

(No Model.)

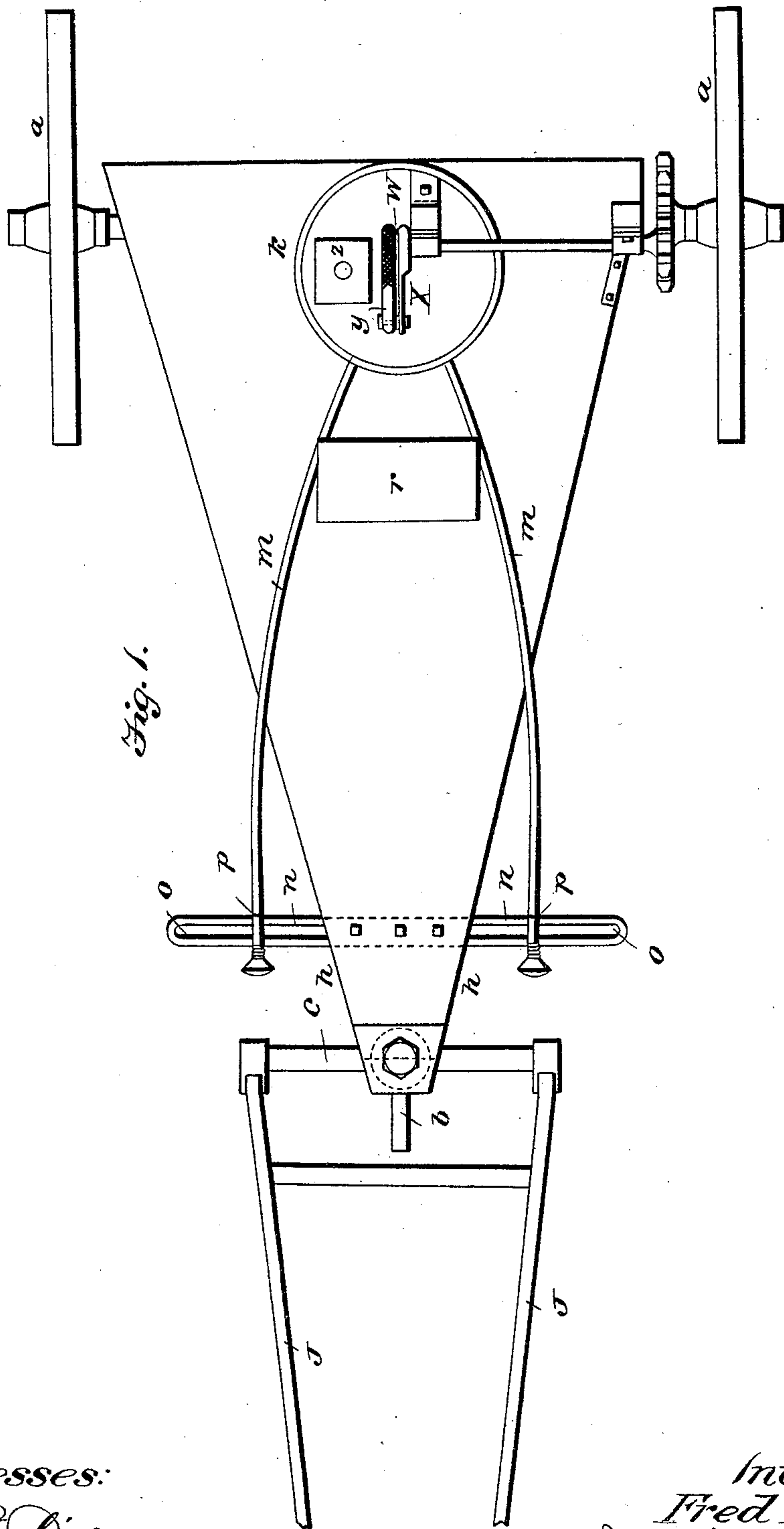
2 Sheets—Sheet 1.

F. L. ALGER.

MACHINE FOR EXTERMINATING POTATO BUGS.

No. 422,277.

Patented Feb. 25, 1890.



Witnesses:
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(No Model.)

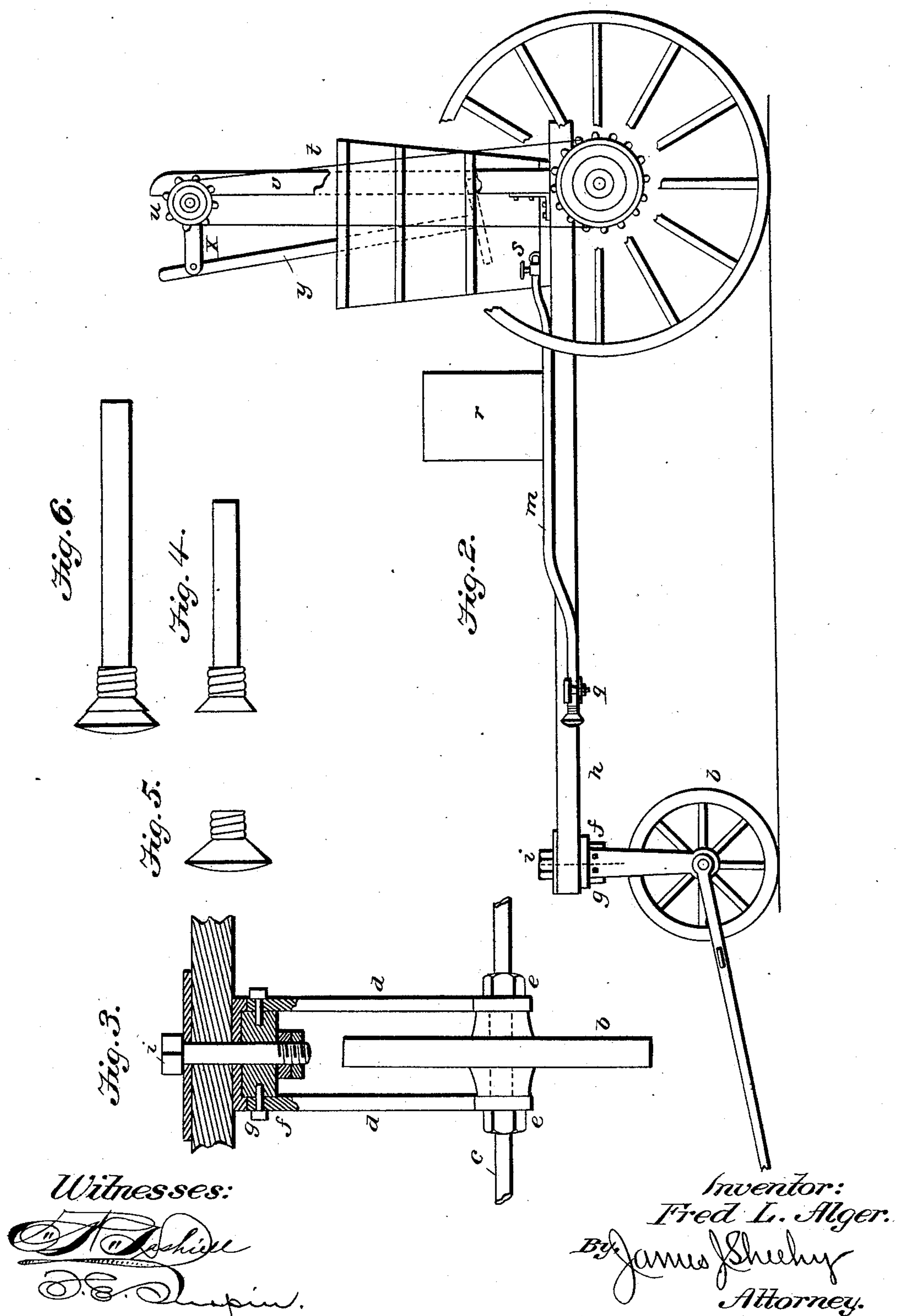
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UNITED STATES PATENT OFFICE.

FRED L. ALGER, OF GREENVILLE, MICHIGAN.

MACHINE FOR EXTERMINATING POTATO-BUGS.

SPECIFICATION forming part of Letters Patent No. 422,277, dated February 25, 1890.

Application filed February 2, 1889. Serial No. 298,527. (No model.)

To all whom it may concern:

Be it known that I, FRED L. ALGER, a citizen of the United States, residing at Greenville, in the county of Montcalm and State of Michigan, have invented a new and useful Potato-Beetle-Exterminating Machine, of which the following is a specification.

The object of my invention is to provide a machine operated by horse-power for the purpose of applying paris-green, arsenic, or other poisonous substance mixed in water to growing potato-vines for the destruction of the potato-beetle, which application of paris-green, arsenic, or other poisonous substance is now generally applied by hand-sprinklers and is very expensive and laborious. I attain this object by the mechanism illustrated in the accompanying drawings.

Figure 1 represents a top view of the machine. Fig. 2 represents a side view of the machine. Fig. 3 represents a front sectional view of the front wheel of the machine and the method of connecting the same with the body of the machine. Fig. 4 shows a tin tube terminating in a zinc screw-cap. Fig. 5 represents a spraying-head, terminating at the back end of a zinc tube-screw, which screw fits the zinc screw-cap represented in Fig. 4. Fig. 6 represents Figs. 4 and 5 united. In Fig. 1 *a a* represent the hind wheels of the machine, which revolve on an ordinary wood and iron axle.

b in Figs. 1, 2, and 3 represents the front wheel, which revolves on the iron axle *c*. (Shown in Figs. 1 and 3.) The front wheel *b* is held in position on axle *c* by the perpendicular iron bars *d d* and nuts *e e*, as shown in Fig. 3. The upper ends of the bars *d d* are firmly bolted to the circular iron plate *f*, Figs. 2 and 3, the upper face of which faces a corresponding face in the lower side of the iron plate *g*, Figs. 2 and 3, which plate has edges projecting down over the upper edges of plate *f*. (See Fig. 3.) The plate *g* is firmly bolted to the wooden frame *h h*, Figs. 1 and 2, side view only in Fig. 2.

Iron plates *f* and *g* have a circular hole in the center, as has also the wooden frame *h h*, Fig. 1. (See sectional view, Fig. 3.) Through these holes is dropped a heavy draw-bolt *i*, Figs. 2 and 3, a nut and lock-nut being placed

on the lower extremity of bolt *i*. This bolt *i* holds the upper face of plate *f* against the corresponding lower face of plate *g*. This combination forms a swivel-joint at the union of iron plates *f* and *g*.

j j, Fig. 1, represent a pair of thills attached to the extremities of the axle *c*, Fig. 1, for the purpose of attaching a horse to the machine.

By the construction of the swivel-joint at the union of the plates *f* and *g* the machine can be turned around in a very small space and obviates the driving over or trampling upon the potato-vines.

The wooden frame *h h* consists of two timbers connecting the axle of the hind wheels *a a* with the draw-bolt *i* and the swivel-joint at the union of iron plates *f* and *g*.

The body of the machine is nearly triangular in form and consists of the timbers *h h*, Fig. 1, covered on top with boards. Near the back end of this body and nearly over the hind axle is situated a circular tank *k*, Figs. 1 and 2, said tank being larger at top than at bottom, the object of this being that the pressure of the water in the tank will continue longer than when the bottom is larger. Near the bottom of tank *k* and nearly in front, about forty-five degrees apart, are situated two stop-cocks, one of which is shown in Fig. 2, and is marked *S*. To the outer projection of each of these stop-cocks is attached a rubber hose, as shown by *m* in Fig. 2 and *m m* in Fig. 1.

In the other end of each of the hose *m m* is placed the tin tube shown in Fig. 4, into the zinc screw-cap of which is screwed a spraying-head, such as shown by Fig. 5. Fig. 6 shows Figs. 4 and 5 united.

Under the body of the machine and toward the front end is bolted a board *n n*, Fig. 1, and on each side of the frame *h h* and in the center of the board *n n* is cut a narrow slot, indicated by *o o*. Across the board *n n*, on each side of the body of the machine, is placed the rubber hose *m m* at the place of union of said hose with Fig. 6, and in Fig. 1 indicated by *p p*. The spraying-heads and rubber tubes or hose are held in position on the board *n n*, Fig. 1, by oblong semicircular caps which terminate in the center and on the lower side in

a bolt and nut, as indicated by *q* in Fig. 2. The slots *o o* in the board *n n* permit the spraying-heads to be placed at any distance apart desired, ranging from two to five feet. Spraying-heads the faces of which vary in convexity are provided for the purpose of spraying a narrow or wide space, as desired. The plane-faced head spraying a narrow space, a more convex one should be substituted when it is desired to spray a wider space. All of the spraying-heads terminate at the back end in a uniform zinc screw-tube, as shown in Fig. 5, fitting the screw-cap, Fig. 4.

r in Figs. 1 and 2 is a plain bench-seat for driver. On the hub of the left hind wheel of the machine is secured an iron wheel *s*, as shown in Fig. 2, with projecting cogs suitable for running a chain belt *t*, Fig. 2. The chain belt *t* passes over another iron wheel with projecting cogs, as shown in Fig. 2, letter *u*. The wheel *u* is attached to the left end of a circular shaft, which revolves in suitable boxings secured to standard *v*, Fig. 2, and standard *w*. (Shown in Fig. 1.) The right end of the shaft terminates in a crank *x* in Figs. 1 and 2, which is connected by a pin to a dash *y*, Figs. 1 and 2, which moves up and down with a rotary motion through a slot in top of tank *k*, thus keeping the paris-green, arsenic, or other poisonous substance thoroughly mixed with the water as the same is forced by the pressure in the tank out through the rubber hose *m m* and the spraying-heads thereto attached.

z in Fig. 1 represents a lid to be removed when filling tank.

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

1. The combination, with the main frame having its forward end tapering, of the tank arranged thereon, the laterally-extending slotted straight bars secured to the tapering portion of the frame, the flexible hose leading from the tank, and stop-cocks at the inner

end of the hose, the spraying-nozzles attached to the outer ends of the hose, and the couplings *P* for adjustably connecting the said hose in the slotted bars, whereby the same may be moved laterally, substantially as specified.

2. The combination, with the main frame of approximately triangular form, of the circular plate *g*, secured to the forward underside thereof, the circular plate *f*, arranged on the under side of the plate *g* and within the marginal flange of the latter, the bolt securing the two plates to the frame, the front wheel *b*, carrying an axle *c*, and the arms *d*, connecting the hub of said wheel with the circular plate *f* by the bolts, substantially as specified.

3. The improved apparatus described, consisting of the triangular-shaped frame, the rear axle and wheels thereon, the sprocket-gear on the axle, the tank arranged on the main frame, the standard, the shaft journaled in said standard and carrying at one end a sprocket-gear and at its opposite end an arm, a chain or belt connecting said gears, and a dasher arranged in the tank and having its upper end connected with said arm, the slotted bar *n*, extending laterally from the forward tapering part of the main frame, the flexible hose adjustably secured in the slotted bar by clamps *P*, the spray-nozzles secured to the outer ends of the hose and stop-cocks secured to the inner ends thereof, the circularly-flanged plate *g* on the forward under side of the frame, the circular plate *f*, arranged within the flange of the plate *g*, the bolt *i*, securing the plates to the frame, the vertical arms *d*, secured at their upper ends by bolts to the plate *f* and their lower ends carrying an axle, and a wheel *b* on the axle supported by the said arms, all adapted to operate substantially as specified.

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Witnesses:

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