

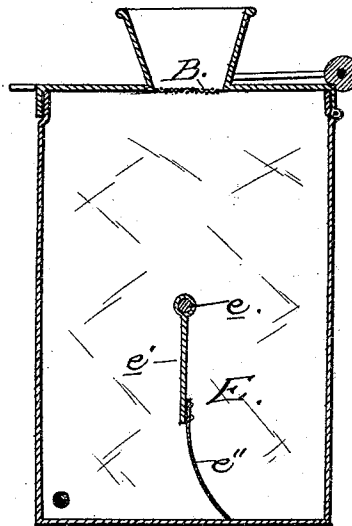
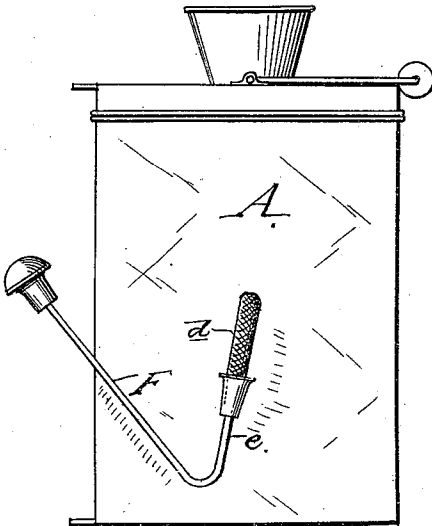
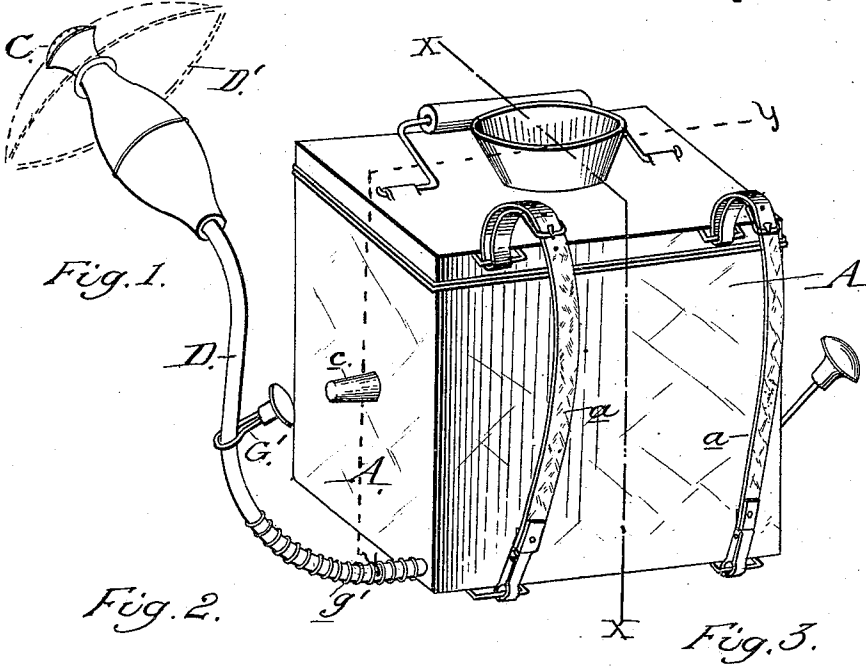
(No Model.)

2 Sheets—Sheet 1.

M. GOLDMAN.
SPRINKLER.

No. 473,310.

Patented Apr. 19, 1892.



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(No Model.)

2 Sheets—Sheet 2.

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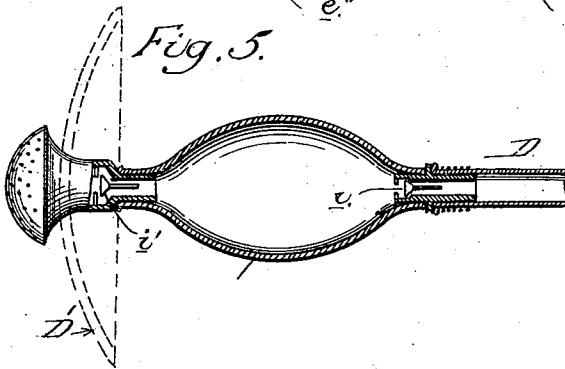
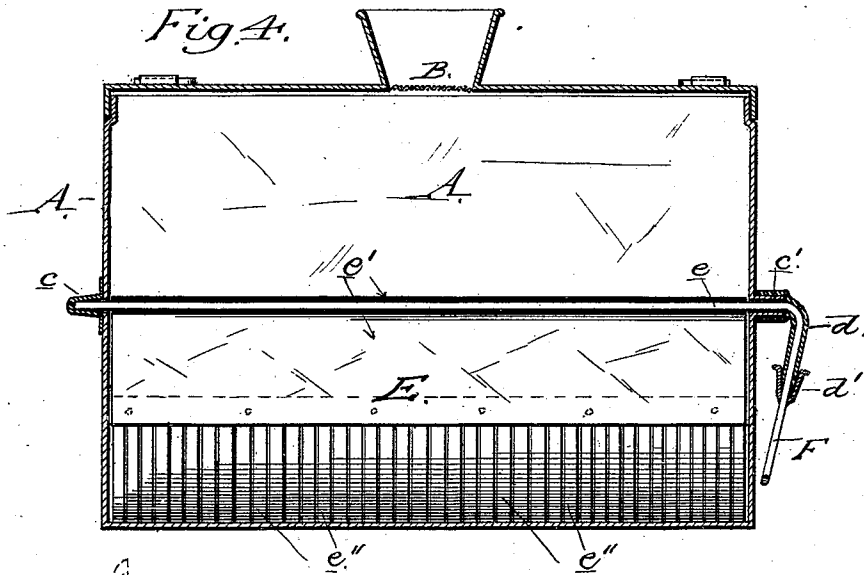


Fig. 6.

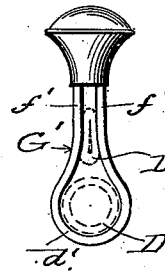
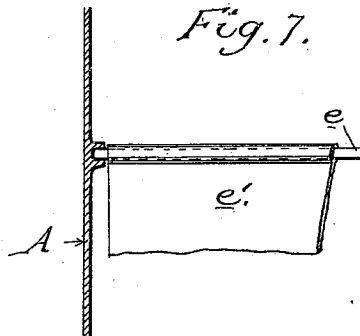


Fig. 7.



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UNITED STATES PATENT OFFICE.

MOSES GOLDMAN, OF PITTSFIELD, MASSACHUSETTS.

SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 473,310, dated April 19, 1892.

Application filed July 9, 1891. Serial No. 398,934. (No model.)

To all whom it may concern:

Be it known that I, MOSES GOLDMAN, a citizen of the United States, residing at Pittsfield, in the county of Berkshire and State of Massachusetts, have invented certain new and useful Improvements in Sprinklers, of which the following is a clear and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of a machine embodying my invention, a portion being broken away to show the agitator in the interior of the reservoir. Fig. 2 is a side view of the reservoir, showing the handle by which the agitator is operated. Fig. 3 is a transverse vertical section of Fig. 1 on the line *xx*. Fig. 4 is a longitudinal vertical section on the line *yy* of Fig. 1. Fig. 5 is a longitudinal section through the bulb and rose and a short portion of the tube, exposing the combination of valves. Fig. 6 shows a detached view of the check-clamp. Fig. 7 shows a modification of the nipple or shaft-bearing *c*.

My invention relates to machines for sprinkling vegetation with a liquid poison adapted to destroy the insects which prey thereon and without injury to the plants; and my object is to provide a simple, effective, and inexpensive device for the purpose.

To enable others skilled in the particular art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

In the drawings, A represents my tank or supply-reservoir, made in the usual way out of any metal and of any desired form and is provided with the straps *a a*, so that it may be slung upon the person of the operator and easily carried. On the top of the reservoir I place the inlet for the fluid, protected by a fine wire-gauze B from impurities, which might interfere with the proper action of the rose C at the free end of the flexible tube D.

To avoid the settling of paris-green and other poisons held in solution, I introduce within the tank a novel agitator E. This agitator consists of a metal rod *e*, passing longitudinally through the center of the tank, as shown in Figs. 3, 4, and 5, on which is rigidly secured a thin plate *e'*, of tin or other suit-

able material, and to the bottom of this plate I securely attach a strip *e''*, of rubber cloth or other flexible material, sufficiently wide to reach the floor of the tank, and when oscillated to effectually prevent any settling of the poisonous ingredients.

In order to provide for an easy oscillation of the agitator E, I bend the rod *e* into crank-handle F, as shown in Fig. 2. It is evident that by raising and lowering the handle F by the operator the agitator will be oscillated and the liquid be kept stirred up, so as to prevent any settling of the poisonous ingredients.

To prevent any possible leakage from the tank through the openings made for the passage of the rod *e* through the walls of the tank, I have adopted the novel method of soldering on the outside of the wall opposite the handle a hollow nipple *c*, which securely covers the hole in the wall and receives the end of the rod *e*, thus completely guarding against the possibility of leakage at that point. An internal bearing can be soldered to the inside of the wall by leaving the inside end of the nipple open for the insertion of the rod end E. (See Fig. 7.)

On the wall next to the handle end of the rod *e* I secure a similar nipple *c'*, but one having both ends open to allow of the free passage of the rod and of its easy movements in its bearings. To guard against any possible leakage at this point, I pass the rod *e* through a bit of close-fitting flexible tubing *d*, and one end of this tubing I pass over the open end of the nipple *c'*; or, if desired, it could be forced inside the end of the nipple, so as to prevent a leakage. The opposite or outer end of the tube *d* can be secured on the rod by means of the cup-shaped ferrule *d'*, as shown in the drawings, or by any other well-known means.

On the side of the tank opposite to the handle I connect the tube D, through which to pass the fluid to the rose C. To avoid the breaking or wearing of this tube at its point of connection, I secure around the tube for some inches a coiled-wire protector *g'*, so that the tubing will always bend in an easy curve and not collapse and shut off the flow of the liquid while being used. To close the tube and shut off the fluid, I have adopted the sim-

ple devices shown at G', which I find to be inexpensive and effective and instantaneous in its actions. This check-clamp G' is formed by simply bending a metal rod so as to form a ring *f* with the two cam-jaws *f'* *f'*, as seen in Fig. 6. When the tube is in use, the tube lies within the ring portion of the clamp, and when it is desired to stop the flow the tube is pressed in between the cam-jaws.

The objection heretofore made to these sprinklers was the fact that the fluid could not be thrown above the level of the fluid in the tank or reservoir. Hence the poison could not be applied to tall bushes or the limbs of trees. To overcome this difficulty, I have constructed the tube D, with its bulb and rose, in a novel manner, as seen in Fig. 6. At the inner end of the bulb next to the tube I provide the ordinary check-valve *i*, which valve may be located at any desired point in the said tube. This valve will admit the flow of the liquid into the bulb, but will prevent its return to the tank when the bulb is pressed. The valve *i* at a point between this bulb and rose opens when the bulb is pressed and allows the liquid to pass out; but when the bulb is released from pressure the valve instantly closes the passage into the bulb and shuts out the air, which would otherwise fill the vacuum in the bulb. The vacuum then must be filled by the liquid, which must continue to pass through the rose regardless of the level of the liquid in the reservoir.

Other means than the bulb may be employed to actuate the valves. For instance a form of bellows may be used without departing from the spirit of my invention.

It is evident from this construction of the bulb and tube with the valves *i* and *i'* that the bulb can be used with advantage with any vessel containing the liquid.

To prevent the wetting of the hand of the operator with the poisonous fluid which may drop from the rose and which might be objectionable, I secure the cup-shaped shield D' below the rose, as shown in Fig. 1, which is made of rubber and any other suitable material.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a sprinkler, the reservoir having a shaft mounted horizontally therein, extending through one end of the reservoir and provided with an operating-handle, in combination with an agitator fixed to said shaft and provided with a flexible blade adapted to sweep the floor of the reservoir, a flexible discharge-tube having a protector coiled upon a portion of the same, and a bulb and spraying rose on the end of the tube, substantially as herein described.

2. In a sprinkler, a reservoir having a shaft mounted horizontally therein, in combination with an agitator fixed to said shaft, a flexible blade on the agitator adapted to sweep across the floor of the reservoir, a handle for operating the shaft, and a flexible discharge-tube, substantially as herein described.

3. In a sprinkler, the reservoir thereof, a shaft mounted therein extending through one end and provided with a handle, an agitator on said shaft, a flexible tube on the extended end of the shaft, and a sliding ferrule for securing the tube, substantially as herein described.

4. The nipple *c'* and flexible tube *d*, in combination with the ferrule *d'* and rod *e*, substantially as and for the purpose described.

5. In a sprinkler, the reservoir having end bearings, a shaft mounted horizontally in said bearings, extending through one end of the reservoir and provided with an operating-handle, a metal plate *e'*, fixed to the shaft, and a rubber blade fitted to the end of the plate so that it may sweep the floor of the reservoir as the shaft is oscillated, substantially as herein described.

6. In a sprinkler, a check for the discharge-tube, consisting of a clamp having an opening for the tube and a contracted portion or slot extending from said opening and adapted to receive and compress the tube, substantially as herein described.

MOSES GOLDMAN.

Witnesses:

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CHAPMAN FOWLER.