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W. J. BARBER.
POWDER DISTRIBUTER.
APPLICATION FILED AUG. 21, 1906.

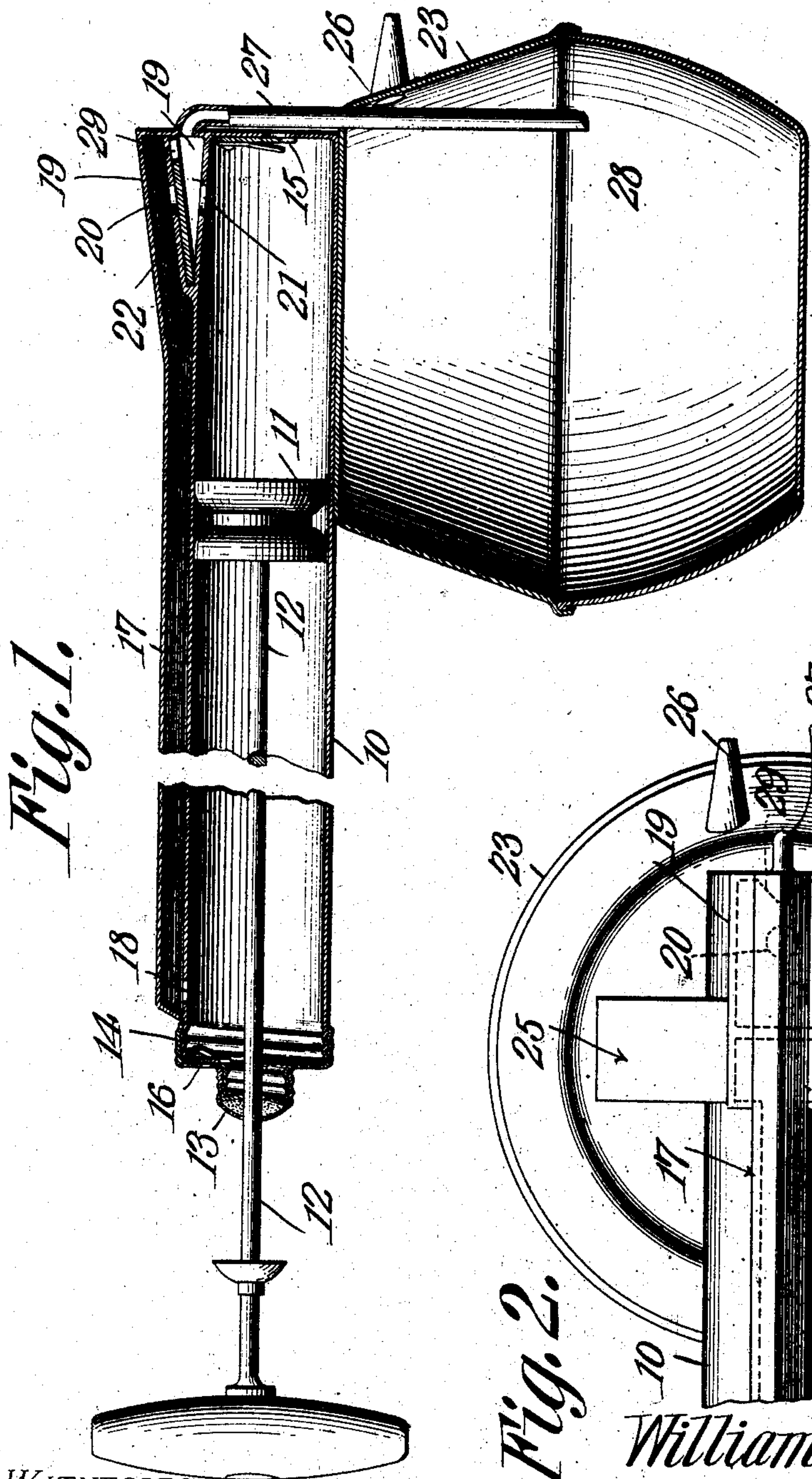
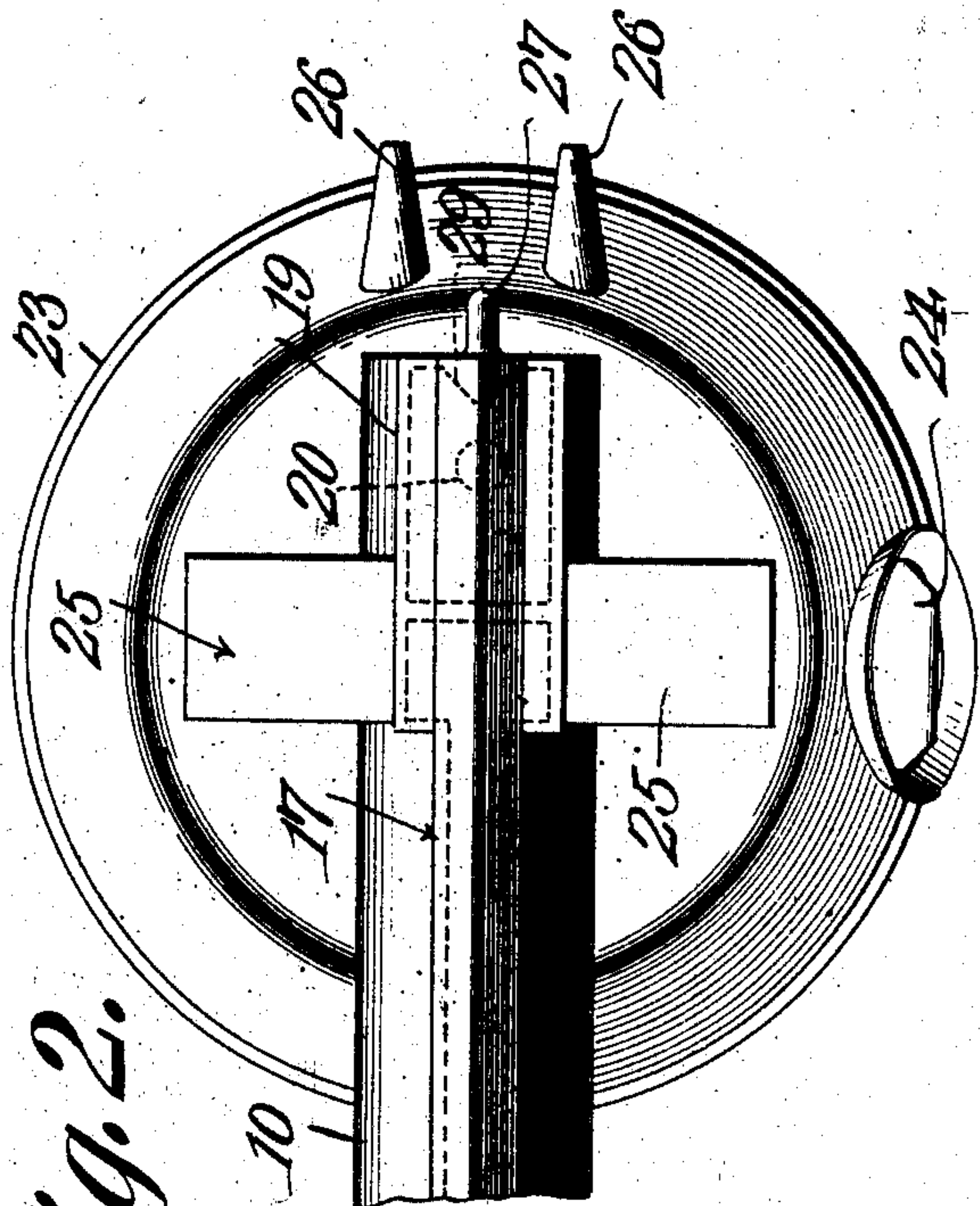


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM JAY BARBER, OF HONEOYE FALLS, NEW YORK, ASSIGNOR OF ONE-HALF TO CHARLES E. BOULT, OF HONEOYE FALLS, NEW YORK.

POWDER-DISTRIBUTER.

No. 846,718.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed August 21, 1906. Serial No. 331,509.

To all whom it may concern:

Be it known that I, WILLIAM JAY BARBER, a citizen of the United States, residing at Honeoye Falls, in the county of Monroe and State of New York, have invented a new and useful Powder-Distributor, of which the following is a specification.

This invention relates to implements employed for distributing powder or other finely-divided material, more particularly to devices of this character employed for distributing insect-destroying powder upon plants, and has for its object to improve the construction and increase the efficiency of devices of this character.

With these and other objects in view, which will appear as the nature of the invention is better understood, the invention consists in certain novel features of construction, as hereafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which corresponding parts are denoted by like designating characters, is illustrated the preferred form of the embodiment of the invention capable of carrying the same into practical operation.

In the drawings, Figure 1 is a longitudinal section of the improved implement. Fig. 2 is a plan view of the forward portion of the implement. Fig. 3 is a perspective view of the double-acting valve detached.

The improved implement comprises an air-pumping cylinder 10, having a plunger 11 operative therein by a rod 12, the latter extending through a suitable stuffing-box 13 on a detachable cap 14, forming a closure to one end of the cylinder. The closed end of the cylinder has an intake-valve 15, and the detachable cap 14 is provided with an intake-valve 16. Extending longitudinally of the cylinder 10 is a tubular air-compacting chamber 17, communicating at 18 with the interior of the cylinder 10 near the cap end. Formed upon the cylinder 10 at its closed end is a valve-chamber 19, over which the air-conductor chamber 17 extends and with which it communicates by a port 20, while the valve-chamber likewise communicates with the interior of the cylinder 10 by a port 21.

The valve-chamber is V-shaped and provided with a flexible valve 22, lying loosely therein and adapted to alternately close the

ports 20 21 under the influence of the air-currents, as hereafter explained.

Connected to the cylinder 10 is a receiver 23 of suitable capacity to receive the powder to be distributed and provided with an aperture closed by a detachable cap 24, through which the powder is supplied to the receiver. The receiver is suitably braced at 25 from the cylinder and provided with suitable discharge-nozzles 26. A tube 27 leads from the valve-chamber 19 to the interior of the receiver 23 and terminates, as shown at 28, somewhat below the center of the same, so as to more effectually act upon the powder, as hereafter explained. By this arrangement the plunger is double acting or operative upon the powder in the receptacle at both the forward and return stroke of the plunger. Thus when the plunger is forced inward the air is drawn into the cylinder through the valve 16 and expelled through the port 21, the air closing the valve 15 against its seat and also closing the valve 22 against the port 20 and causing the air in advance of the plunger to be forced through the valve-chamber and conductor-tube 27 into the receiver 23 and drives a certain amount of the powder therein forcibly through the nozzles 26. Then at the return stroke the air at the other side of the plunger is driven through the port 18, conducting-chamber 17, and port 20 into the chamber 19, reversing the valve 22 and closing the port 21 and causing the air to pass to the receiver through the tube 27 and again driving a certain amount of the powder through the nozzles 26, and so on so long as any powder remains in the receiver.

The valve 22 is merely a sheet of leather, rubber, or like material completely filling the valve-chamber transversely and lying loosely therein and movable at the larger end only of the chamber and held from movement by the contracted end. The valve is provided with a recess 29 in its movable end to permit the air to pass.

The cylinder and receiver may be of any suitable size and any suitable material and may therefore be inexpensively manufactured and adapted to any of the various uses to which devices of this character are applied.

I claim—

1. In a device of the class described, a cylinder having intake-valves at the ends, a

plunger operating in said cylinder, a receptacle associated with said cylinder and provided with discharge-nozzles, a valve-chamber associated with said cylinder at one end, a tubular chamber extending longitudinally of said cylinder and provided with ports communicating respectively with said valve-chamber and cylinder, a port between said valve-chamber and cylinder, a valve movably disposed within said valve-chamber and operating to alternately close the ports therein, and a conductor between said valve-chamber and receiver.

2. In a device of the class described, a cylinder having intake-valves at the ends, a plunger operating in said cylinder, a receptacle associated with said cylinder and provided with discharge-nozzles, a valve-chamber associated with said cylinder at one end, and with diverging sides, a tubular chamber

extending longitudinally of said cylinder and provided with ports communicating respectively with said cylinder and said valve-chamber through one of its diverging sides, a port between the other diverging side of the valve-chamber and said cylinder, a valve within said chamber with one end engaging the contracted end of the same and free to move between the diverging sides and adapted to alternately close the ports therein, and a conductor between said valve-casing and receptacle.

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

WILLIAM JAY BARBER.

Witnesses:

A. H. LORD,
GEO. R. JOHNSON.