

No. 612,035.

Patented Oct. 11, 1898.

P. W. HAMMERLE.
INSECT EXTERMINATOR.

(Application filed Sept. 7, 1897.)

(No Model.)

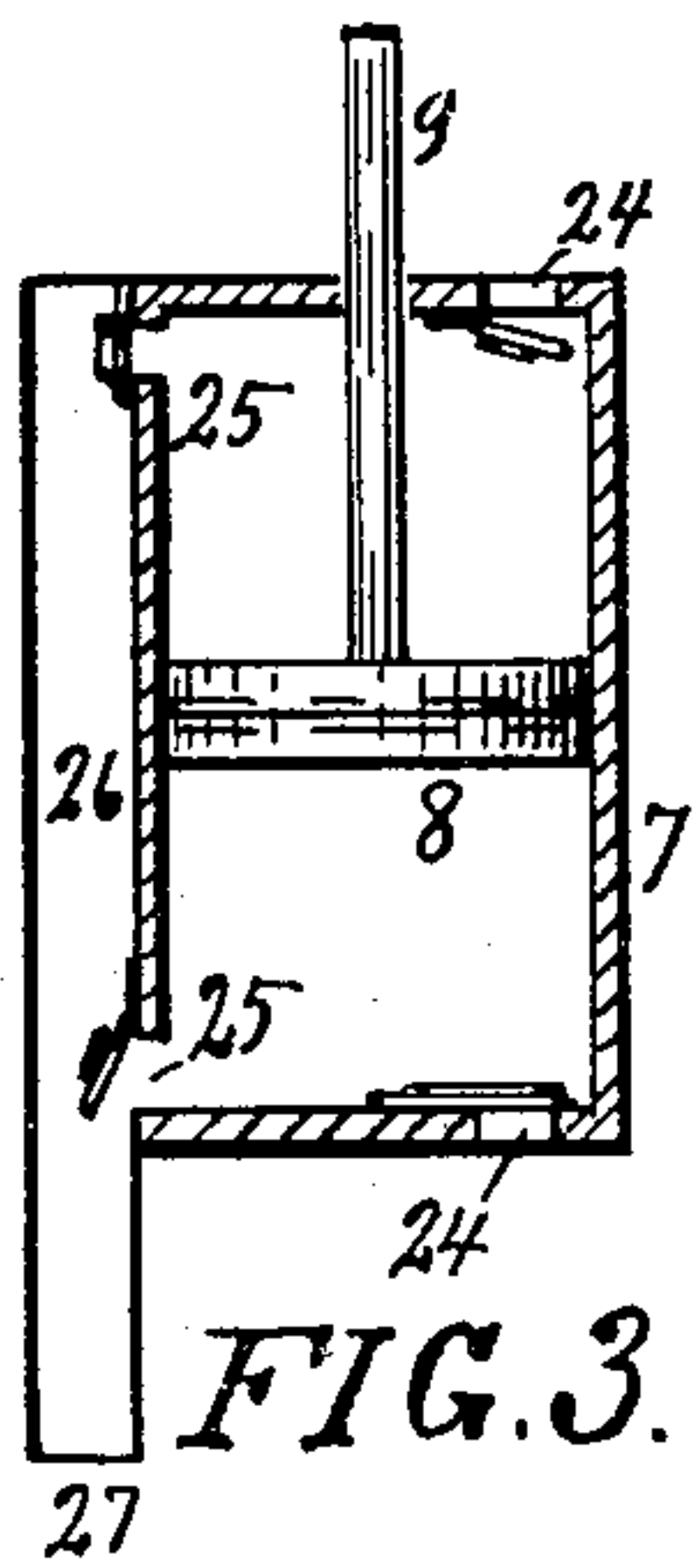
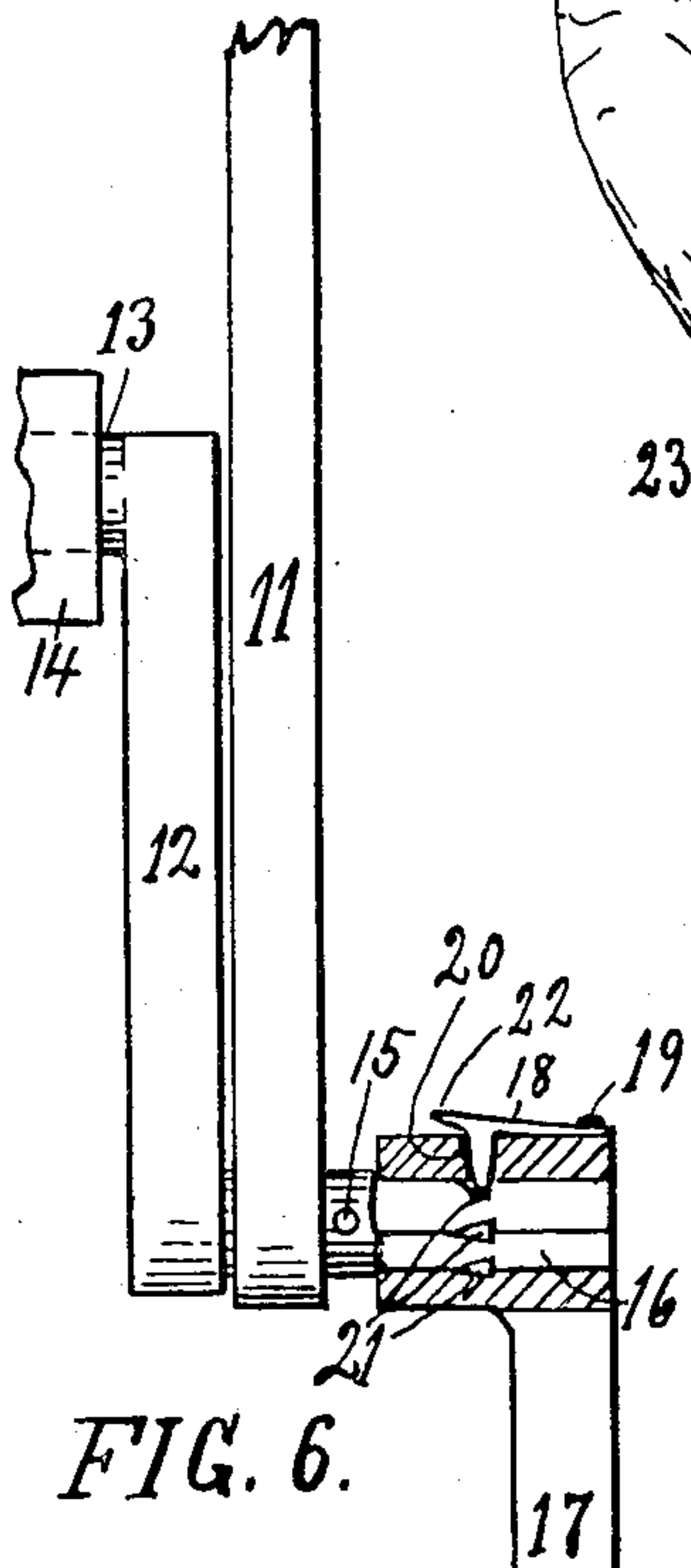
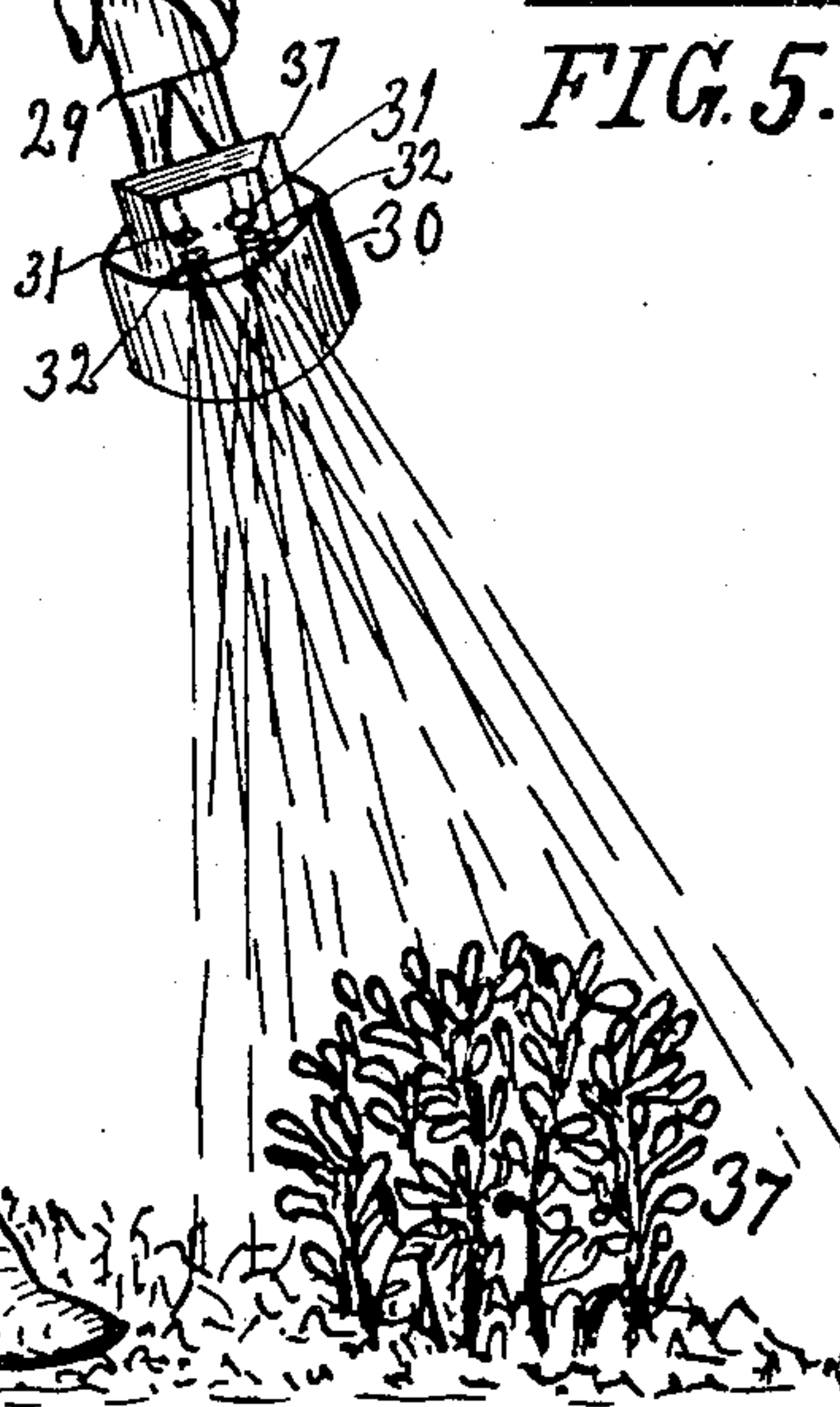
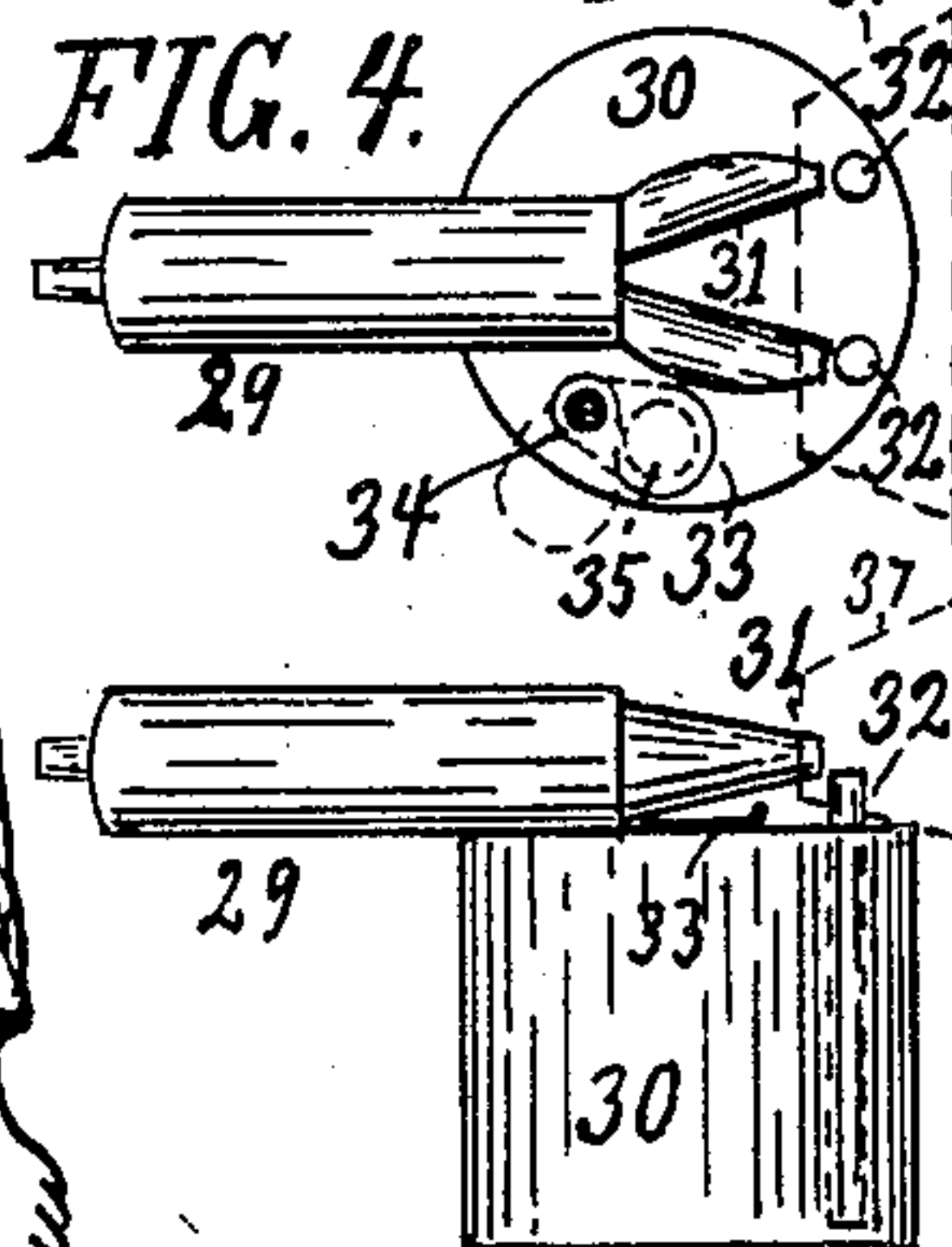
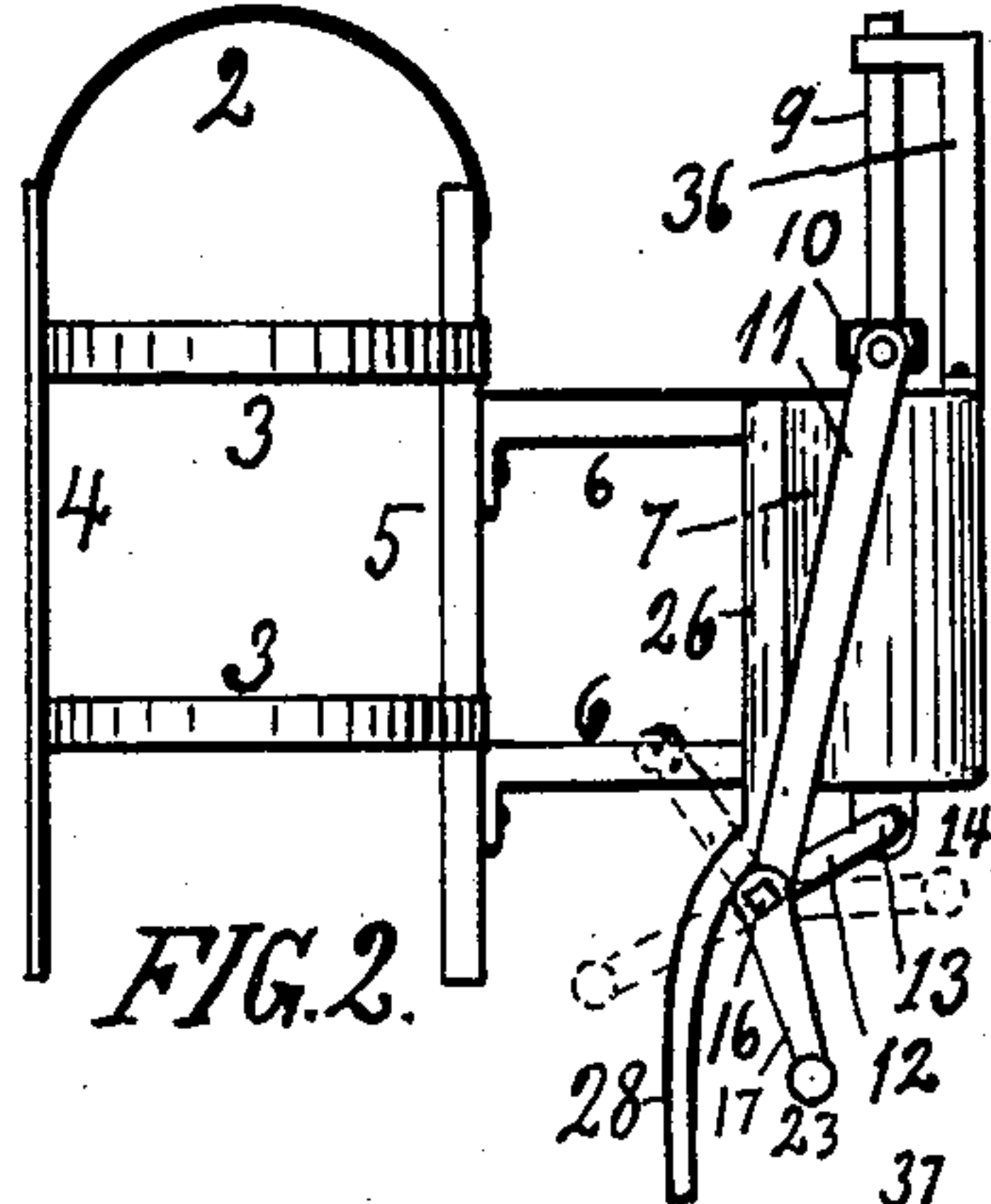
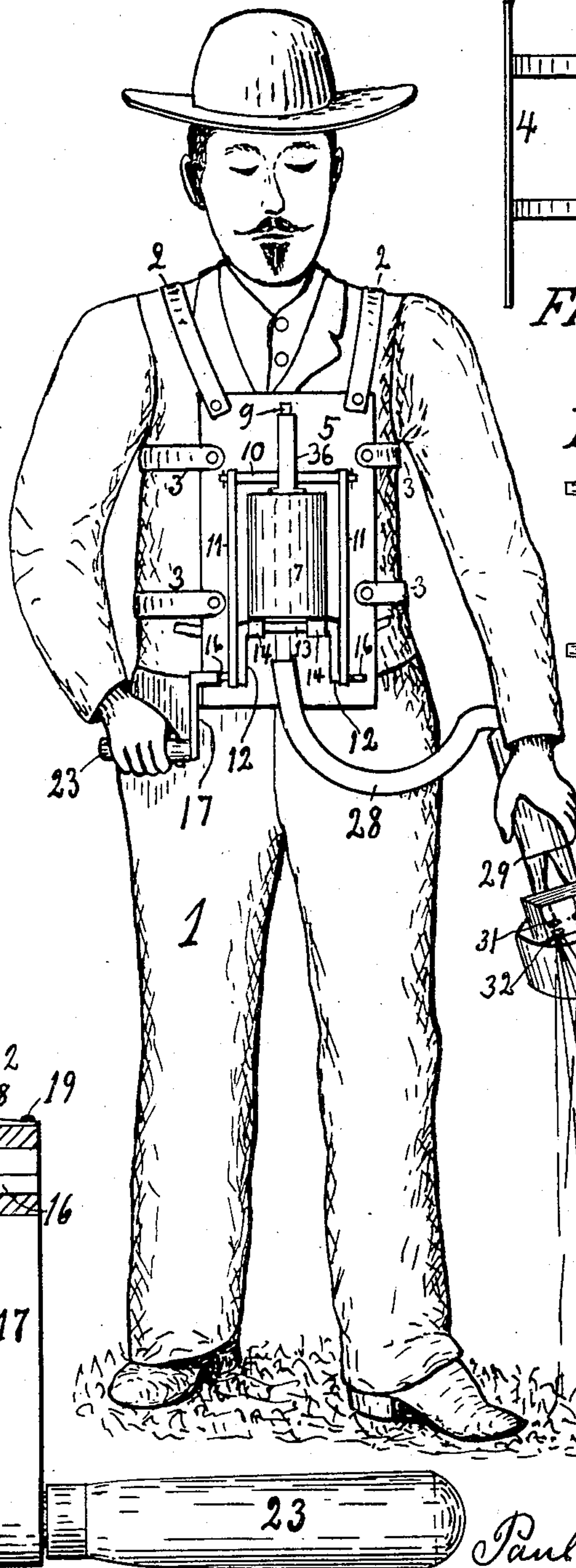


FIG. 1.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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INSECT-EXTERMINATOR.

SPECIFICATION forming part of Letters Patent No. 612,035, dated October 11, 1898.

Application filed September 7, 1897. Serial No. 650,765. (No model.)

To all whom it may concern:

Be it known that I, PAUL W. HAMMERLE, a citizen of the United States, residing at Hastings, in the county of Dakota and State of Minnesota, have invented certain new and useful Improvements in Insect-Exterminators; 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in devices for exterminating insects and which works on the principle of an atomizer, which by means of a current of air throws a fine spray of water containing dissolved paris-green or other poison. Heretofore as far as said principle has been applied for similar purposes the atomizers have been made of so small, unhandy, and unfit construction that they have about amounted to a small syringe, which the farmer, for instance, using it for the extermination of potato-bugs, must squirt several times on a single stand or plant of potatoes, and to make the process still slower the apparatus is inactive half the time, while the operator retracts the plunger.

The objects of my invention are, first, to provide an insect-exterminator on the atomizing principle, but throwing a large and continuous spray; second, to so construct said machine that it may be secured on a person's body and operated by both hands, and, third, to make the operating-crank of such machine extensible and reversible to either side of the machine, so that it may be operated by either hand and by a strong or weak person. These and other objects I attain by the novel construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my complete machine mounted or secured upon the operator and in operation. Fig. 2 is a side view of the apparatus detached from the operator. Fig. 3 is a central vertical section through the air-cylinder of the apparatus. Fig. 4 is a top view, and Fig. 5 a side view, of the atomizing parts of the apparatus. Fig. 6 is an

enlarged detail view of the crank mechanism of the device.

Referring to the various parts in the drawings by reference-numerals, 1 represents the person operating the machine. Upon him are secured, by the shoulder-straps 2 and the side bands 3, the back board or plate 4 and the front board or plate 5, upon which are secured the forwardly-extending arms 6, to the front ends of which is secured a double-acting air-pump, consisting of the air-cylinder 7 and the piston 8 moving therein, and having the piston-rod 9, which is secured in the middle of the cross-head 10, from the ends of which extend the two pitmen 11, which have their lower ends operated by the cranks 12, formed one at each end of the shaft 13, journaled in the bearings 14, provided at the lower end of the cylinder.

As best shown in Fig. 6, the cranks 12, after being extended through the pitmen 11, which are retained thereon by the pins 15 or other suitable means, have their ends 16 made four-cornered, so as to fit in four different positions in the square hole of the hand-crank 17, which is detachably secured on the end 16 by means of the spring-dog 18, secured at 19 to the crank, and, projecting through the aperture 20, engages, one at a time, the notches 21 in the corners of the crank portion 16. Thus the operator may at any time take hold of the toe 22 of the spring-dog 18 and by raising it slightly remove the crank 17 and replace it in either of the positions indicated (three of them in dotted lines) in Fig. 2, thereby varying the leverage or distance from the center of the shaft 13 to the center of the handle 23, and the crank 17 may also be changed from one end to the other of the crank-shaft 13 12 16, and thus be operated by either hand, while the other hand rests or is simply holding and guiding the atomizer.

The cylinder 7, as best shown in Fig. 3, is provided with one air-inlet valve 24 at each end and the two outlet-valves 25, which open into the tube 26, the lower end 27 of which receives one end of the hose 28, of which the opposite end unites with an air-chamber 29, adapted to be held in the operator's hand. This air-chamber is secured to the top of a vessel 30 and at its front end provided with any desired number (in the present instance

two) of air-nozzles 31, which, together with the tubes 32, extending from near said nozzles down into the vessel 30, form the atomizer proper.

5 33 is a lid swinging on the pivot 34 and serving to cover the aperture 35, through which the fluid is admitted into the vessel 30.

36 is a guide secured to the top of the cylinder for steadying the piston-rod 9 against
10 the side strain of the cranks 12. The piston-rod is therefore extended beyond the cross-head and inserted in said guide.

37 is a shield provided near back of and to the sides of the atomizing-point, so as to assist in spreading the spray by the partial vacuum produced in front of the shield. By
15 the use of two or more air-nozzles and tubes 32 the spray becomes so wide that it covers a row of potato-vines, and the operator may
20 thus walk along as fast as he is able and keep turning the crank, about as indicated in Fig. 1, where 37 represents the end or cross-section of a row or hill of potatoes.

In operation the poison to be used is dissolved or mixed in water, which is poured
25 into the vessel 30, and after the apparatus is secured to the operator, as shown, and the crank is turned the air-pump compresses and drives the air out of the nozzles or spouts 31,
30 thereby drawing the diluted poison or fluid up through the tubes 32 and blowing it into a mist or fine spray, which will suffice to exterminate bugs and other insects of most any description on vegetation, animals, poultry, &c.

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

1. An insect-exterator, comprising a double-acting hand-pump operated by a crank
40 and adapted to be secured upon the body of the operator, a hose or flexible tube extending therefrom and an atomizer secured to the end of said hose, said atomizer having two or more atomizing-points, so as to enlarge the
45 spray, substantially as set forth.

2. In an insect-exterator, the combination with the board 5 and means for securing

same upon the breast or front side of a person, a double-acting air-pump secured to said board and having an extensible hand-crank
50 by which it is operated, and an atomizer attached by a hose to said pump so as to receive compressed air from it, substantially as and for the purpose set forth.

3. In an insect-exterator, the combination with the board 5 and means for securing
55 same upon the breast or front side of a person, a double-acting air-pump secured to said board and having an extensible hand-crank by which it is operated, and an atomizer attached by a hose to said pump so as to receive
60 compressed air from it, said hand-crank being changeable to either side of the pump so as to be used by either hand, substantially as and for the purpose set forth. 65

4. In an insect-exterator, the combination with the board 5 and means for securing
70 same upon the breast or front side of a person, a double-acting air-pump secured to said board and having an extensible hand-crank by which it is operated, and an atomizer attached by a hose to said pump so as to receive
75 compressed air from it; and an air-chamber for equalizing the air-pressure and the spray produced by it, substantially as and for the purpose set forth.

5. The combination with a hand-operated air-pump, and an atomizer operatively connected therewith, of means for securing the
80 pump upon the body of the operator, said means consisting mainly of a board or plate adapted to be placed upon the operator's breast or front, and to which the pump is secured; another plate going on the back of the operator; shoulder-straps connecting the two
85 plates in a suspending manner and the side straps 3, connecting the two boards together, substantially as and for the purpose set forth.

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

PAUL W. HAMMERLE.

Witnesses:

PETER SCHNEIDER,
J. R. CLAGETT.