

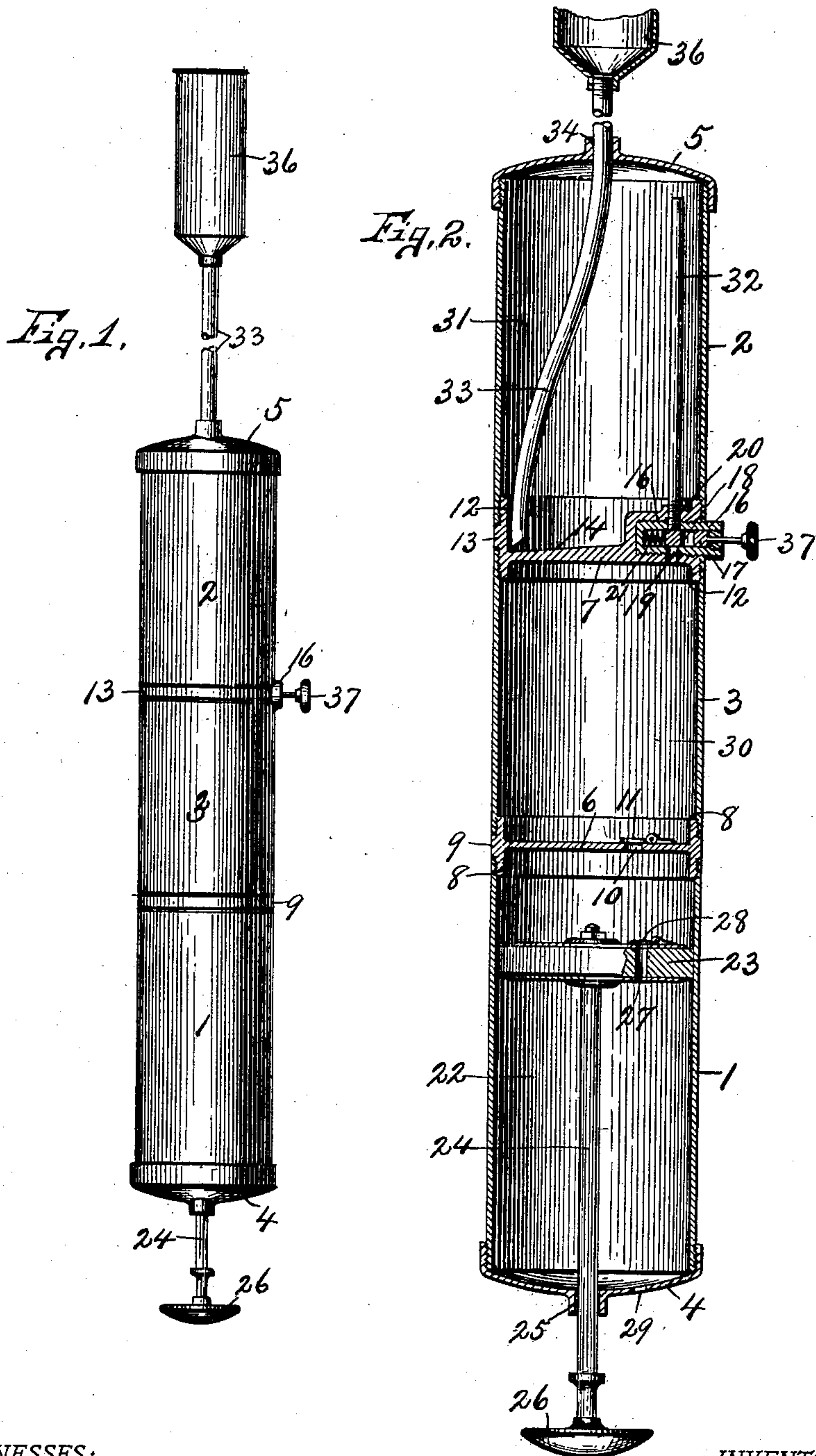
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Patented July 22, 1902.

W. P. & E. H. KING.
APPARATUS FOR ADMINISTERING MEDICINES.

(Application filed July 31, 1901.)

(No Model.)



WITNESSES:

J. E. Arthur,
H. B. Chase.

INVENTORS

William P. King and
Elmer H. King.

BY

Smith & Wainson
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM P. KING AND ELMER H. KING, OF SYRACUSE, NEW YORK.

APPARATUS FOR ADMINISTERING MEDICINES.

SPECIFICATION forming part of Letters Patent No. 705,251, dated July 22, 1902.

Application filed July 31, 1901. Serial No. 70,417. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM P. KING and ELMER H. KING, of Syracuse, in the county of Onondaga, in the State of New York, have
5 invented new and useful Improvements in Apparatus for Administering Medicines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

10 This invention relates to improvements in apparatus for administering medicine, being more particularly applicable for veterinary purposes.

The object of this invention is to provide
15 means whereby a liquid or solid medicine may be administered or injected into the throat or alimentary canal of animals in such quantities as may be desired by means of compressed air.

20 A further object is to provide the device with means for compressing the air in a suitable chamber and with additional means for regulating the discharge of the compressed air to the medicine-containing chamber.

25 To this end the invention consists in the construction, combination, and arrangement of the parts of an apparatus for the purposes mentioned, as hereinafter fully described, and set forth in the claims.

30 Referring to the drawings, Figure 1 is an elevation of our invention. Fig. 2 is an enlarged longitudinal section therethrough.

Similar reference characters indicate corresponding parts in both the views.

35 As seen in the drawings, this invention consists of a substantially cylindrical shell composed of opposite end and intermediate sections 1, 2, and 3, end heads or caps 4 and 5, and separated intermediate partitions 6 and 7.

40 The partition 6 is provided with oppositely-projecting annular flanges 8 and a substantially central annular rib 9, the flanges 8 being provided with external threads for receiving similar threads upon the adjacent

45 ends of the sections 1 and 3, whereby the section 1 and partition 6 may be readily detached when desired. This partition 6 is also provided with an opening 10 and a valve 11 for closing the opening 10. The partition 7 is

50 also provided with oppositely-projecting annular flanges 12 and a substantially central annular rib 13, the flanges 12 being screw-

threaded for receiving similar screw-threads upon the adjacent ends of the sections 2 and 3, whereby the section 2 and partition 7 may
55 be readily removed or detached when desired. This partition 7 is provided with an upper inclined face 14 and a chamber 15, in which chamber is arranged a valve-plug 16, having a slide-valve 17, movable therein and pro-
60 vided with an opening 18, adapted to register with openings 19 and 20 in the walls of the chamber 15 and plug 16. A suitable spring 21 serves to normally hold said valve out-
65 wardly with the opening 18 out of registration with the openings 19 and 20, said openings 19 and 20 being in substantial alinement with each other, and serve to connect the interiors of the sections 2 and 3 when the opening 18 of the valve 16 is alined therewith.
70 The caps 4 and 5 are also screw-threaded for engaging similar screw-threads upon the ends of the outer sections 1 and 2, whereby said caps may be removed when desired.

The section 1 is provided with an internal
75 chamber 22, in which is movable a piston 23, said piston being provided with a stem 24, extending downwardly through an aperture 25 in the end wall 4 and provided with a suitable handpiece 26, whereby the piston may
80 be reciprocated or moved endwise within the piston-chamber 22. This piston is provided with a suitable opening 27, extending lengthwise of the cylinder and closed at its inner end by a suitable valve 28. The end cap 4
85 is provided with an air-inlet opening 29, and it is evident that when the piston is drawn outwardly the air passes through the opening 27 in the portions of the piston-chamber between the piston and the partition 6. As
90 the piston is forced inwardly the valve 28 is automatically closed, thereby forcing the air in advance of the piston through the opening 10 and into the compression-chamber 30 in the section 3, it being understood that the
95 valve 11 is so arranged as to automatically close the opening 10 by the pressure of the air within for retaining the air or other fluid under compression. This section 2 is provided with an internal chamber 31, which forms a
100 suitable reservoir for receiving a liquid medicine.

Extending outwardly from the opening 20 is an air-conduit 32, the outer end of which

preferably extends above the liquid level. The cap 5 is provided with a depending conduit 33, the upper end of which is secured in a suitable opening 34 in said cap and the lower end extends downwardly to a point in proximity to the lower portion of the inclined surface 14 of the partition 7. This conduit 33 preferably extends through and beyond the opening 34 and is provided at its outer end with a suitable reservoir 36, adapted to receive capsules containing a solid medicine, as powder, this reservoir 36 being also adapted to receive a liquid or medicine in any form which may be desired to administer to the animal.

In the operation of our invention the medicine may be placed in either or both reservoirs 31 and 36. The air is then compressed in the chamber 30 by means of the piston 23, and the extension 36 is then inserted into the mouth of the animal and the operator presses upon a suitable finger-piece 37 for operating the valve 17 and registering its opening 18 with the openings 19 and 20, thereby permitting the discharge of the compressed air from the chamber 30 through the tube 32 and into the reservoir 31. When the liquid is present in the reservoir, it is apparent that it will be forced outwardly through the conduit 33 and extension 36 by means of the compressed air. It is also evident that by a single operation solid medicine, as powder, or capsules may be discharged into the throat of an animal from the reservoir 36, and that said capsules or solid medicine may be administered either with or without a liquid medicine.

The operation of our invention will now be readily understood upon reference to the foregoing description and the accompanying drawings, and it will be noted that some change may be made in the detail construction and arrangement of the parts of our invention without departing from the spirit thereof—as, for instance, the cylindrical shell may be formed of a single piece of tubing and provided with end heads, or the several sections 1, 2, and 3 may be connected by suitable conduits of smaller diameter than the said sections and a suitable valve placed in the connection between the compressed-air chamber and the medicine-reservoir for controlling the discharge of air thereto.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. An apparatus for administering veterinary medicine, comprising a shell having end heads and transverse partitions dividing the shell into end and intermediate compartments having fixed relation to each other, said partitions having valved openings for the purpose specified, a piston movable in one of the end compartments to compress air in the intermediate compartment, and a conduit leading from a point in proximity to one of the partitions through the end head of the other compartment whereby medicine may be

forced from said latter compartment through the conduit by air-pressure.

2. An apparatus for administering veterinary medicine, comprising a shell having a liquid-containing chamber provided with inlet and discharge openings in its opposite ends, a conduit leading from the inlet to a point in proximity to the opposite end of the liquid-chamber, a second conduit leading from a point in proximity to the end having the inlet through the outlet, and a powder-containing reservoir connected to the outer end of the second conduit.

3. An apparatus for administering veterinary medicines comprising a cylinder having air and liquid containing chambers and a partition dividing said chambers, said partition having a passage connecting the chambers and formed with a valve-chamber connecting the passages, a valve movable in the valve-chamber and having an operating member projecting through the adjacent wall of the cylinder, a conduit leading from the passage to a point in proximity to the end head of the liquid-chamber, and an additional conduit leading from a point in proximity to the partition outwardly through said head.

4. An apparatus for administering veterinary medicines comprising a cylinder having air and liquid containing chambers and a partition dividing said chambers, said partition having a passage connecting the chambers and formed with a valve-chamber connecting the passages, a valve movable in the valve-chamber and having an operating member projecting through the adjacent wall of the cylinder, a conduit leading from the passage to a point in proximity to the end head of the liquid-chamber, and an additional conduit leading from a point in proximity to the partition outwardly through said head, and means for compressing air in the air-chamber.

5. An apparatus for administering veterinary medicines comprising a cylinder having air and liquid containing chambers and a partition dividing said chambers, said partition having a passage connecting the chambers and formed with a valve-chamber connecting the passages, a valve movable in the valve-chamber and having an operating member projecting through the adjacent wall of the cylinder, a conduit leading from the passage to a point in proximity to the end head of the liquid-chamber, and an additional conduit leading from a point in proximity to the partition outwardly through said head, a piston-chamber within the cylinder in fixed relation to the air-chamber, a partition dividing said piston and air chambers and provided with a connecting-passage and a valve, and a piston movable in the piston-chamber for the purpose set forth.

6. An apparatus for administering veterinary medicines comprising a cylinder having air and liquid containing chambers and a partition dividing said chambers, said partition having a passage connecting the chambers

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5 cylinder, a conduit leading from the passage
to a point in proximity to the end head of the
liquid-chamber, and an additional conduit
leading from a point in proximity to the par-
tition outwardly through said head and a pow-
10 der-containing receptacle secured to the outer

end of the additional conduit and receiving
the liquid discharged therethrough.

In witness whereof we have hereunto set
our hands this 27th day of July, 1901.

WILLIAM P. KING.
ELMER H. KING.

Witnesses:

H. E. CHASE,
MILDRED M. NOTT.