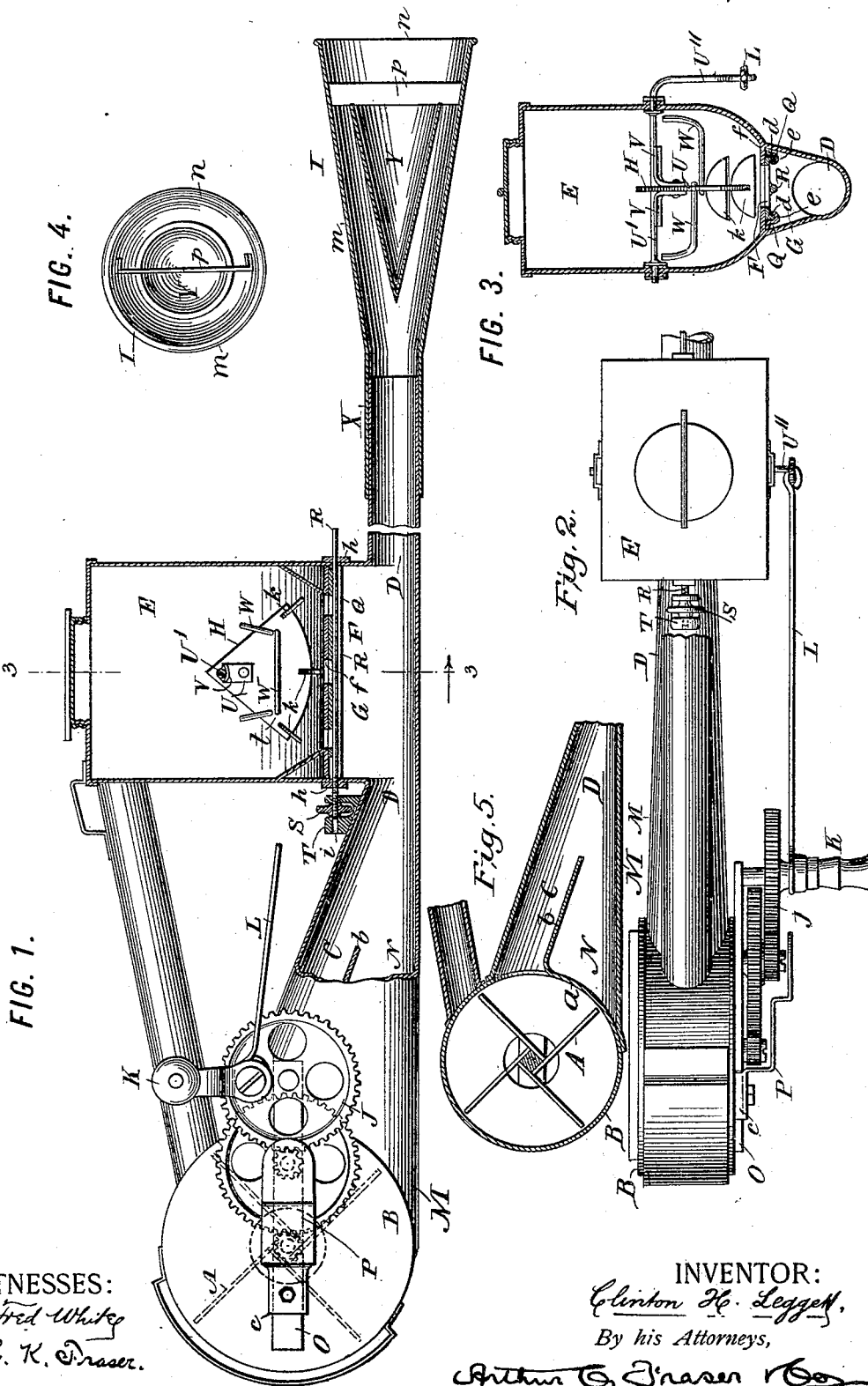


(No Model.)

C. H. LEGGETT.
INSECT POWDER DISTRIBUTER.

No. 511,781.

Patented Jan. 2, 1894.



WITNESSES:
Fred. White
C. K. Fraser.

INVENTOR:
Clinton H. Leggett.
By his Attorneys,

Arthur C. Fraser & Co.

UNITED STATES PATENT OFFICE.

CLINTON H. LEGGETT, OF NEW YORK, N. Y.

INSECT-POWDER DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 511,781, dated January 2, 1894.

Application filed June 21, 1893. Serial No. 478,328. (No model.)

To all whom it may concern:

Be it known that I, CLINTON H. LEGGETT, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Insect-Powder Distributers, of which the following is a specification.

This invention relates to powder distributers of the class in which an air blast is used to take the powder from a reservoir and discharge it from a spout onto plants, trees or other things to which the powder is to be applied. Such distributers are shown in my United States Patents No. 376,600, dated January 17, 1888, and No. 421,942, dated February 25, 1890, upon which my present invention is most particularly an improvement.

This invention provides certain improvements in the box for the rotatory fan and the adjacent shell of the machine, in the distributing spout for the device, in the agitator and the valve for the powder reservoir and it provides an improved protecting guard for the gearing of the fan and improved means for adjusting the valve and preventing injury from the valve rod.

In the accompanying drawings, which illustrate certain adaptations of my invention, Figure 1 is a side elevation, the reservoir and discharge tube being in axial mid section, and the tube partly broken out, of a powder distributor constructed according to the preferred form of my invention. Fig. 2 is a fragmentary plan view thereof. Fig. 3 is a fragmentary transverse section thereof on the line 3-3. Fig. 4 is an end elevation of the preferred form of discharge spout. Fig. 5 is a vertical mid section of the fan shell and the adjacent frame of the machine.

Referring to the drawings I will now describe in detail the preferred form of my invention as applied to a "powder gun" of the general character shown in my said patents.

The apparatus consists of a blower or fan A mounted in the shell B, and air duct C, a delivery pipe D, a powder reservoir E, a valve F at bottom of said reservoir for controlling the discharge therefrom, a chamber G below said valve and communicating with said tube D, an agitator H within the reservoir, a spout I at the end of tube D, a train of gearing J for operating said blower, a handle K for operat-

ing said gearing, and a connecting rod L between said gearing and agitator for operating the latter. As thus far described these parts in their general features have been heretofore used in powder distributers.

According to my invention I construct the cylindrical shell B within which rotates the fan or blower A with a circular wall *a*, at one part of which is a tongue *b* bent outwardly and downwardly at an angle within the adjacent end of the air tube D. This tongue equals in width the internal width of the adjacent end of the air tube and is preferably soldered to the opposite inner side walls thereof and extends angularly parallel with the angular top wall thereof, constituting the bottom side of the air duct C leading from the blower to the tube. I construct the base M of the air tube D of a flaring piece of tin, parallel at bottom with the general axis of the tube, flat at sides and angular at top, its top rising from the tube D to near the upper part of the blower shell B, soldered at its rear edges to the curved faces of the blower shell and connected at its smaller forward end to the cylindrical part of the air tube at rear of the reservoir. Thus the base of the tube may be made of a single sheet of metal, will have the requisite extent of surface at base for attachment to the blower, will have but one joint to be made tight against leakage, and all the space within its interior and below the tongue *b* can be utilized as a dust chamber N for the powder falling back toward the blower. The air tube D opposite and beyond the reservoir is of the usual tubular construction. The gearing J consists of the usual train of gears and pinions mounted on a metal bracket O on the side of the blower. According to my invention I provide a guard P for protection against injury to the hands of the operator by the gears. This consists of a thin metallic strip fixed to the bracket O at its rear end, having side flanges *c* engaging the edges of this bracket to reinforce it, and thence widened out and projecting laterally and forwardly over and beyond the several gears and pinions, and terminating in a rounded end overlapping the teeth of the initial or handle gear.

According to another feature of my invention I construct the valve F of a thin perfo-

rated plate having down turned edges d at its sides, which edges seat within and are engaged by vertical grooves e in side plates Q soldered to the perforated bottom plate f of the reservoir, within the chamber G . I solder the valve rod R across the under side of the valve, and pass it through apertures h in the front and rear walls of the reservoir, and screw thread its rear end, providing a thumb nut S engaging this screw threaded end and a nut bracket T embracing this nut on opposite sides and having a closed or covered aperture i in its enlarged rearward end, within which the rear end of the rod R works. The nut guard T is preferably fixed on the top wall of the base M of the tube D . By rotating the nut S the rod and register can be adjusted to open communication from the reservoir to any extent desired. Such adjustment will be maintained until the screw is further rotated. All danger of injuring the hands by contact with the screw threaded end of the rod is avoided by the guard T .

My improved agitator consists of a vertical plate U mounted on an oscillatory cross arm U' having a crank end U'' engaged by the connecting rod L . On each side of the plate U is fixed an angle plate V , having horizontal portion extending laterally around the under side of the arm U' , and the solder for attaching the plate and arm together is poured on the former above the angle plates whereby throughout their length they are securely soldered to the arm and thereby firm connection between the latter and the plate is secured. The sides of the plate U are preferably angular and the bottom edge curved, and to this curved edge are secured a plurality of arc shaped cross wings k having curved tops and flat bottoms, which sweep back and forth across the bottom of the reservoir above its perforated bottom plate f .

Another feature of my agitator is the improved cross bars W . Each consists of a U-shaped piece of wire the ends of which are passed through holes l in opposite sides of the plate U , the intermediate portion being then soldered to the plate and the projecting ends turned up or down near the side walls of the reservoir. There are two of these U-shaped pieces, the prongs of one projecting at one side and those of the other at the other side. The arms or cross bars thus constructed are very strong and durable, and suffice to agitate the powder above the wings k .

My invention comprises an improved distributing spout for the discharge end of the air tube. The spout has a diverging mouth which distributes the discharge powder over a large area and so moderates its speed of discharge that it settles upon instead of being blown off the article to be powdered. In its preferred form the spout consists of the usual neck X fitting over the end of the air tube and of an outwardly flaring or diverging shell m , terminating in a large free open mouth n , and preferably within this is mount-

ed a deflector Y which preferably consists of tapering or conical tin piece mounted axially within the spout with its apex toward the neck X , having a greater relative inclination or taper than the adjacent shell m , and terminating at its base some distance within the shell, whereby around the deflector there is an annular space of gradually decreasing width and beyond there is a cylindrical space leading to the mouth n . Preferably a cross bar p is soldered to the base of the deflector and to the adjacent inner wall of the spout. The current flowing through the spout is divided and spread by the deflector into an annular stream, passes into the cylindrical mouth and out of the latter in a large stream of relatively reduced force, and having a tendency to expand both inwardly and outwardly as it progresses beyond the spout.

It will be seen that my invention provides an improved powder gun and it will be understood that the invention is not limited to all of the details of construction hereinbefore set forth as its preferred form, as these may be departed from to some extent without departing from the essential features of the invention.

What I claim is, in powder-distributors, the following-defined novel features and combinations, substantially as hereinbefore set forth, namely:

1. In a powder distributor, a blower, an air tube and a reservoir in combination with the spout for said tube having an enlarged diverging tubular shell, and a deflector mounted centrally within said shell and deflecting the discharge therethrough outwardly against the outer walls thereof, whereby the discharge through said spout is in the form of an annular stream.

2. In a powder distributor, a blower, a reservoir and a tube, in combination with a spout for the latter consisting of a diverging shell m , a deflector consisting of a cone Y within said shell, and a cross bar p supporting said cone.

3. In a powder distributor, a blower, an air tube and a reservoir in combination with an agitator U in said reservoir, a cross-arm U' carrying said agitator, and an angle plate V consisting of a piece of metal having a vertical portion fastened against the side of the agitator U below said arm U' and having a horizontal portion fastened against the under side of said arm U' , substantially as and for the purpose set forth.

4. In a powder distributor, a blower, an air tube and a reservoir in combination with an agitator U in the reservoir consisting of a vertical plate having the shape of a segment of a circle and a plurality of wings k fixed to the lower edge of said plate, substantially as and for the purpose set forth.

5. In a powder distributor, a blower, an air tube and a reservoir in combination with an agitator within the latter consisting of a plate U , having arms W consisting of U-shaped

bars fixed at their middles to said plate and projecting laterally therefrom at their ends.

6. In a powder distributor a blower, an air tube and a reservoir, in combination with a valve for the latter having a screw threaded rod projecting at rear of the valve and a thumb nut engaging said rod for adjusting said valve.

7. In a powder distributor, a blower, an air tube, a reservoir and a valve, in combination with a screw threaded valve rod projecting exteriorly of the reservoir, a thumb nut engaging said rod for operating it, and a guard T embracing said nut and inclosing the end of said rod, as and for the purpose set forth.

8. In a powder distributor the combination with a rotary blower A, a casing B inclosing it, a bracket O fixed on the side of said casing, gearing J for operating said blower and fixed on the outside of said bracket, an air tube, and a reservoir, of a gear guard P consisting of a strip of metal stepped outwardly to fit over the wheels of said gearing, fixed at its inner end to the casing of the distributor, free

at its outer end and overlapping the teeth of the outermost wheel of said gearing for protecting the user from injury by the latter.

9. In a powder distributor, a blower, an air tube and a reservoir, in combination with a cylindrical casing B for the blower, having a circular wall consisting of a curved sheet of metal *a* having its end bent outwardly and forming an integral tongue *b* projecting outwardly, and a casing M constituting the base of said air tube having an enlarged end fixed to said casing B, and inclosing said tongue, whereby said casing is divided by said tongue into an air passage C and a dust pocket N, substantially as and for the purpose set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CLINTON H. LEGGETT.

Witnesses:

GEORGE H. FRASER,
THOMAS F. WALLACE.