No. 664,238. Patented Dec. 18, 1900.

W. L. DEMING.

AGITATOR FOR SPRAYING APPARATUS.

(Application filed May 7, 1898. Renewed Nov. 10, 1900.)

(No Model.)

Fig. 1.

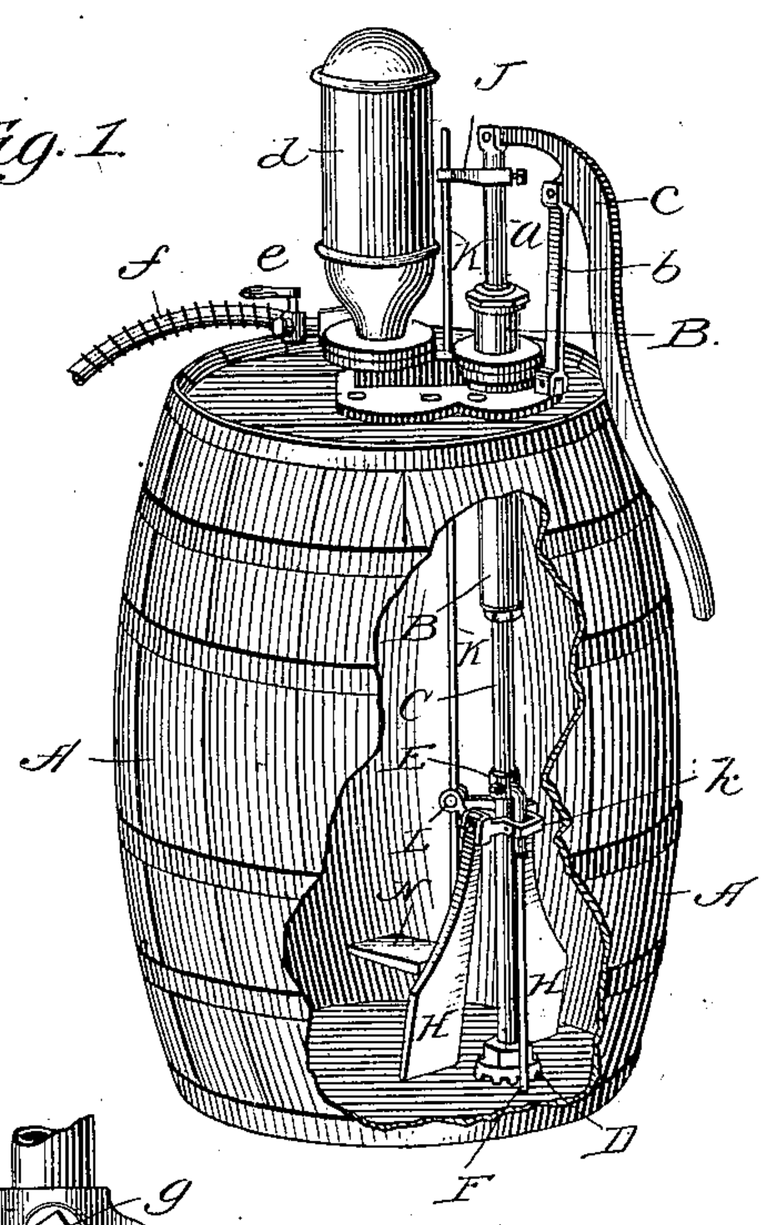


Fig. 2.

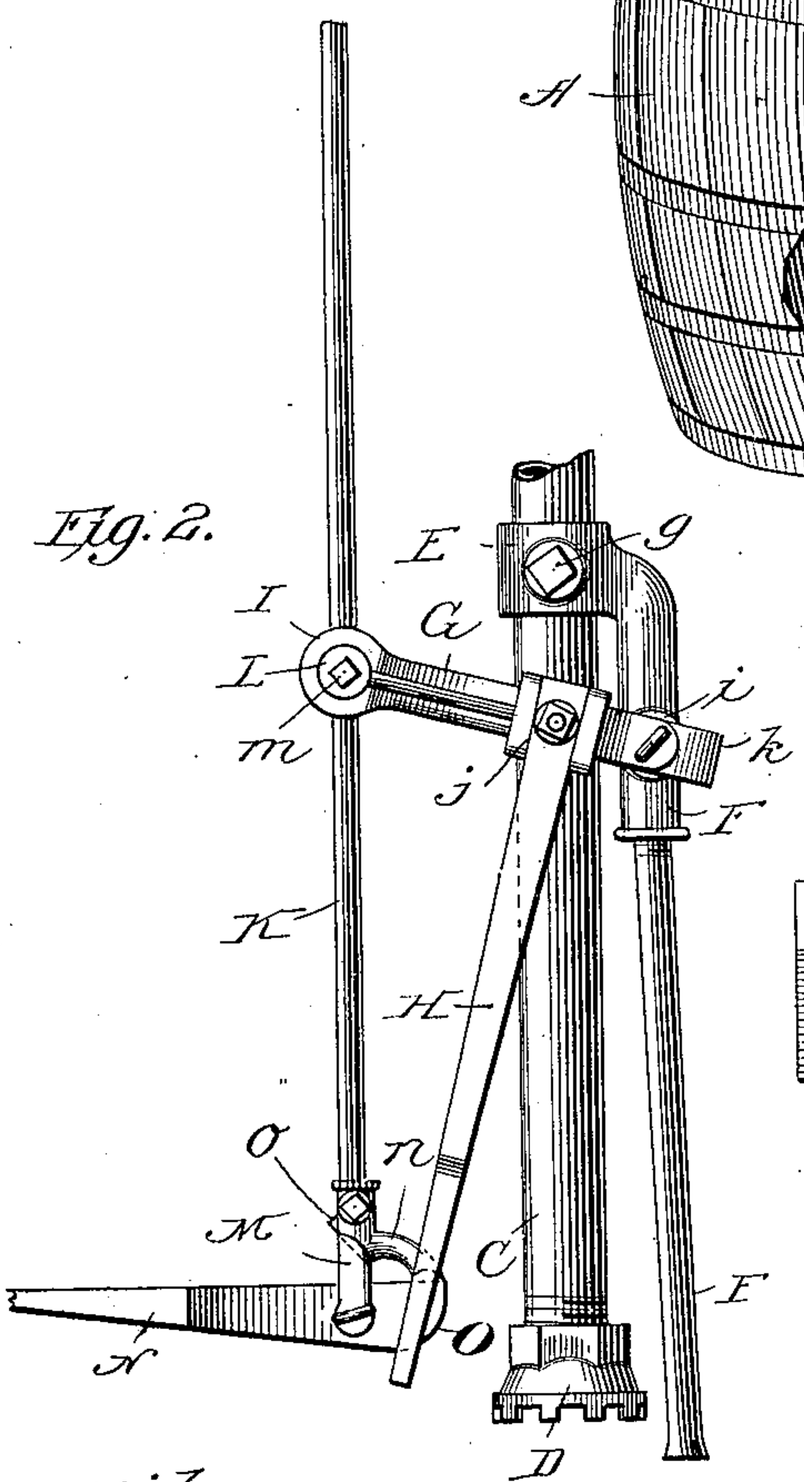


Fig. 4.

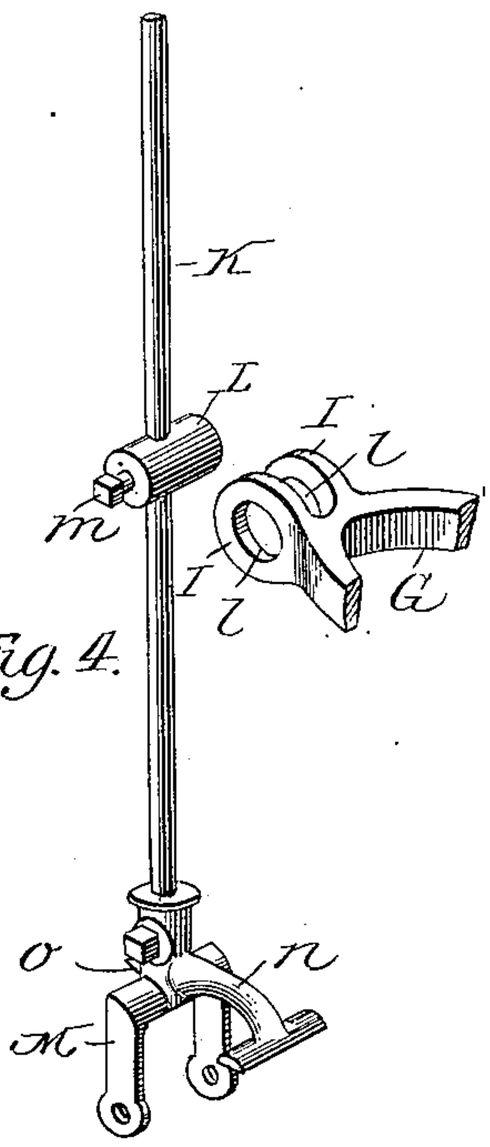
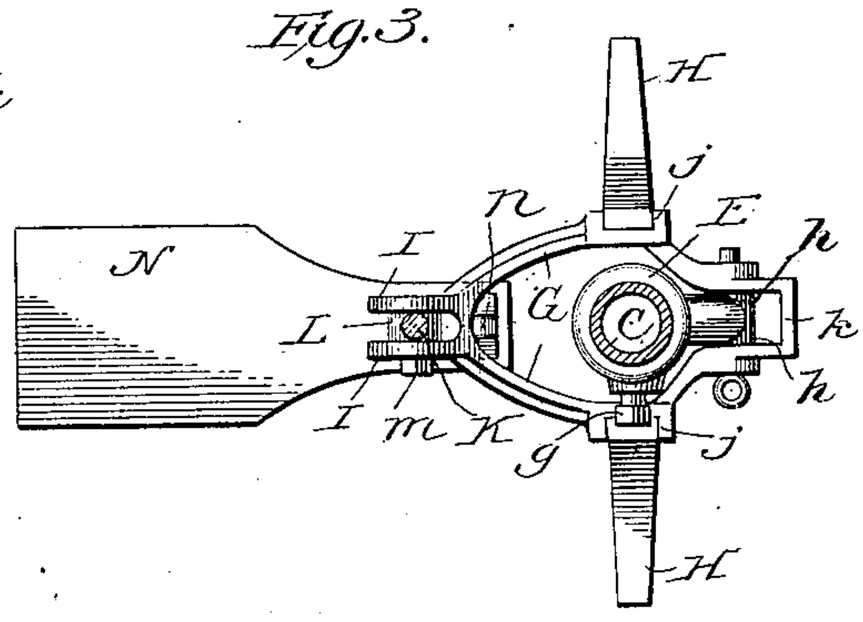


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM L. DEMING, OF SALEM, OHIO, ASSIGNOR TO THE DEMING COMPANY, OF SAME PLACE.

AGITATOR FOR SPRAYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 664,238, dated December 18, 1900.

Application filed May 7, 1898. Renewed November 10, 1900. Serial No. 36,087. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. DEMING, a citizen of the United States, residing at Salem, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Agitators for Spraying Apparatus; and I do hereby 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.

My invention relates to portable spraying apparatus intended primarily for use in orchards and vineyards when mounted upon a wagon or specially-constructed truck.

More particularly stated, it consists in a mechanical agitator actuated by the pump-handle, with intermediate connections, and submerged in the solution to be sprayed in manner and form as will later appear.

The invention will be hereinafter described, and particularly pointed out in the claims following.

In the accompanying drawings, which form part of this specification, and whereon like letters indicate corresponding parts in the several views, Figure 1 is a perspective view of a spraying-pump located in a barrel-tank, the latter partly broken away exposing to view a mechanical agitator attached to the suction-pipe of the pump. Fig. 2 is a side elevation of the agitator detached. Fig. 3 is a plan view of the agitator, its supporting suction-pipe and its actuating-rod being in section; and Fig. 4 is a perspective view of the actuating-rod, a pivot-nut adjustably mounted thereon, and a fork at its lower end affording a hinge for one agitator-blade.

Reference being had to the drawings and letters thereon, A indicates a barrel employed as a convenient form of supply-tank, within which is suspended part of a pump-cylinder B, having below a suction-pipe C, the latter terminating in a screened foot or intake D, adjacent to the bottom of barrel A. Projecting from the upper end of cylinder B is a reciprocating piston-rod *a*, and mounted upon the head of barrel A is a fulcrum or bearer *b*, a handle *c*, an air-chamber *d*, and a delivery-cock *e*, to which latter is attached the end of a hose *f*, as shown by Fig. 1.

Mounted upon suction-pipe C within barrel A is a vertically-adjustable collar E, retained in position by a set-screw *g*, bearing upon said pipe, and projecting therefrom is a dependent gage-rod F, which at all times rests upon the bottom of barrel A to assist in maintaining the apparatus in operative position. Upon each side of gage-rod F, near its upper end or collar E, are laterally-projecting bosses *h h*, with squared faces *i i*, upon which is pivotally mounted a yoke G, having side channels *j j*, within which are bolted swinging agitator-blades H H. Yoke G surrounds the suction-pipe C, as well as gage-rod F, and at one end is finished in a rectangular bracket *k*, the latter connecting the sides of said yoke and permitting free pivotal action between it and its supporting-rod F. At its opposite end the yoke G is bifurcated, as at I I, and broken by pivot-bearings *l l* passing therethrough in horizontal alinement.

Upon the vertically-moving piston-rod *a* is adjustably secured an arm or bracket J, to which is attached a vertically-reciprocating actuating-rod K, receiving its motion from said piston-rod when the pump is in use. Extending into barrel A rod K passes through a pivot-nut L, loosely journaled in the pivot-bearings *l l* aforesaid, and is there adjustably retained by means of a set-screw *m* passing through the end of nut L and bearing upon the surface of its rod K. At its lower extremity the actuating-rod K is equipped with a fork M, between the tangs of which is pivotally retained a vertically-movable agitator-blade or foot-paddle N, having a partially-rounded heel O projecting to one side of its pivotal point opposite that of the paddle-blade. Immediately above said blade N the fork M is equipped with oppositely-disposed lateral spurs *n o*, respectively, the former for limiting the downstroke of blade N and the latter for limiting its upstroke, as will best be seen by reference to Fig. 2.

This being a description of my invention in its preferred form of construction, its use and operation are quite apparent. Mounted upon a wagon or other vehicle one, two, or more sections of hose *f*, each equipped with a suitable spraying-nozzle (not shown) in communication with a single or a multiple delivery-

cock, as *e*, may be directed upon trees or vines at either or both sides of the line of movement. In such application, especially of the heavier insecticide solutions, it is a matter of prime importance that the same be constantly and thoroughly agitated, particularly at and about the intake or suction strainer D. To this end and with this object in view blades H H and N are called into requisition with each stroke of the pump-handle *c*. An upstroke of said handle operating through its attached actuating-rod K depresses yoke G, rocking the same upon gage-rod F, upon which it is pivoted, and swinging or oscillating blades H H in the arc of a circle past suction-pipe C on either side. Simultaneously with this movement blade N, journaled in fork M at the end of rod K, is likewise depressed and yielding to the resistance afforded by the spraying solution is elevated at its free end until arrested by spur *o* above. At this instant the adjustment of rod K insures contact between curved heel O on blade N and the bottom of barrel A, serving to forcibly return said blade to a horizontal position. An upstroke of actuating-rod K now vigorously reverses the motion of blades H H, blade N at the same time being retained in the horizontal position aforesaid by the action of the projecting spur *n* in contact with its heel O and elevated bodily to materially assist the agitation.

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

1. In a spraying apparatus the combination with a pump and a supply-tank, of agitator-blades pivotally supported within said tank, and an actuating-rod for oscillating said blades in reversed directions, substantially as described.

2. In a spraying apparatus the combination with a pump and a supply-tank, of agitator-blades pivotally supported by the suction-pipe of said pump, and an actuating-rod for oscillating said blades in reverse directions, substantially as described.

3. In a spraying apparatus the combination with a pump and a supply-tank, of oscillating and vertically-reciprocating agitator-blades, an actuating-rod for automatically operating all of said blades, and a gage-rod for regulating the relative position of said blades and the intake of the pump aforesaid, substantially as described.

4. In a spraying apparatus the combination with a pump and a supply-tank, of a vertically-reciprocating agitator-blade, an actuating-rod pivotally connected to the blade, and a stop arranged in the path of said blade for limiting the pivotal movement thereof in one direction, substantially as described.

5. In a spraying apparatus the combination with a pump and a supply-tank, of an actuating-rod pivotally supported by the suction-pipe of said pump, a vertically-reciprocating agitator-blade pivotally connected to the actuating-rod, and a stop arranged in the path of said blade for limiting the pivotal movement thereof in one direction, substantially as described.

6. In a spraying apparatus the combination with a pump and a supply-tank, of a yoke pivotally supported by the suction-pipe of said pump, agitator-blades carried by the yoke, an actuating-rod bearing an adjustable pivot-nut journaled upon the yoke, a vertically-reciprocating agitator-blade pivotally connected to the actuating-rod, and a stop arranged in the path of said blade for limiting its pivotal movement downward, substantially as described.

7. In a spraying apparatus the combination with a pump and a supply-tank, of a yoke pivotally supported by the suction-pipe of said pump, an actuating-rod bearing an adjustable pivot-nut journaled upon the yoke, and a vertically-reciprocating agitator-blade pivotally connected to the actuating-rod, substantially as described.

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

WILLIAM L. DEMING.

Witnesses:

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HUGH M. STERLING.