Fig. 3 is a similar view showing the valve held open by the plunger to permit a charge to pass from the reservoir barrel to the measuring or charge barrel. Fig. 4 is a longitudinal sectional view showing the plunger or piston at the beginning of the ejecting stroke. Fig. 5 is a perspective view of the valve removed.

Similar reference characters are employed to designate corresponding parts throughout the views.

Referring to the drawings, A designates the casing or reservoir barrel which is preferably of circular cross-section and rounded at its extremities so that it can be inserted into position comfortably, the barrel being several inches in length and about three-quarters of an inch in diameter. The end of the barrel opposite from the rounded end has an external thread 1 for receiving a cap 2 which has oppositely-extending arms or lugs 3 to be gripped while using the device, the cap having a central tubular guide 4 through which the plunger rod 5 slides, there being on the outer end of the rod a ring-shaped head 6 that forms a grip into which a finger may be inserted for manipulating the plunger.

Arranged within the rounded end of the barrel A, and disposed axially thereof, is a charge or measuring barrel 7 in which reciprocates the plunger or piston head 8 formed on the end of the rod 5 opposite from the finger ring grip 6. At the inner end of the charge barrel 7 is a frusto-conical mouth 9 which forms a seat for an annular cut-off valve 10 through which the rod 5 freely slides, there being interposed between the valve 10 and cap 2 a helical spring 11 that encircles the rod 5 and operates to normally hold the valve 10 seated. When the valve is seated, powder cannot pass from the reservoir chamber 12 to the charge barrel 7, because the valve engages the seat 9 and the fit between the plunger rod 5 and valve is sufficiently tight to prevent the escape of powder. When it is desired to permit a charge of powder to pass into the barrel 7, the plunger rod is pulled

against the tension of the spring 11 a sufficient distance to cause the head 8 to engage the valve and move it open, say to the position shown in Fig. 3 from that shown in Fig. 2. With one finger placed over the discharge end of the barrel 7 during this movement, the powder passes into the barrel 7 and fills the same. When the outward pull on the rod 5 is released, the spring 11 will cause the valve 10 to seat and to move the plunger head 8 into the inner end of the measuring or charge barrel, as shown in Fig. 4. The device can now be inserted in the vaginal canal to the proper position, and by a forceful inward pressure on the rod 5, the contents of the charge barrel 7 will be ejected upon the diseased organ. The grip ring 6 is adapted to strike the tubular guide 4 on the cap 2 and thereby prevent the plunger 8 from moving out of the discharge end of the barrel 7 and cause injury to the organ being treated.

In filling the device, first unscrew and remove the top piece or cap, without removing the piston; then place the finger over the opening in the end to prevent possible loss of powder and fill with the powder intended for use; screw down the cap, pointing the instrument downward and with the finger still pressing over opening at end, pull the piston back until it strikes the valve, then by pulling slightly against the spring the powdered contents of the reservoir barrel are permitted to pass down and fill the small charge barrel at the end, the spring then being released and the instrument ready for use. As the powder chamber or reservoir barrel will hold five or six charges of powder, the operation may be repeated so many times without reloading the instrument. Another method of filling the device with powder is to hold same with open end upward, insert free finger in ring and pull piston downward against spring until powder poured in opening at end will descend through small charge barrel into large chamber below. When full it may be prepared for use as before directed. Either method may be used at the option of the operator, or, if desired, the instrument may be used whether full or empty by holding the instrument in one hand, raising the piston by index finger in ring, and dipping into box or other receptacle holding powder until small chamber is full. Thus it is readily seen that there are three methods of preparing the device for use, all of which are equally efficient.

When ready for use and the patient placed upon her back, the instrument is inserted into the vagina the proper distance and by pressing the piston downward until ring at end strikes the cap, the powder is deposited where desired and the instrument is then withdrawn. If, however, it is desired to apply more medicine than the small charge barrel will hold, the proper amount should be placed in the instrument as before directed, and the patient still lying down and with the hips raised by inserting pillows thereunder, the instrument is inserted and the operator can, by simple manipulation, eject one measured charge or the entire contents of the larger chamber. Thus it is seen that any quantity of medicine up to the full capacity of the instrument can be injected into the body without removing the instrument. When it is desired to inject more than one charge, only the exact amount it is desired to use should be placed in the instrument.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while we have described the principle of operation of the invention, together with the apparatus which we now consider to be the best embodiment thereof, we desire to have it understood that the apparatus shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention, what we claim, is:—

1. A medicine ejector comprising a reservoir barrel, a charge barrel, a normally-closed valve between the barrels for preventing medicine from passing from the reservoir to the charge barrel, an injector plunger movable in the charge barrel in one direction to open the valve to permit the medicine to enter the charge barrel and movable in the opposite direction to eject the charge of medicine from the charge barrel.

2. A medicine ejector comprising a reservoir barrel, a charge barrel, a seat at the inner end of the charge barrel, a plunger having a head movable longitudinally of the charge barrel and adapted to be withdrawn from the latter into the reservoir barrel to permit a charge of medicine to enter the charge barrel, a self-seating valve normally engaging the seat and arranged to be engaged and opened by the head of the plunger as the latter is withdrawn into the reservoir barrel and thereby permit medicine to pass into the charge barrel.

3. A medicine ejector comprising a reservoir barrel, a charge barrel arranged at one end thereof and in axial relation thereto, a mouth through which medicine passes from the reservoir to the charge barrel, a plunger in the form of a rod extending axially of the reservoir barrel and having a head movable in the charge barrel and adapted to be withdrawn into the reservoir barrel to permit medicine to pass from the latter to the

charge barrel, an annular valve normally seated on the said mouth and through which the plunger rod is freely movable whereby the head on the plunger rod is adapted to engage and unseat the valve as said head is withdrawn into the reservoir barrel, and a spring in the reservoir acting on the valve to hold the same normally seated.

In testimony whereof we affix our signatures in presence of two witnesses.

JAMES J. HARRISON.
ALONZO B. CHATFIELD, JR.

Witnesses:
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GEO. SENNINY.