July 13, 1948. G. A. V. PALM ET AL 2,445,279

MEASURING PUMP WITH ADJUSTABLE STOP

Filed Nov. 8, 1945 2 Sheets-Sheet 1

FIG. 1

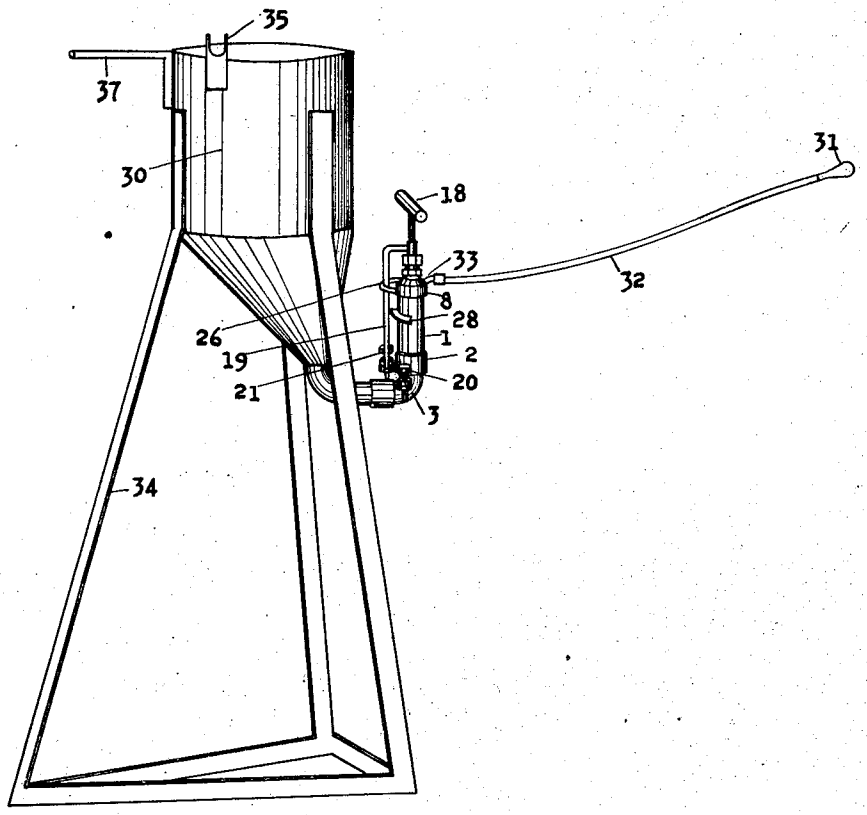
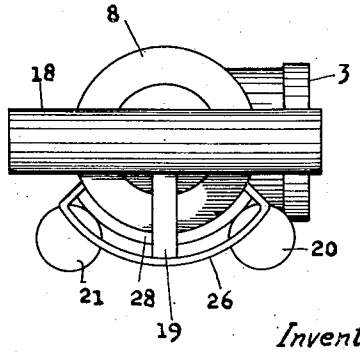


FIG. 4



Inventors

GEORGE ALFRED VINCENT PALM

AND MILTON ALBERT PALM

By Haseltine, Lake & Co.

Attorneys

July 13, 1948. G. A. V. PALM ET AL 2,445,279

MEASURING PUMP WITH ADJUSTABLE STOP

Filed Nov. 8, 1945 2 Sheets-Sheet 2

FIG. 2

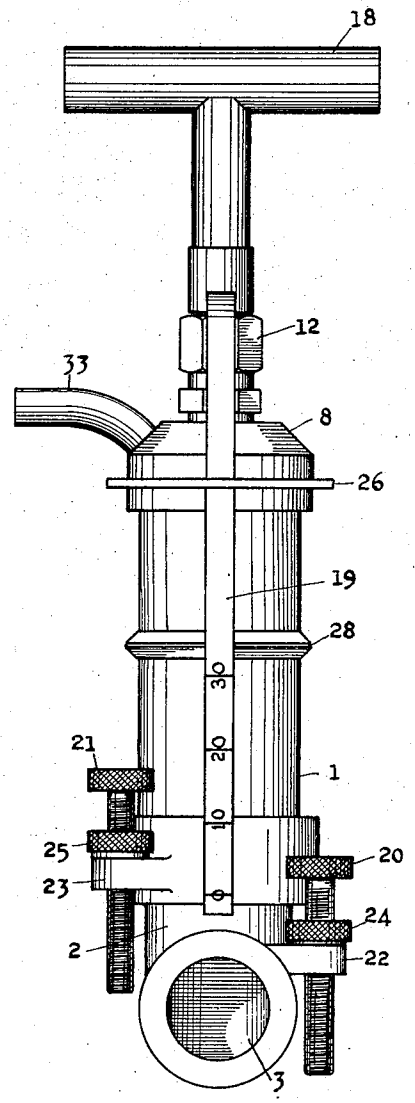
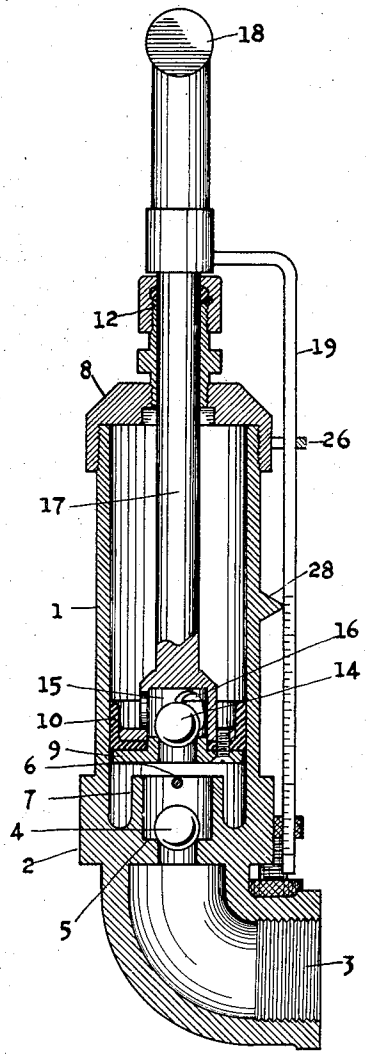


FIG. 3



Inventors
GEORGE ALFRED VINCENT PALM
AND MILTON ALBERT PALM
By Haseltine, Lake & Co.
Attorneys

Patented July 13, 1948 2,445,279

UNITED STATES PATENT OFFICE

2,445,279

MEASURING PUMP WITH ADJUSTABLE STOP

George Alfred Vincent Palm and Milton Albert Palm, Pillana, South Australia, Australia

Application November 8, 1945, Serial No. 627,327
In Australia November 20, 1943

3 Claims. (Cl. 222—309)

1

This invention relates to an improved gun for administering measured doses of a drench, such as phenothiazene to sheep.

In administering a drench particularly a drench such as phenothiazene it is necessary to take into account the different ages of the sheep in fixing the quantity, and consequently it is desirable to select different doses as the operation of drenching proceeds. It is necessary that the gun shall deliver the exact quantity of drench decided upon, as over-dosing or underdosing will render the effect negligible or harmful.

It is with the objects of providing a gun in which accurately measured quantities of drench can be selected and administered in a most convenient manner that this invention has been devised.

According to the preferred construction a measuring cylinder has within it a piston which is adapted to draw drench from a container and to discharge same to a drenching nozzle upon a tube or the like, the piston being associated with a plurality of stop means which can readily be selected at will by manipulating the piston rod and which have the effect of allowing different length of traverse of the piston according to the stop selected. Calibrations are provided to show the quantity of drench selected.

To enable the invention to be more clearly understood it will now be described with reference to the accompanying drawings in which:

Fig. 1 is a perspective view of the complete device including the gun and container.

Fig. 2 is an elevation of the gun.

Fig. 3 is a central section of same, and

Fig. 4 is a plan of Fig. 2.

The gun comprises a cylinder 1 which has at its base 2 an inlet 3 for the drench and has immediately above this inlet a ball valve 4 which cooperates with a seating 5 to allow the drench to pass into the cylinder only. A cross-bar 6 prevents the valve 4 from leaving the cage 7 which contains the ball. The cylinder is closed by a cap 8.

Within the cylinder 1 is a piston 9 which is preferably provided with a cup 10 to make same liquidtight, the piston being mounted upon the end of a rod 11 which passes through a packing gland 12 in the top of the cylinder to effect a liquid-tight closure at this locality.

Within the piston 9 is a second ball valve 14 which is held in a cage 15 and which allows the drench to pass through the piston only in an upward direction so that during its downward stroke the piston will move freely through the drench

2

held in the cylinder by the lower valve but on its upward motion will cause such drench to be carried by the piston to discharge from an outlet at the top of the cylinder, the upward motion of the piston drawing a new charge of drench into the lower part of the cylinder. The cage has apertures 16 through which the drench can pass.

The piston rod 9 is provided with a grip 18 whereby it may readily be manipulated and is rotatable within the cylinder, the rod 9 being so arranged that rotation about its axis brings a measuring bar 19 into register with different stop means so that the extent of movement can be adjusted at will. The grip 18 may take the form of a knob or D handle.

The stop means comprise adjustable screws 20 and 21 supported on lugs 22 and 23 respectively, which screws may be located to bring their heads at different distances from the base, the heads being adapted to be contacted by the measuring bar 19 projecting down from the piston rod. The stops do not limit the upward movement but regulate the distance to which the piston can be moved down in the cylinder and consequently regulate the charge which may be collected in the upper part of the cylinder to be discharged on the upward stroke of the piston. The screws 20 and 21 have lock-nuts 24 and 25 respectively.

The measuring bar 19 operates through an arch-shaped guide 26 which allows it to be swung around when the piston rod is revolved but which limits the movement to engage the screws 20 or 21.

An indicator ridge 28 forms an indexed mark for a scale upon the bar 19 and which consequently allows setting of the stops to measure the exact quantities which each stop is to regulate.

The device just described is supported at the base of a container 30 which may be mounted upon a stand and which holds the drench, the drench automatically feeding to the cylinder and thus eliminating the possibility of air bubbles.

The nozzle 31, by means of which the drench is administered, is connected with the device by means of a length of flexible tube 32, the hose being slipped on to a hollow nipple 33 upon the top of the cylinder. The nipple communicates with the inside of the container.

The container is supported on legs 34 and has a fork 35 in which the nozzle may be engaged when not in use. A handle 37 secured to the container allows same to be readily carried.

What we claim is:

1. An improved drenching gun comprising: a cylinder, means to place the cylinder into com-

munication with a supply of drenching fluid, a piston rod, a piston within such cylinder and carried on said piston rod, valve means arranged to allow the fluid to be drawn through said cylinder and piston in one direction only, a plurality of adjustable stops, a stroke controlling member attached to said piston rod, said member being adapted to be positioned in line with any one of said stops by rotating said piston rod, graduations on said stroke controlling member, means upon said cylinder against which the graduations can be read, and stop means to limit the rotation of said piston rod.

2. An improved drenching gun comprising: a cylinder, means to place the cylinder into communication with a supply of drenching fluid, a piston rod, a piston within such cylinder and carried on said piston rod, valve means arranged to allow the fluid to be drawn through said cylinder and piston in one direction only, a pair of adjustable stops, a graduated stroke controlling member attached to said piston rod and adapted to be positioned in line with either of said stops by rotating said piston rod, and means to limit rotation of said piston rod to bring said stroke controlling member above one of the said stops when said piston rod is revolved in one direction and over the other stop when said rod is revolved in the opposite direction.

3. An improved drenching gun comprising: a cylinder, a means to place said cylinder into communication with a supply of drenching fluid, a piston rod, a piston within such cylinder and carried on said piston rod, valve means arranged to allow the fluid to be drawn through said cylinder and piston in one direction only, a plurality of adjustable stops, a stroke controlling member attached to said piston rod, said member being adapted to be positioned in line with any one of said stops by rotating said piston rod, graduations on said stroke controlling member, means upon said cylinder against which the graduations can be read, and stop means to limit the rotation of said piston rod.

munication with a supply of drenching fluid, a piston rod, a piston within such cylinder and carried on said piston rod, valve means in said cylinder adapted to allow fluid to be drawn into said cylinder by upward movement of said piston but to prevent the return flow of the fluid, valve means in said piston adapted to allow the fluid to pass therethrough when said piston is moved downwardly but to prevent reverse flow, means connected to said cylinder whereby the drench may be applied to an animal, a plurality of adjustable stops on said cylinder, a stroke controlling member attached to said piston rod, said member being adapted to be positioned in line with any one of said stops by rotating said piston rod, graduations on said stroke controlling member, means upon said cylinder against which said graduations can be read, and stop means to limit the rotation of said piston rod.

GEORGE ALFRED VINCENT PALM.
MILTON ALBERT PALM.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,081,817	Deming	Dec. 16, 1913
2,114,699	Boehmer	Apr. 19, 1938