

No. 668,007.

Patented Feb. 12, 1901.

F. L. CAPPS.
FRUIT TREE SPRAYER.

(Application filed Oct. 30, 1900.)

(No Model.)

Fig. 1.

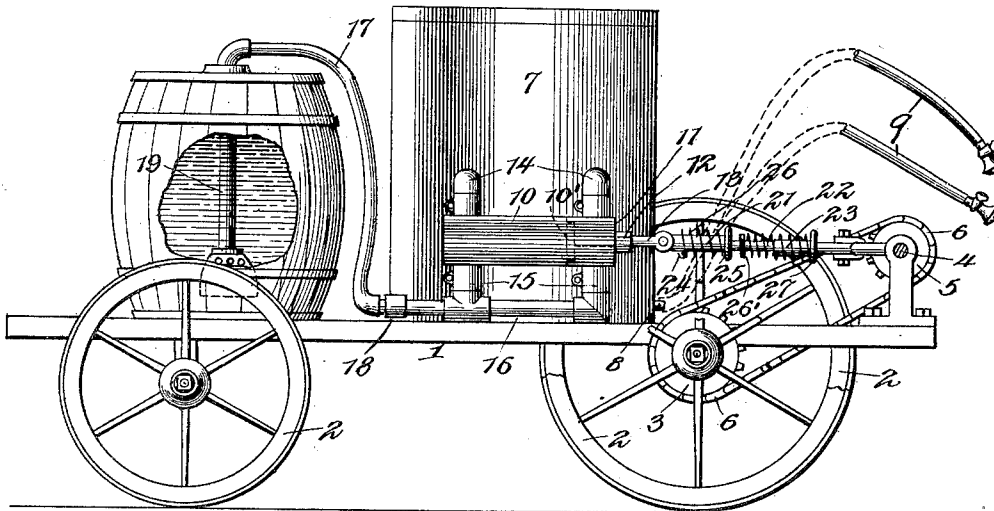
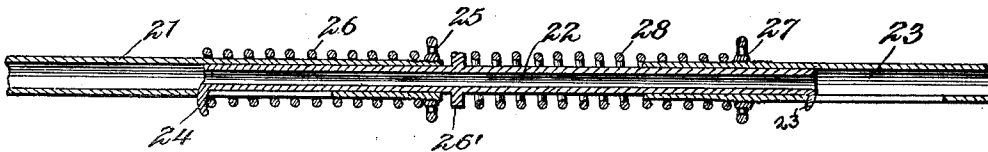


Fig. 2.



Witnesses
Edgar M. Lyons
C. E. Webb.

Inventor
Ferdinand L. Capps
by Frank S. Apperman
Attorney

UNITED STATES PATENT OFFICE.

FERDINAND L. CAPPS, OF ATLANTA, ILLINOIS.

FRUIT-TREE SPRAYER.

SPECIFICATION forming part of Letters Patent No. 668,007, dated February 12, 1901.

Application filed October 30, 1900. Serial No. 34,927. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND L. CAPPS, a citizen of the United States of America, residing at Atlanta, in the county of Logan and State of Illinois, have invented certain new and useful Improvements in Fruit-Tree Sprayers or Wagon-Power Tree-Sprayers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to spraying apparatus, and particularly to that class designed for spraying fruit-trees and the like with solutions for destroying insects.

One object of the invention is to provide means for storing pressure while the vehicle carrying the solution is in motion, so that the said solution may be forced through the spraying-hose when the vehicle is at rest. This is especially desirable where the trees differ in size or an unusual amount of the solution is required at a single point—as, for instance, when a tree or plant is unusually infested with insects—for it enables the operator to stop under such tree and direct the solution to such points as will prove most effective.

A further object of the invention is to produce a device which will act in conjunction with receptacles, such as barrels, containing the solution in such manner that the receptacles may be emptied in succession.

Furthermore, an object of the invention is to produce novel means of regulating the stroke of a pump's piston that the pressure in a tank, to be hereinafter known as the "pressure-tank," may be limited to any maximum pressure desired.

Finally, an object of the invention is to produce a spraying apparatus which will possess advantages in points of simplicity, durability, and efficiency, proving at the same time comparatively inexpensive to produce and sustain.

With the above and other objects in view the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and specifically claimed.

In describing the invention in detail reference will be had to the accompanying drawings, forming part of this specification, where-

in like characters denote corresponding parts in the several views, and in which—

Figure 1 is a view in elevation of a vehicle with apparatus embodying the invention applied. Fig. 2 is a longitudinal sectional view of a portion of a pitman.

In the drawings, 1 denotes a vehicle, 2 the wheels thereof, and 3 sprocket-wheels taking motion from the wheels 2. A crank-shaft 4 is journaled in suitable bearings at the rear of the vehicle and carries the sprocket-wheels 5, and the sprocket-chains 6 connect the sprocket-wheels 3 and 5 for driving the crank-shaft. Stationed on the vehicle is a tank 7, having suitable outlets 8 at bottom of tank, to which the spraying-hose 9 are attached. These outlets 8 are the only ones provided for the tank, for it is air-tight for the purpose of causing the air therein to gain increased pressure as liquid is forced therein through the medium of the pump 10. The pump has a cylinder in which a piston 10' reciprocates, and the cylinder-head 11 has a packing-box 12 for the reception of the piston-rod 13. The branch pipes 14 of the cylinder lead to the tank 7 and are suitably valved to permit the fluid to flow only from the cylinder to the tank. The branch pipes 15 are connected to the cylinder and are so valved as to permit liquid to flow only in one direction—viz., into the cylinder. The branch pipes 15 communicate with a pipe 16, having a detachable flexible extension 17. The extension terminates in a metallic tube 19, having a flared end provided with a strainer. The piston-rod is driven from the crank-shaft through the medium of a pitman, which is made adjustable for automatically regulating the stroke of the piston and the pressure of the contents of the tank. To this end the pitman is formed in three sections 21, 22, and 23, the former being a tube connected to the piston-rod by a universal joint and having a longitudinal slot. The second section consists of a rod having an angular end 24, protruding through the slot in section 21. An adjusting-nut 25 is threaded on the outer end of the section 21, and a spring 26, encircling the said section, abuts the angular end 24 of the section 22 at one end and the adjusting-nut 25 at the opposite end, and it will be

readily seen that the tension of the spring may be varied within certain bounds. The section 23 is slidable on the section 22, and the section 22 is provided with a shoulder 26'.

- 5 The section 23 is provided with an adjusting-nut 27, and the spring 28, which encircles the sections 22 and 23, is confined between the shoulder and the adjusting-nut. The sections 22 and 23 are held together in any suitable manner, here shown by a lug 23', and when there is a maximum pressure in the tank the lug travels in a slot formed in the tube 23. The section 23 is connected to and takes motion from the crank-shaft, and when 10 the pressure in the tank reaches a predetermined point the springs will yield and the sections of the pitman will telescope and the stroke of the piston will be diminished or nullified, as the case may be, and as the pressure is reduced in the tank the length of stroke will increase.

The construction, operation, and advantages will, it is thought, be understood from the foregoing description, it being noted that 25 changes in the proportions and other details of construction may be resorted to without departing from the scope of the claims.

Having fully described the invention, what I claim as new, and desire to secure by Letters 30 Patent, is—

1. In a spraying apparatus, a tank adapted to contain liquid under pressure and having a spraying-nozzle in communication with its interior, a pump for forcing liquid into the 35 tank, a pitman comprising sections telescopically connected, springs for holding the sections distended, means for regulating the tension of the springs and means connected with the vehicle-wheels for reciprocating the pitman.

- 40 2. In a spraying apparatus, an air-tight

tank; means for drawing liquid therefrom, a pump for forcing liquid into the tank, a spring-pressed piston and means for adjusting the tension of the spring, for regulating 45 the pressure in the tank.

3. In a spraying apparatus, a tank adapted to hold liquid under pressure, a pump for forcing the liquid into the tank, a pitman comprising three telescopic connected sections, springs for holding the sections distended, means for adjusting the tension of the springs, a crank-shaft and piston-rod connected by the piston, and means for driving the crank-shaft.

4. In a spraying apparatus, a tank, a pump for forcing liquid into the tank, a flexible connection in communication with the receptacle containing the liquid for conveying it to the pump, a pitman comprising a central 60 and two end sections, said end sections being slidable on the central section, means for holding the section distended, means for regulating the resistance of the section-retaining means and suitable gearing for reciprocating 65 the pitman.

5. In a spraying apparatus, a tank, a pump for forcing liquid into the tank, a pitman connected to the piston-rod of the pump, said pitman comprising a central section and two 70 tubular sections slidable thereon, an adjusting-nut on each of the tubular sections, springs encircling the sections and abutting the nuts at one end and fixed projections on the central section at the opposite ends and 75 means for reciprocating the piston.

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

FERDINAND L. CAPPS.

Witnesses:

C. H. TURNER,
JAMES KINDRED.