C. S. PERRY.

SPRAYER.

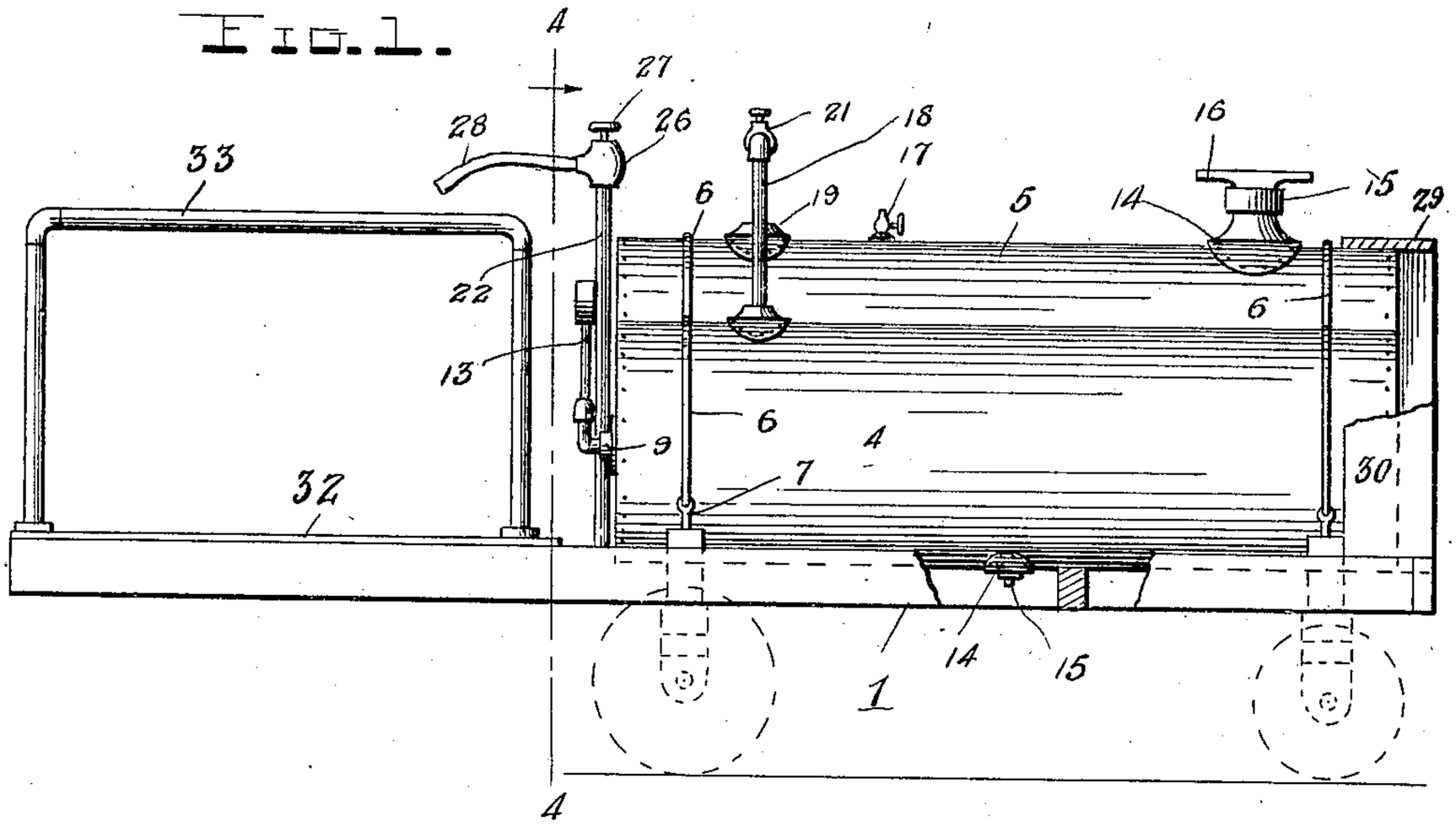
APPLICATION FILED MAR. 18, 1908.

912,261.

Patented Feb. 9, 1909.

2 SHEETS—SHEET 1.

FIG. 1.



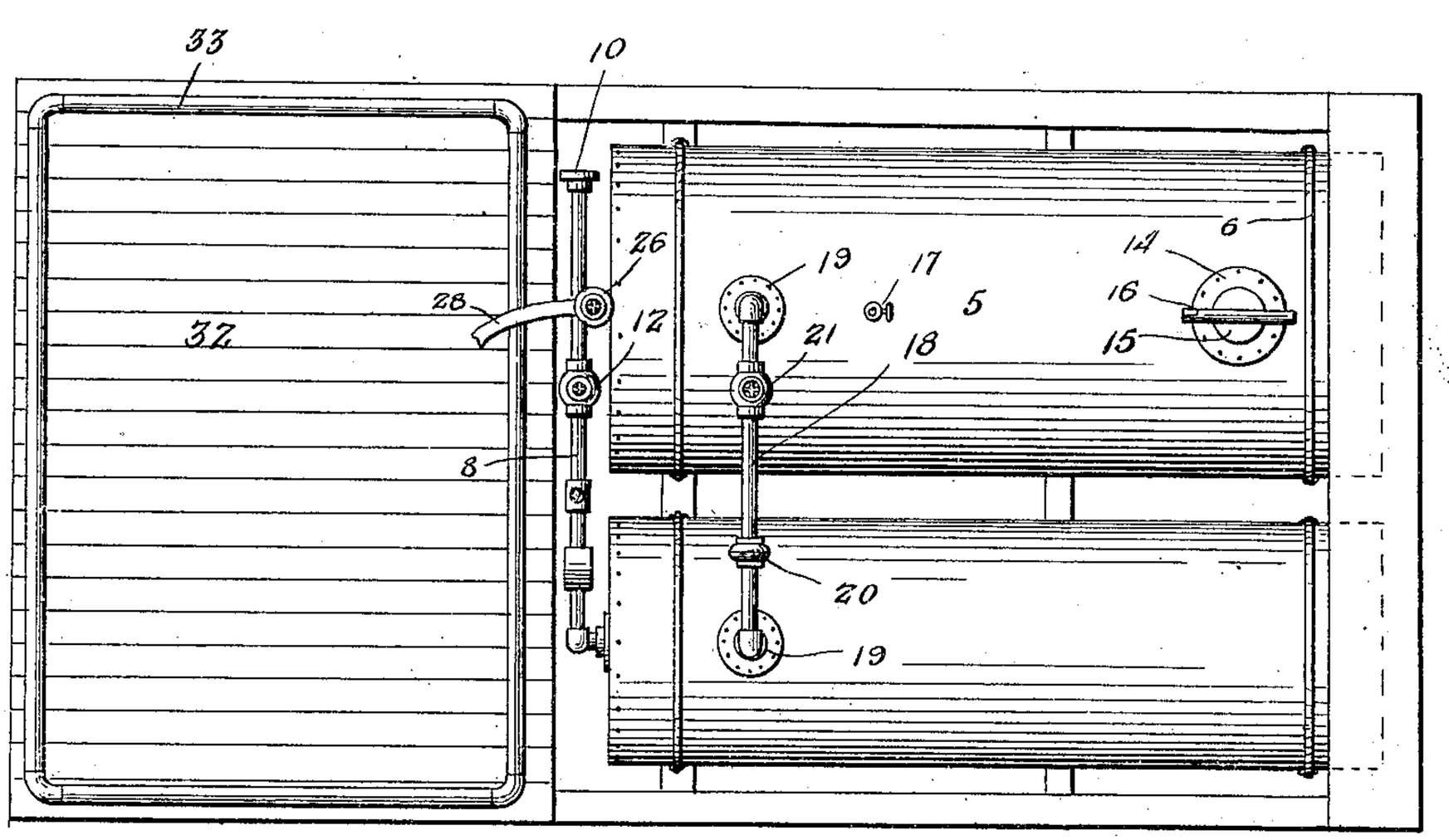


FIG. 2.

Witnesses

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FIG. 3.

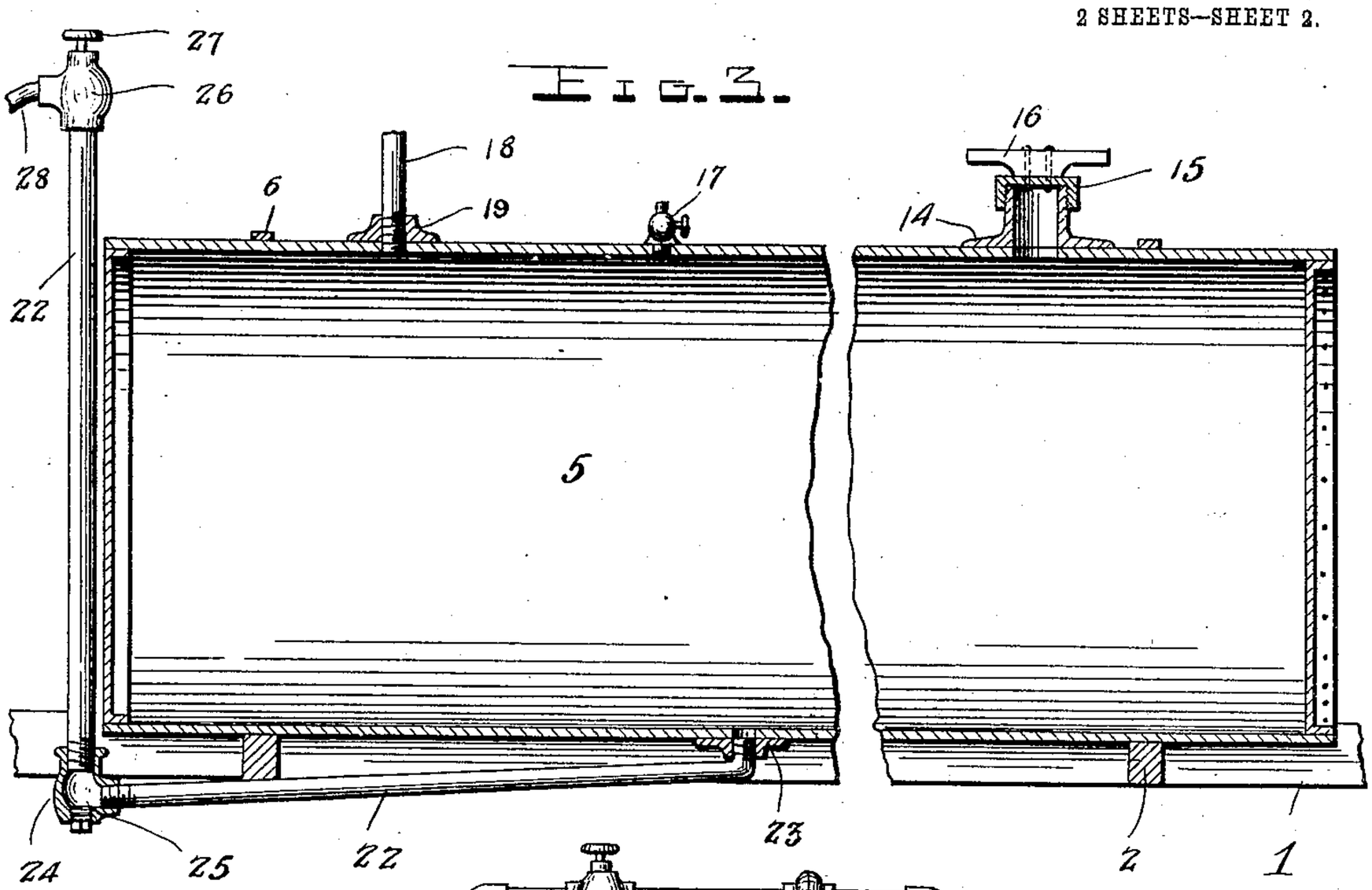
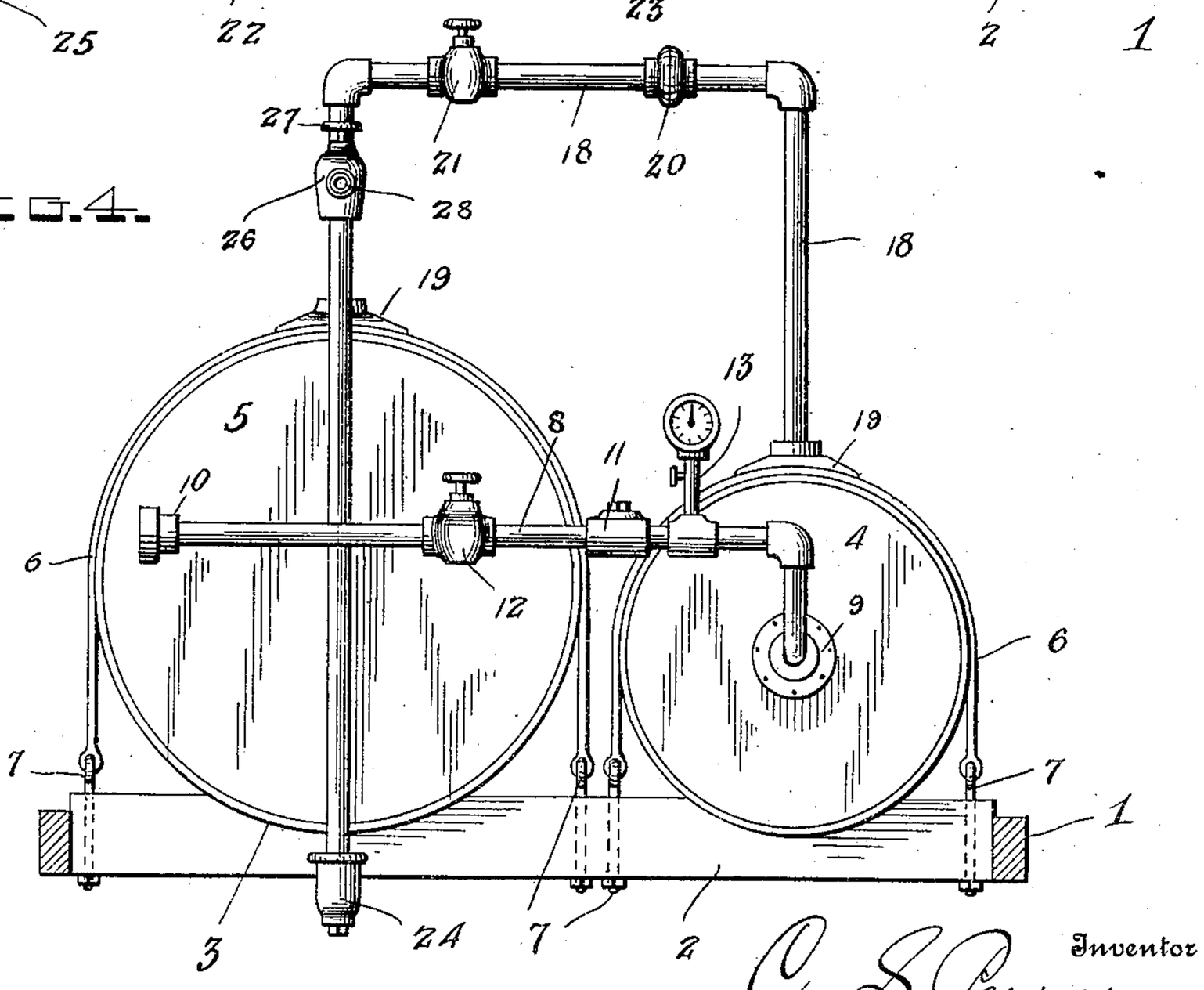


FIG. 4.



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UNITED STATES PATENT OFFICE.

CHARLES S. PERRY, OF CHATTANOOGA, TENNESSEE, ASSIGNOR OF ONE-FOURTH TO JACOB PUTERBAUGH AND ONE-HALF TO ROBERT S. WALKER, OF CHATTANOOGA, TENNESSEE.

SPRAYER.

No. 912,261. Specification of Letters Patent. Patented Feb. 9, 1909.

Application filed March 18, 1908. Serial No. 421,870.

To all whom it may concern:

Be it known that I, CHARLES S. PERRY, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented certain new and useful Improvements in Sprayers, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in spraying machines or devices of that class especially adapted for use in orchards.

The object of the invention is to improve and simplify the construction and operation of sprayers of this character and thereby render the same stronger, more durable and less expensive in construction and more convenient and efficient in operation.

With the above and other objects in view, the invention consists of the novel features of construction and the combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, with parts in section, of my improved spraying machine; Fig. 2 is a top plan view; Fig. 3 is a vertical longitudinal section through the liquid tank; and Fig. 4 is a vertical transverse section taken on the plane indicated by the line 4—4 in Fig. 1.

In the drawings 1 denotes a supporting frame which may be made portable so that it can be moved about between the trees in an orchard, either by mounting it upon the running gear of an ordinary wagon or vehicle or by providing it with sled runners. Said frame is preferably of rectangular shape and has in its front portion two beams 2 provided in their upper edges with recesses or seats 3 for the reception of two horizontally disposed cylindrical tanks 4, 5. The tanks are held in place upon the beams 2 by bands or straps 6 passed over their tops adjacent to their ends and engaged with eye bolts 7 arranged in the beams 2, as clearly illustrated in the drawings.

The tank 4 is adapted to contain compressed air and is so constructed that it will stand considerable internal pressure. It is adapted to be charged with air by a pump or any other suitable air compressor arranged at a central station and to permit this it is provided with an air inlet pipe 8 which has one of its ends extending into the rear end of the tank 4 through a reinforcing plate or casting 9 and its other end provided with a hose connection 10 by means of which the air hose or pipe of the air pump or compressor may be readily connected to or disconnected from the air inlet pipe 8. In the latter are provided a check valve 11 and a globe or disk valve 12, the latter being arranged between the check valve and the hose connection 10, as more clearly shown in Fig. 4. The cut off valve 12 is provided to effectively close the pipe 8 so that air cannot escape therefrom should the checking valve 11 leak. I also provide in the pipe 8 between the check valve and the tank a suitable pressure indicator or gage 13. In the bottom of the air tank 4 is a drain opening surrounded by a reinforcing plate or casting 14 into which is screwed a threaded plug 15. This drain opening permits any water of condensation to be removed from the tank.

The tank 5 is adapted to contain a liquid preparation or mixture which, when sprayed upon trees or plants, will kill insects, their eggs, and other parasites that live upon and are injurious to plant life. This liquid is introduced into the tank through a filling opening surrounded by a reinforcing plate or casting 14 provided with an upstanding threaded flange to receive a screw cap 15 provided with a cross bar or handle 16. In order to permit the air in the tank 5 to escape from the same as the liquid is introduced through said filling opening I provide a small relief cock or valve 17. The compressed air passes from the tank 4 to the tank 5 through the connecting pipe 18 which is in the form of a vertically disposed arch and has its two depending ends projecting into the tops of said tanks through reinforcing plates or castings 19. The upper horizontal portion of the arch shaped pipe 18 is constructed of two sections united by a union or coupling 20 so that the tanks may be easily disconnected to permit either one to be removed for repairs or for other reasons; and in one of said sections is arranged a disk or globe valve 21 by means of which the supply of air passing from the tank 4 to the tank 5 may be readily controlled. The liquid in the tank 5 is discharged from the same through a discharge pipe 22 having a horizontal branch arranged beneath the rear portion of the tank and extending longitudinally thereof with its inner

end opening into the bottom of said tank through a reinforcing plate or casting 23. The projecting rear end of the horizontal branch of the pipe 2 is connected by an elbow 24 to a vertical branch and in said elbow is arranged a drain plug 25 which permits the liquid tank and the pipe 22 to be drained when necessary or desired. Upon the upper end of the vertical branch of the pipe 22 is a connection 26 containing a controlling valve 27 adapted to control the discharge of the liquid through the pipe 22 and a hose or the like 28 connected to the angle connection 26. The hose 28 may be connected to any suitable spraying nozzles or pipes, and if desired, more than one of said hose may be provided.

29 denotes a driver's seat arranged above the front ends of the tanks 4, 5 and supported upon uprights 30 which rise from the side bars of the frame 1.

32 denotes a platform arranged upon the extended rear end of the frame 1 and surrounded by a hand rail 33. This platform is for one or more operators who manipulate the spraying nozzles or pipes connected to the hose 28.

From the foregoing it will be seen that by arranging the tanks horizontally and mounting the frame so that it will be disposed close to the ground, the machine will be very effective for use in orchards having low headed trees and orchards located upon hillsides or on rough hilly ground. The pipe connection between the air and liquid tanks, being in the form of an arch provides a rigid connection and disposes the controlling valve within convenient reach of the operator. Furthermore, there is no liability of said connecting pipe being obstructed or clogged. The provision of the air relief cock enables the liquid tank to be easily filled since the air displaced by the liquid can readily escape and will cause no back flow in the filling vent. Owing to the arrangement of the discharge pipe at a downward inclination beneath the tank and to the provision of the drain plug or valve in said pipe, it will be seen that the liquid tank can be easily cleaned by running clean water through it, and this construction also enables the tank to be emptied when there is danger of its contents freezing. The disposition of the air inlet pipe at the rear of the tank puts it within convenient reach of the operator upon the platform 32 and the provision of the check valve in said pipe takes all back pressure from the pump or air pressure and allows the tank to be quickly and easily filled.

It will be noted that the machine is exceedingly simple in construction so that it may be produced at a comparatively small cost and will be exceedingly strong and durable.

Having thus described my invention what I claim is:

1. In a spraying machine, the combination of a portable frame, horizontally disposed air and liquid tanks thereon, an arched connecting pipe above said tanks, a controlling valve in said pipe, a filling connection for the liquid tank, a removable cap for said filling connection, an air relief cock for the filling tank, a discharge pipe having a vertical branch and a downwardly inclined horizontal branch, the latter having its upper end opening into the bottom of the liquid tank, an elbow connecting the two branches of the discharge pipe, a drain plug in the bottom of the air tank, an air inlet pipe opening into the air tank and having a coupling connection at its free end, a check valve in said air inlet pipe, a cut off valve in the air inlet pipe between the check valve and the coupling connection, and a pressure indicator in the air inlet pipe between the check valve and the air tank.

2. In a spraying machine, the combination of a horizontally disposed, rectangular, portable frame, a platform upon the extended rear portion of said frame, a guard rail surrounding said platform, horizontally disposed air and liquid tanks arranged upon the front portion of the frame, a filling connection for the liquid tank, a removable cap for said filling connection, an air relief cock for the liquid tank, an arched connecting pipe above said tanks adjacent to their rear ends, a controlling valve in said pipe within reach of an operator upon said platform, a discharge pipe having a vertical branch extending between the rear end of one of the tanks and the platform and a downwardly inclined horizontal branch, the latter having its upper end opening into the bottom of the liquid tank, a controlling valve in the vertical branch of the discharge pipe within reach of the operator upon said platform, an air inlet pipe extending across the rear ends of the tanks within reach of the operator upon said platform and having a coupling connection at its free end, the other end of said pipe being in communication with the air tank, a controlling valve in said air inlet pipe, a check valve in said air inlet pipe, and a pressure gage connected to said air inlet pipe between the check valve and the air tank.

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

CHARLES S. PERRY.

Witnesses:
M. L. CLARK,
J. M. CARROLL.