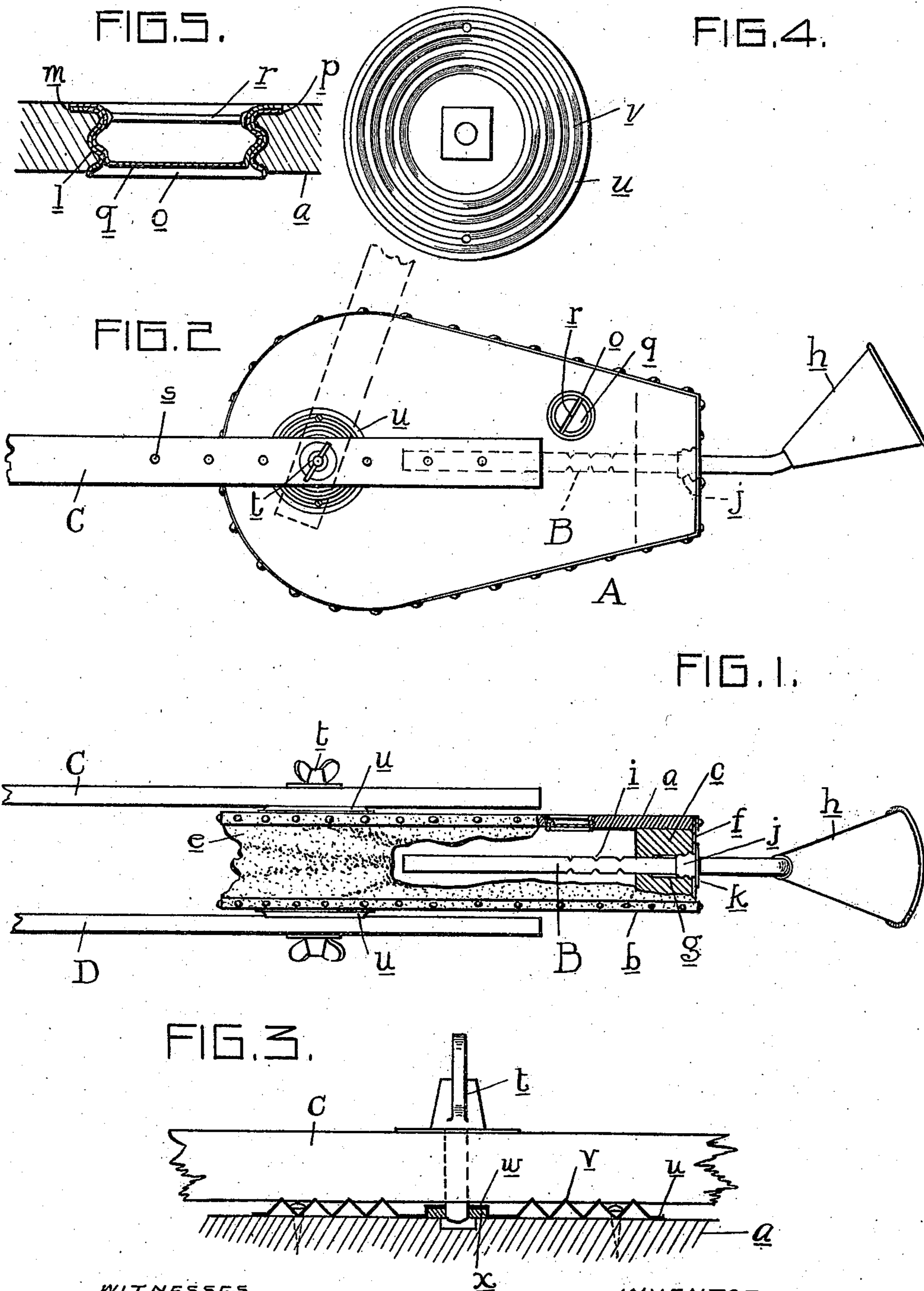


No. 847,464.

PATENTED MAR. 19, 1907.

C. N. CHOATE.  
POWDER DISTRIBUTER.  
APPLICATION FILED MAR. 26, 1906.



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# UNITED STATES PATENT OFFICE.

CHARLES N. CHOATE, OF WOODSTOCK, ONTARIO, CANADA, ASSIGNOR OF  
ONE-HALF TO FRED E. ATCHISON, OF DETROIT, MICHIGAN.

## POWDER-DISTRIBUTER.

No. 847,464.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed March 26, 1906. Serial No. 308,187.

*To all whom it may concern:*

Be it known that I, CHARLES N. CHOATE, a citizen of the United States of America, residing at Woodstock, in the county of Oxford and Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Powder-Distributers, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates particularly to a powder-bellows, especially designed for spraying the under sides of leaves of shrubbery or small plants; and it consists in the novel construction of the bellows and the peculiar combination and arrangement of its parts, as hereinafter set forth.

In the drawings, Figure 1 is a side elevation, partly in section, of my improved powder-distributer. Fig. 2 is a plan view. Fig. 3 is a longitudinal sectional view illustrating the clamping mechanism for the operating-handle. Fig. 4 is a detached plan view of one of the friction-plates, and Fig. 5 is a detailed sectional view through the fill opening and closure of the bellows proper.

In construction the powder-dispenser is formed of a bellows A of any ordinary construction, comprising the usual bellows-plates *a* and *b*, a head-block *c*, interposed between the forward ends of the plates and to which the latter are connected, and the leather *e*, connecting the plates and preferably extending over the front end of the head-block, as indicated at *f*, for the purpose hereinafter set forth.

B represents a conduit for the bellows, comprising an open-ended tube extending through an aperture *g* in the head-block and within the bellows a considerable distance and terminating at its outer end in an enlarged funnel-shaped discharge-section *h*. The conduit is provided with a plurality of inlet-openings, as *i*, formed in its sides in proximity to the head-block for the admission of powder, and is further provided with a screw-section *j*, adapted to engage a thread formed in the apertured block, as indicated in Fig. 1.

*k* represents an annular flange upon the conduit immediately adjacent the thread, which when the conduit is screwed in place abuts against the leather-covered head-block forming a tight joint, preventing leak-

age of the bellows during the discharging of the powder.

One of the plates, as *a*, is provided with an inlet-opening *l*, counterbored at *m*. Within this opening is fitted a threaded thimble *o*, having a laterally-flaring section *p* engaging the counterbore and extending flush with or below the outer face of the bellows-plate. *q* represents a hollow closure for the opening, threaded exteriorly to engage the thimble-thread and provided with a cross-bar *r*, connected at its ends to the walls of the closure, permitting the removal and insertion of the latter.

C and D represent operating-handles for the bellows having adjustable connections with the latter, permitting a rotary adjustment to be effected for the purpose of bringing the discharge end of the conduit beneath the plant foliage for the purpose of spraying the under sides of the leaves. Each handle is formed with a series of apertures, as *s*, and is clamped to the bellows by means of a clamping device, preferably in the form of a wing-bolt *t*.

For the purpose of positively holding the handles in their different positions of adjustment friction-plates *u* are employed, secured one upon each bellows-plate in the manner indicated in Fig. 1. These friction-plates are formed with concentrically-arranged series of corrugations, trough-shaped in configuration and having sharp upwardly-extending edges *v*, as indicated in Fig. 3. They are further provided centrally with apertured housings, as *w*, within each of which is arranged a nut *x*, the aperture in which registers with the housing-aperture, as indicated. The winged clamping-bolt *t* is adapted to extend through one of the apertures *s* in the operating-handle and to engage the nut in the housing.

In practice the bellows is first filled with the insect-powder desired through the fill-opening, and by reason of the peculiar construction of the latter any surplus powder that may have fallen upon the bellows-plate can be readily brushed within the opening, and thus not wasted. This is a desirable construction, as in the event that powder, such as paris-green, is spilled upon the bellows during the operation of filling and cannot be readily brushed into the bellows, as set forth, it is necessarily wasted.

The handles of the bellows are of a length to permit of the operation without the necessity of stooping, the inclined position throwing the powder necessarily into the forward end of the bellows.

As the bellows are expanded air enters through the discharge-conduit, and upon the collapsing of the bellows the powder is driven through the inlets *u* and discharged from the conduit in the usual manner.

If it is desired to lengthen or shorten the handles to suit the implement to the user, this may be readily effected by a longitudinal adjustment. When it is desired to spray beneath the leaves of the plants, a rotary adjustment of the bellows may be effected by turning the handles into the position indicated by the dotted lines in Fig. 2, when the discharge-conduit will extend in a direction practically at right angles from the ground. As the turning of the bellows in the upward direction necessarily shortens the implement, the necessary increase in length is obtained by a longitudinal adjustment of the handles, the winged bolts being inserted through the last opening in the bars, as indicated.

What I claim is—

1. In a powder-distributor, the combination with a bellows, of the operating-handles therefor, and connections between the handles and the bellows-plates permitting rotary adjustment of the bellows.

2. In a powder-distributor, the combination of a bellows, of operating-handles therefor arranged for extension relatively thereto and means for effecting a relative rotary adjustment of the bellows.

3. In a powder-distributor, the combination of the bellows, and an open-ended discharge-conduit therefor extending a considerable distance within the bellows and having one or more inlet openings or apertures formed in the sides in proximity to the bellows-front.

4. In a powder-distributor, the combination with the bellows-plates, of the operating-handles therefor formed each with a longitudinal series of openings, and a clamping member for each handle engaging one of the several apertures therein.

5. In a powder-distributor, the combination with the bellows-plates, of an apertured head-block interposed therebetween, a discharge-conduit extending through the block, and having a threaded engagement therewith, and an annular flange upon the conduit abutting against the block.

6. In a powder-distributor, the combination with a bellows-plate, having a counter-bored fill-opening therein, of a threaded thimble fitting within the opening, of a marginal flange thereon fitting within the counterbore below or flush with the plate-face, and a closure engaging the thimble consisting of a hollow externally-threaded cap, and a cross-bar secured within the upper portion thereof.

7. In a powder-distributor, the combination with the bellows-plates, of friction-plates thereon, operating-handles for the bellows extending across said friction-plates, and clamping devices for holding the handles in engagement with the plates, substantially as described.

8. In a powder-distributor, the combination with the bellows-plates, of friction-plates thereon formed each with a central apertured housing, a nut within each housing opposite its opening, operating-handles for the bellows projecting diametrically across the friction-plates, and clamping members extending through the handles and housings into engagement with the nuts.

9. In a powder-distributor, the combination with the bellows-plates, of friction-plates thereon formed each with a central apertured housing and one or more circumferential ridges extending above the housing, a nut within each housing registering with its aperture, operating-handles for the bellows projecting diametrically across the friction-plates, and winged bolts extending through the handles and housings into engagement with the nuts.

10. In a powder-distributor, the combination with the bellows-plates, of friction-plates thereon formed each with a central apertured housing and one or more ribs extending above the housing, a nut within each housing registering with its aperture, operating-handles for the bellows projecting across the friction-plates, and means for holding the handles and the ribs in engagement with each other.

11. In a powder-distributor, the combination with a bellows, of operating-handles therefor and means for extending said handles relatively thereto.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES N. CHOATE.

Witnesses:

ALBERTA M. YOUNG,  
J. G. WALLACE.