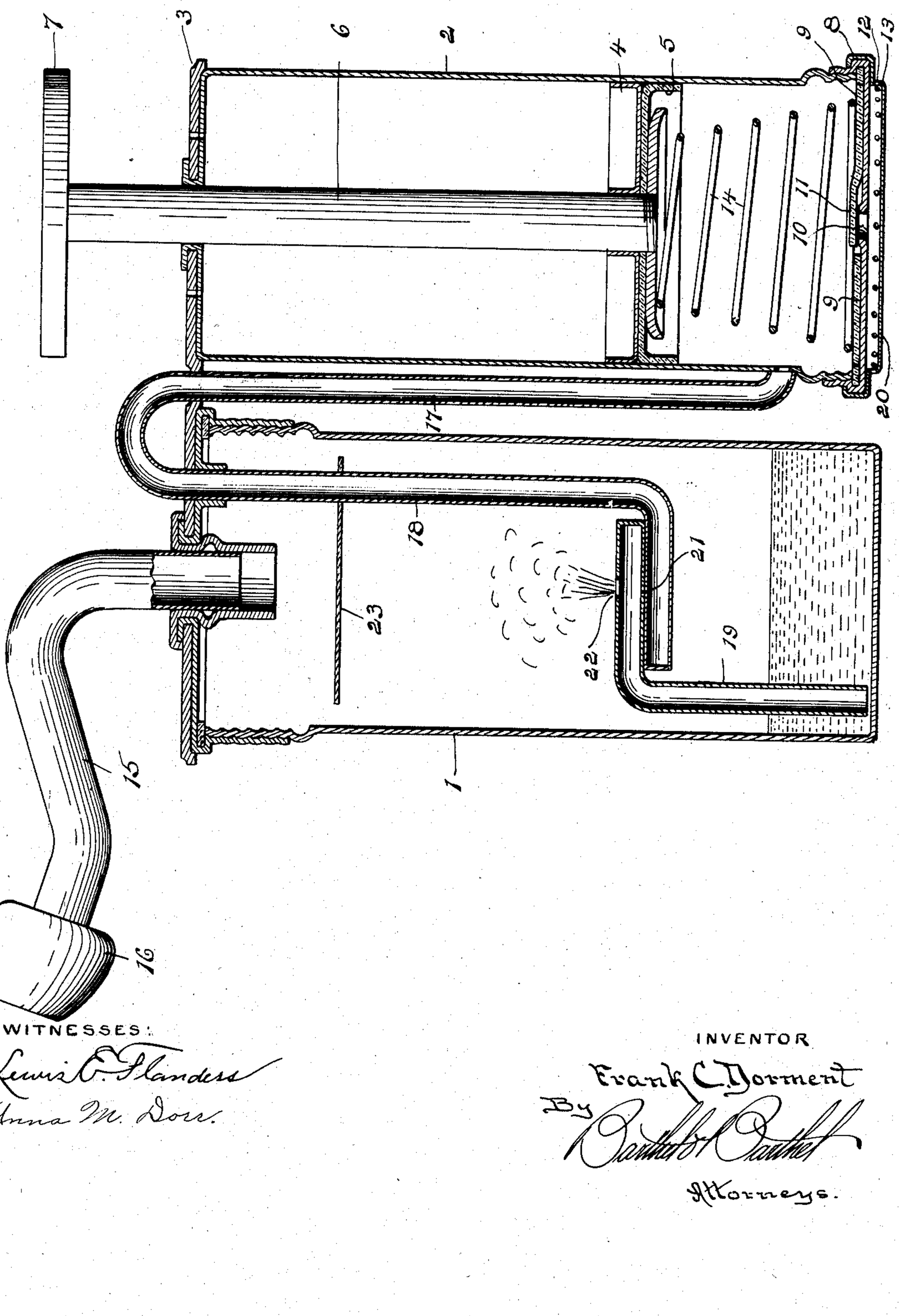
No. 865,021. PATENTED SEPT. 3, 1907.

F. C. DORMENT.

ATOMIZER.

APPLICATION FILED MAY 8, 1907.



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ATOMIZER.

No. 865,021. Specification of Letters Patent. Patented Sept. 3, 1907.

Application filed May 8, 1907. Serial No. 372,607.

To all whom it may concern:

Be it known that I, FRANK C. DORMENT, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Atomizers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to atomizers and especially to vaporizing and controlling means which are positive in action, easily adjusted and simple to construct.

The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

The drawing is a view in longitudinal section of an atomizer embodying the invention.

The atomizer consists in a vaporizing chamber 1 and a compression or piston chamber 2 secured by a plate 3 across their upper ends. Although they may be made of any suitable material, in the preferred form they each comprise a seamless cylinder pressed or drawn from sheet metal. The piston cylinder is provided with a piston head 4, preferably of suitable sheet metal construction, with an outwardly cupped flexible packing disk 5, and a stem 6 extends through a guide aperture in the upper end, with a thumb plate 7 removably secured thereon. The lower end of the cylinder is provided with a cap 8, which has suitable screw-threaded or interlocking connection thereon, and is provided with a flexible leather or rubber packing disk 9. A central circular aperture 10 is formed in the cap with its edge slightly inturned as a seat for a valve flap 11 or tongue cut in the packing sheet.

The cap has a depressed center 20 provided with a plurality of radial apertures 12 in the rim 13. This admits air to the valve and cylinder in such manner that the hand of the user cannot readily close or shut off the apertures. A spiral spring 14, preferably a conical helix, in compression between the piston and cap. A mouth piece 15 of suitable design is secured removably in the upper end of the atomizing cylinder and nasal or aural tips 16 are provided therefor.

An air tube 17 is secured in parallel relation to and preferably between the cylinders, its lower end opening directly into the piston chamber below the piston head. Its upper portion is bent into a U and the depending arm 18 extends through the upper end of the atomizing cylinder for a major portion of the length of the cylinder. It is bent transversely across the cylinder near its lower end, and forms a support for a vaporizing tube 19 bent at right angles between its ends, the horizontal arm being secured on the upper side of the air tube arm, and its lower open end being close to the cylinder bottom.

A pair of oppositely disposed orifices 21, 22 are formed on the superposed horizontal tubes in alinement with each other. The upper vent 22 is somewhat larger than the lower one and constitutes therewith an atomizing nozzle which throws the spray directly up the cylinder. A deflector 23 in the shape of a horizontal disk somewhat smaller than the cylinder base, is secured below the mouthpiece on the air pipe.

The atomizing cylinder is removably attached to a cap which is secured to the plate in any preferred manner, so that it can be removed for refilling or cleaning. The piston can be taken from the bottom of its cylinder by removing the thumb plate and cylinder cap.

What I claim as my invention is:—

1. An atomizer comprising an atomizing chamber, a compression chamber consisting of a cylinder, a piston reciprocable therein, a vaporizer in the atomizing chamber operatively connected to the compression end of the cylinder, and an air inlet valve in the cap closing the compression end of the cylinder, provided with air inlets radially disposed in the periphery of the cap.

2. In an atomizer having an atomizing chamber, a compression cylinder, a piston therein, and a vaporizer in the atomizing cylinder, operatively connected to the compression cylinder, a hollow cylinder cap closing the compression end of the cylinder, an air inlet valve in the inner wall of the cap, and air inlet ducts in the periphery of the cap.

3. In an atomizer having an atomizing chamber, a compression cylinder, a piston therein, and a vaporizer in the atomizing cylinder, operatively connected to the compression cylinder, a hollow cylinder cap detachably secured in the compression end of the cylinder, an apertured valve seat in the inner wall of the cap, air inlets in the periphery of the cap, a flexible packing disk between the cylinder and cap, and a closure on the seat formed from the body of the packing disk.

4. An atomizer comprising a compression cylinder, a piston therein, an atomizing cylinder secured in parallel relation thereto, a vaporizer consisting of an air tube connected to the lower compression end of the piston cylinder extending longitudinally of the atomizing cylinder through the upper head, bent transversely to the cylinder near its lower end, a supply tube bent at right angles, between its ends, with one arm supported on the transverse arm of the air tube, jet orifices in the superposed tubes, directed toward the upper end of the cylinder, and a cap removably secured in the lower end of the piston cylinder, provided with an air valve in its inner face, having air inlets in the cap periphery.

5. An atomizer comprising a compression cylinder, a piston therein, an atomizing cylinder secured in parallel relation thereto, a vaporizer consisting of an air tube connected to the lower compression end of the piston cylinder extending longitudinally of the atomizing cylinder through the upper head, bent transversely to the cylinder near its lower end, a supply tube bent at right angles, between its ends, with one arm supported on the transverse arm of the air tube, jet orifices in the superposed tubes, directed toward the upper end of the cylinder, a deflector plate between the jet orifice and upper end of

the cylinder, a cap removably secured in the lower end of the piston cylinder, and an air valve on its inner face, having air inlets in the cap periphery.

6. An atomizer comprising a piston cylinder provided with an imperforate piston, a central air valve in the cylinder compression head, radially disposed apertures in the head supplying the valve, and a vaporizing cylinder operatively connected to the piston chamber.

7. An atomizer comprising a piston cylinder, an imperforate piston therein, a hollow cylinder head removably secured in the compression end of the cylinder, a valve in the piston end of the head, air inlet apertures in the peripheral wall of the head, and a vaporizing cylinder operatively connected to the piston chamber.

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

FRANK C. DORMENT.

Witnesses:

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OTTO F. BARTHEL.