No. 750,968. PATENTED FEB. 2, 1904.

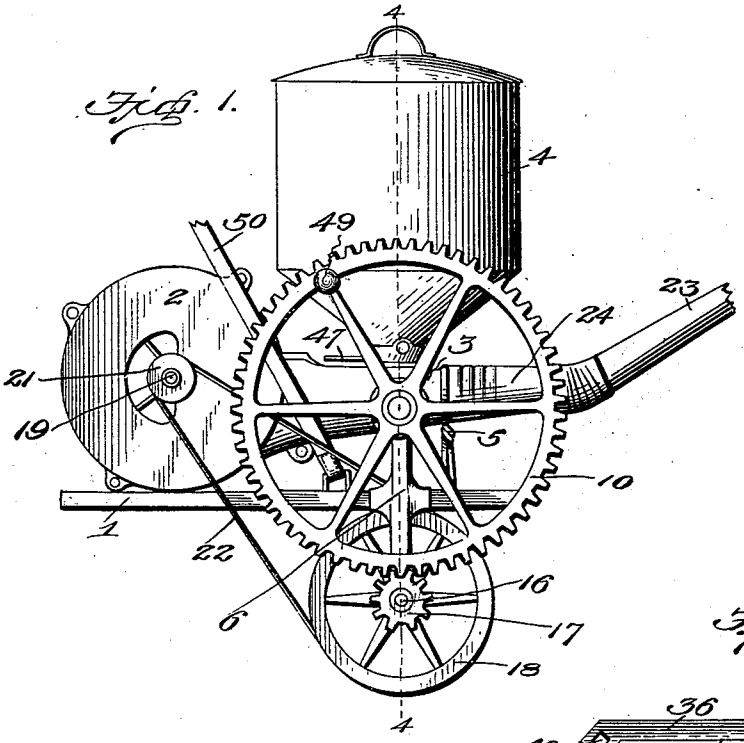
J. R. HALDEMAN.

DUST SPRAYING MACHINE.

APPLICATION FILED APR. 23, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.



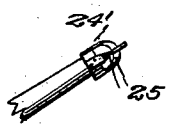


Fig. 8.

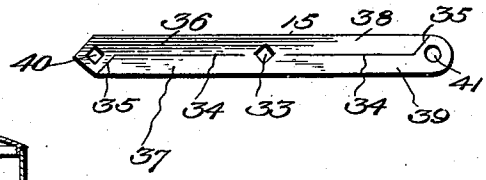
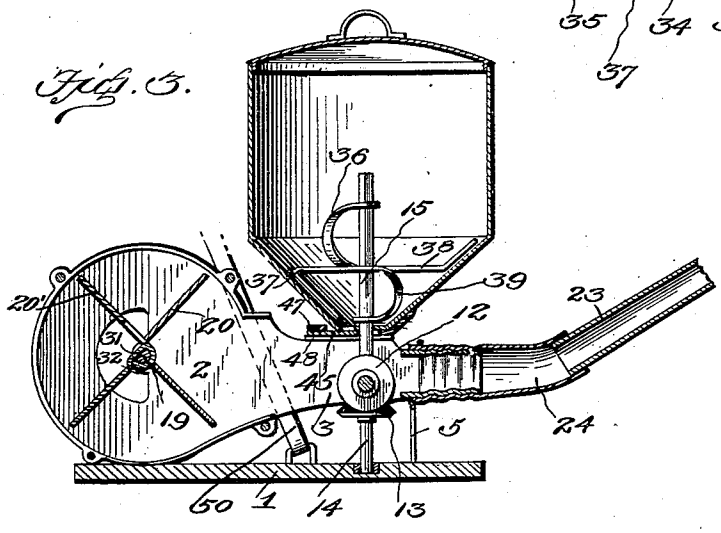
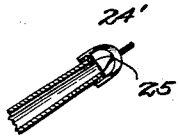


Fig. 3.





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No. 750,968. PATENTED FEB. 2, 1904.

J. R. HALDEMAN.

DUST SPRAYING MACHINE.

APPLICATION FILED APR. 23, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 2.

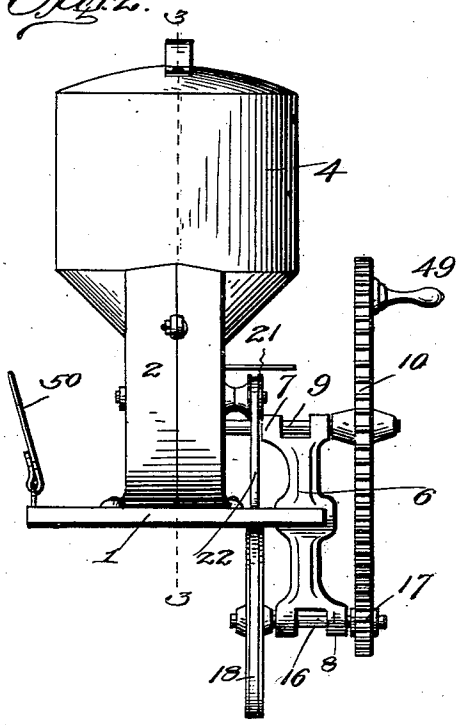


Fig. 4.

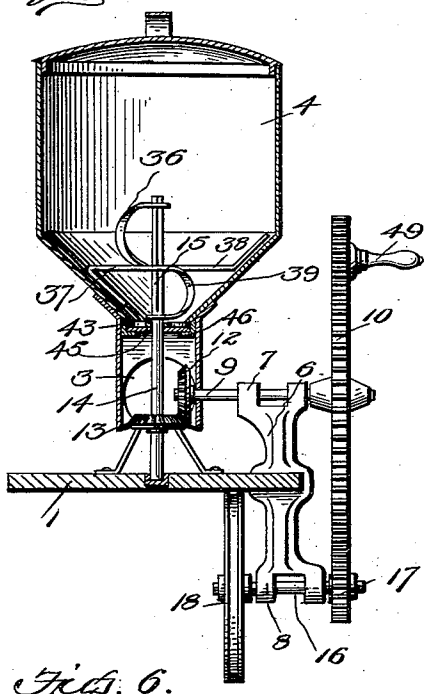


Fig. 5.

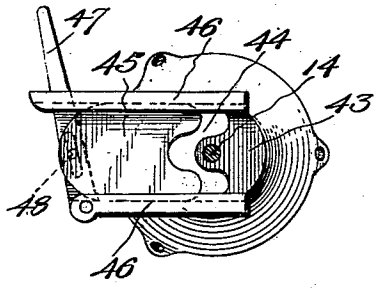


Fig. 6.

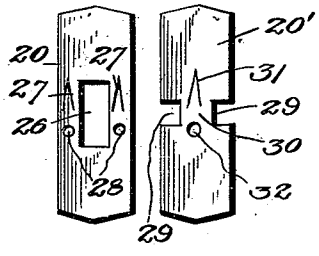
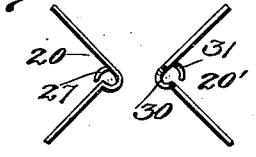


Fig. 7.



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No. 750,968. Patented February 2, 1904.

UNITED STATES PATENT OFFICE.

JOHN R. HALDEMAN, OF SPRINGFIELD, MISSOURI.

DUST-SPRAYING MACHINE.

SPECIFICATION forming part of Letters Patent No. 750,968, dated February 2, 1904.

Application filed April 23, 1903. Serial No. 153,964. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. HALDEMAN, a citizen of the United States, residing at Springfield, in the county of Greene and State of Missouri, have invented certain new and useful Improvements in Dust-Spraying Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to machines for spraying or blowing dust or powder and the like.

The object of the invention is to provide a machine of this character which can be readily carried by the operator and which is adapted to spray dust or powdered insecticides or disinfectious or other preparations upon trees or plants or wherever desired.

A further object is to provide a device for spraying dust or powder which will be simple, strong, and durable, inexpensive, and well adapted to the use for which it is designed.

With these and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be more fully described, and particularly pointed out in the appended claims.

Figure 1 is a side elevation of the machine. Fig. 2 is an end view of the same. Fig. 3 is a longitudinal vertical section on the line 3 3 of Fig. 2. Fig. 4 is a vertical cross-section on the line 4 4 of Fig. 1. Fig. 5 is a bottom plan view of the hopper, showing the adjustable feed-opening. Fig. 6 is a plan view of the blanks from which the fan-blades are formed. Fig. 7 is an edge view of the blades bent into position for engagement. Fig. 8 is a plan view of the blank from which the agitator-blades are formed.

In the drawings, 1 denotes the base or supporting board. 2 denotes a fan-casing suitably mounted upon said board and provided with a forwardly-projecting funnel-shaped discharge-tube 3.

4 denotes a cylindrical hopper having a conical bottom and adapted to be fixed to and supported by said discharge-tube 3, the end of tube 3 being supported and held in a bracket 5, projecting upwardly from the board 1.

6 denotes a standard fixed to one side of the board 1 and projecting above and below the same, and on the upper and lower ends of the standard 6 are formed bearings 7 and 8. In the upper bearing 7 is mounted a horizontally-disposed shaft 9, carrying at its outer end a master gear-wheel 10.

On the inner end of the shaft 9 is fixed a beveled pinion 12, which meshes with a bevel-pinion 13, fixed on a vertically-disposed shaft 14, the lower end of which has a stepped bearing in the board 1 and the upper end of which projects upwardly into the hopper and carries agitator-blades 15.

16 denotes a horizontally-disposed shaft journaled in the lower bearing 8. On one end of the shaft 16 is mounted a spur-pinion 17, which meshes with the master-gear 10. On the opposite end of the shaft 16 is fixed a large pulley 18.

19 denotes a horizontally-disposed shaft arranged in the fan-casing 2 and carrying fan-blades 20 and 20′. On the outer end of the shaft 19 is mounted a small pulley 21, which is connected to the large pulley 18 by a belt 22.

23 denotes a service-pipe the inner end of which is connected to the discharge funnel or tube 3 of the fan-casing by a short section of flexible tubing 24. The end of the tube 3 is corrugated or threaded to permit the flexible tube to firmly engage the same. The outer end of the service-pipe 23 is adapted to receive a spray-nozzle 24′, consisting of a ring or band adapted to slip on the end of the service-pipe, and to said ring or band are fixed the ends of crossed outwardly-curving strips or plates 25, the curved portions of the same being bent or twisted edgewise, as shown, this construction of nozzle serving to scatter the dust as it is blown through the service-pipe.

In Figs. 6 and 7 are shown the construction and manner of assembling the fan-blades. In Fig. 6 the blade 20 is formed with a centrally-

disposed oblong opening 26, and at one end of said opening and on each side of the same are formed slitted tongues 27, and at the opposite end of said opening are formed two small openings 28, which are adapted to receive the tongues 27.

The blade 20′, as shown in Fig. 6, is cut away or notched, as shown at 29, forming a central strip 30. A centrally-disposed slitted tongue 31 is formed on the blade 20′, and below said tongue is formed a hole or opening 32, which is adapted to receive the tongues 31. In assembling the blades they are first bent, as shown in Fig. 7, and strip 30 of blade 20′ is then passed through the opening 26 in blade 20, and the shaft 19 is then passed through the passage formed by the curved interlocking portion of the blades and securely holds the blades together. The tongues 27 are now bent around the shaft and clenched in the holes 28. The tongue 31 is bent around and clenched in the hole 32. At the points where the tongues 27 and 31 engage the shaft it is slightly flattened, so that the blades will be firmly held thereon to turn with the same.

In Fig. 8 is shown the blank from which the agitator is formed, the same consisting of a flat strip of sheet metal having a centrally-disposed square opening 33. The strip is provided with central longitudinal cuts 34, arranged on either side of the central opening 33 and extending from near the same to near the ends of the strip, where the cuts are turned in opposite directions to the opposite side of the strip, as shown at 35, thereby forming blades 36 37 38 39. In the ends of the blades 36 and 39 are formed holes 40 and 41.

To form the agitator, the blade 36 is bent upwardly and inwardly, and the blade 39 is bent downwardly and inwardly in such position that the holes in the ends of the same will aline with the central opening 33. The end of the blade 37 is bent downwardly, while the end of the blade 38 is bent upwardly, the angle of said bent ends conforming to the slant of the conical bottom of the hopper.

With the blades 36, 37, 38, and 39 in the positions just described they are placed upon the upper end of the shaft 14, the end of said shaft being squared and adapted to pass through the alined holes in the ends of the blades 36 and 39 and central hole 33, the inclined ends of the blades 37 and 38 being adapted to engage the walls in the hopper, as in Fig. 3.

In the bottom plate 43 of the hopper is formed a discharge-opening 44, which is adapted to be closed by a sliding valve or plate 45, adapted to work in guideways 46, formed on the hopper. 47 denotes an operating-lever pivoted at one end to one of said guideways, said lever being adapted to have a slotted connection with a pin 48, formed on the outer end of the valve-plate 45, whereby the lever may be operated to shift said plate and open or close the opening 44 to regulate the discharge of the contents of the hopper.

A crank-handle 49 is adapted to project from the side of the gear-wheel 10, whereby said gear is turned to operate the machine. The device may be carried by the operator in any suitable manner, preferably by supporting the same from the shoulders by a strap 50 or other means.

In practice the prepared material is placed in the hopper and the gear 10 turned, which will drive the fan and agitate the blades. The valve being opened to the required extent, the material is forced into the discharge-tube, where it is caught by the fan-blast and blown out through the service-pipe and nozzle onto the plants or trees or wherever desired.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a sprayer of the character set forth, a hopper, a blower adapted to be fed from the hopper, and a discharge-nozzle applied to the blower and comprising a ring or band having curved crossed strips, the curved portions of which are bent or twisted edgewise to scatter the discharging dust, substantially as described.

2. In a sprayer of the character set forth, the combination of a discharge-tube, a blower communicating therewith, a hopper having a valved outlet to the tube, a shaft within said hopper, and an agitator mounted upon the shaft, said agitator comprising a strip interlocked at its center and ends with the shaft, and having bowed and linear blades, substantially as described.

3. In a sprayer of the character set forth, the combination of a discharge-tube, a blower communicating therewith, a hopper having a valved outlet to the tube, a shaft within said hopper, and an agitator mounted upon the shaft, said agitator comprising a strip having an opening at its center and bifurcated on opposite sides of the central opening to form sets of blades, the said central opening receiving the shaft and one blade of each set being bowed and interlocked with the shaft and the other blades extending radially from the shaft, substantially as described.

4. In a sprayer of the character set forth,

the combination of a discharge-tube, a blower communicating therewith, a hopper having a discharge-passage communicating with the tube, a slide-valve governing said hopper, and a lever having a slot-and-pin connection with said valve for operating the same, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN R. HALDEMAN.

Witnesses:
R. P. HALDEMAN,
F. P. CLEMENTS.