

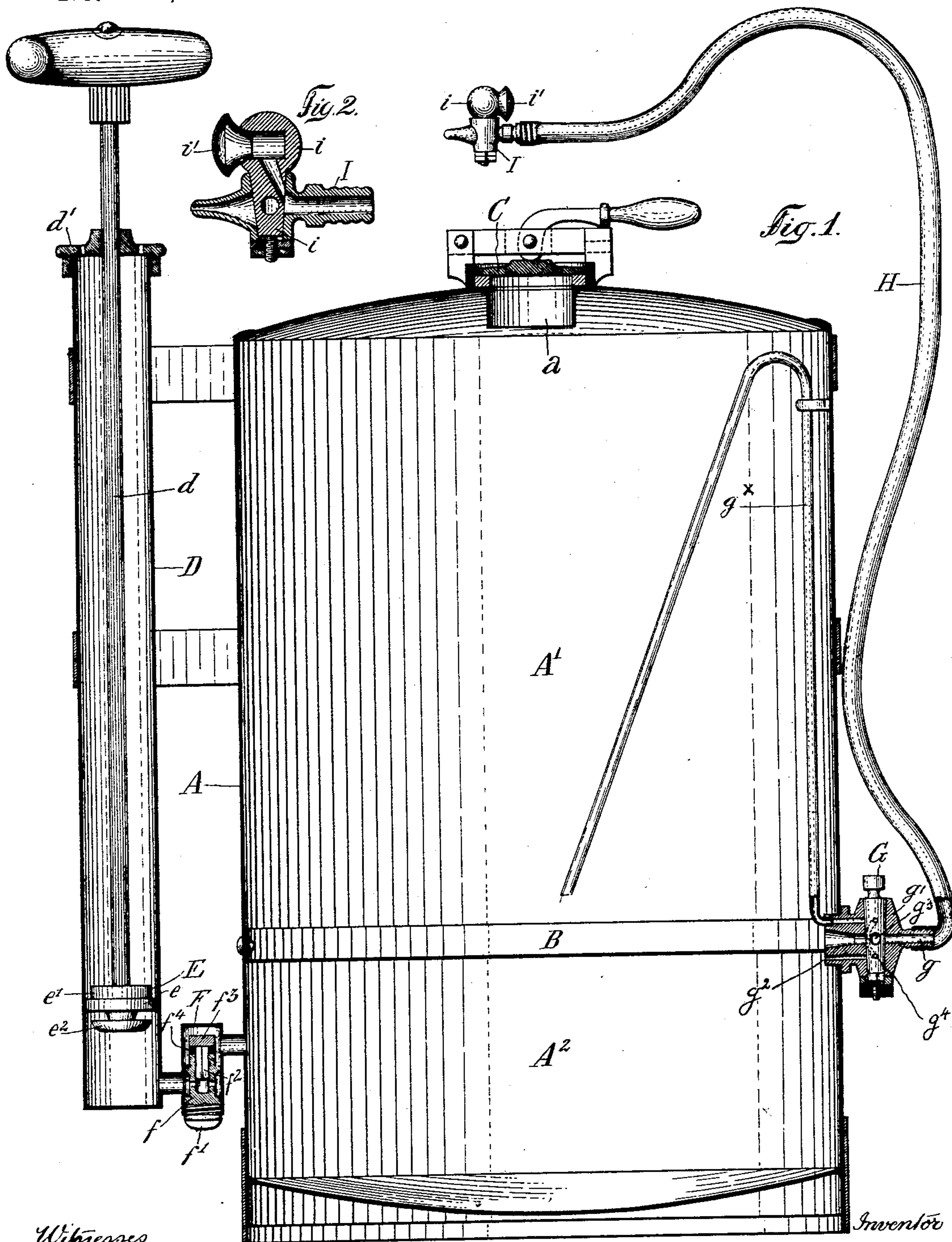
(No Model.)

A. MORGAN.

APPARATUS FOR PROJECTING LIQUIDS UNDER PRESSURE.

No. 587,532.

Patented Aug. 3, 1897.



Witnesses

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UNITED STATES PATENT OFFICE.

ALFRED MORGAN, OF GENEVA, SWITZERLAND.

APPARATUS FOR PROJECTING LIQUIDS UNDER PRESSURE.

SPECIFICATION forming part of Letters Patent No. 587,532, dated August 3, 1897.

Application filed February 3, 1897. Serial No. 621,792. (No model.)

To all whom it may concern:

Be it known that I, ALFRED MORGAN, of Geneva, Switzerland, have invented certain new and useful Improvements in Apparatus for the Projection of Liquids Under Pressure, of which the following is a specification.

The invention relates to apparatus for the projection of liquids under pressure and may be used for numerous purposes—such, for example, as the extinguishing of fires by means of a jet of water or of a jet of water mixed with substances intended to increase the extinguishing action of the same, the treatment of vineyards for the destruction of the mildew by means of the projection of a suitable liquid, and for such purposes.

In the accompanying drawings, Figure 1 is a vertical section illustrating the apparatus constructed according to my invention, and Fig. 2 is a section of a combined jet and rose.

A is a tank divided by means of a wall or partition B into two superposed compartments A' and A². The compartment A' is provided with an opening a, closed by means of a cover C, and adapted to enable the liquid to be projected to be introduced into the said compartment A'. The second compartment A² is intended to receive the compressed air for acting upon the liquid contained in the compartment A'.

An air-pump composed of a cylinder D, a piston E, and a valve f³ is secured to the tank A in any suitable way and at any suitable point of the same. It may, for instance, be located inside the said tank. The interior portion of the cylinder D of said pump is connected with the compartment A² of the tank by means of the casing F of a non-return valve f³. The cover d' of the pump-cylinder D is provided with holes intended to establish communication between the upper part of the piston and the open air.

The lower portion of the valve-case F is provided with a plug f', screwed to the said casing F and made of one piece with the seat f of the non-return valve. The said valve is formed of a valve proper, f³, having guiding-wings f² within the hole of the seat f. A rubber ring f⁴ is fixed to the valve and bears on the seat f for securing the tightness of the valve.

The piston E is composed of a caoutchouc

ring e, fitted into the cylinder D and arranged somewhat loosely between two flanges e' and e², secured to the shaft d. The flange e' is of such a shape that when the ring e is resting upon the flange e², Fig. 2, there is a circular channel between said flange e' and the inner circumference of the ring e. The flange e² is provided with a series of holes arranged so as not to be covered over by the ring e, and the upper and under parts of the piston allow a direct communication for air to pass during the ascending stroke of the piston, in which the flange e² carries the ring e upward.

During the downward stroke of the piston the flange e' presses upon and moves the ring e downward, and the said flange e' having no apertures the piston will then close the cylinder D and force the fluid along. The piston just described works as a sucking and forcing piston and without any separate valve. The non-return valve F mentioned above is only intended to prevent the pressure which is accumulated in the compartment A² reacting upon the under side of the piston during the upward stroke.

G is a tap intended both for letting out the liquid and for conveying the compressed air from the compartment A² to the compartment A'. The holes g³ and g⁴ in the plug of the said tap and the hole g in the casing of the same are so arranged that when the liquid contained in A' is prevented from coming out through the hole g³ to the tube g the compressed air in A² is also prevented from passing through the holes g³ g⁴ and pipe g^x into the compartment A', and vice versa. This arrangement has a double object: first, to produce a bubbling up of the liquid contained in the compartment A' at the precise moment when it is to be thrown out, this being of great importance when the said liquid is a mixture which must be thrown out only after having been made homogeneous by stirring it up, and, second, to produce the projection of said liquid through the tap G, the pipe H, and the jet or rose attachment I by means of the compressed air contained in the compartment A².

The cock G is closed and the apparatus can be put under pressure so as to be ready for immediate action when required, the capacity of the compartment A² being large enough to

contain, if desired, sufficient compressed air to project the whole of the liquid contained in the compartment A'. The air may be pumped into the compartment A² while the
5 cock G is open, if it is desired to maintain a constant pressure upon the liquid.

The nozzle or attachment I is adapted to produce either a straight jet of the liquid or a series of jets, as from a rose. For this purpose the said attachment is made in the form
10 of a cock, the plug *i* of which is provided with a rose-head or other similar device *i'*. When the plug *i* is turned as indicated in Fig. 2 of the drawings, the straight jet is interrupted and the liquid passes through the
15 rose *i'* of said cock, so as to produce a shower of the liquid.

I claim as my invention—

The cock G formed of a tap having holes g^3 and g^4 and a casing g' having holes g^2 , and 20 g and pipe g^x in combination with the vessel having the compartments A' and A² so that the compressed air contained in one compartment passes through the liquid contained in the other compartment at the moment when 25 said liquid is allowed to escape, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALFRED MORGAN.

Witnesses:

E. IMER-SCHNEIDER,
TH. IMER.