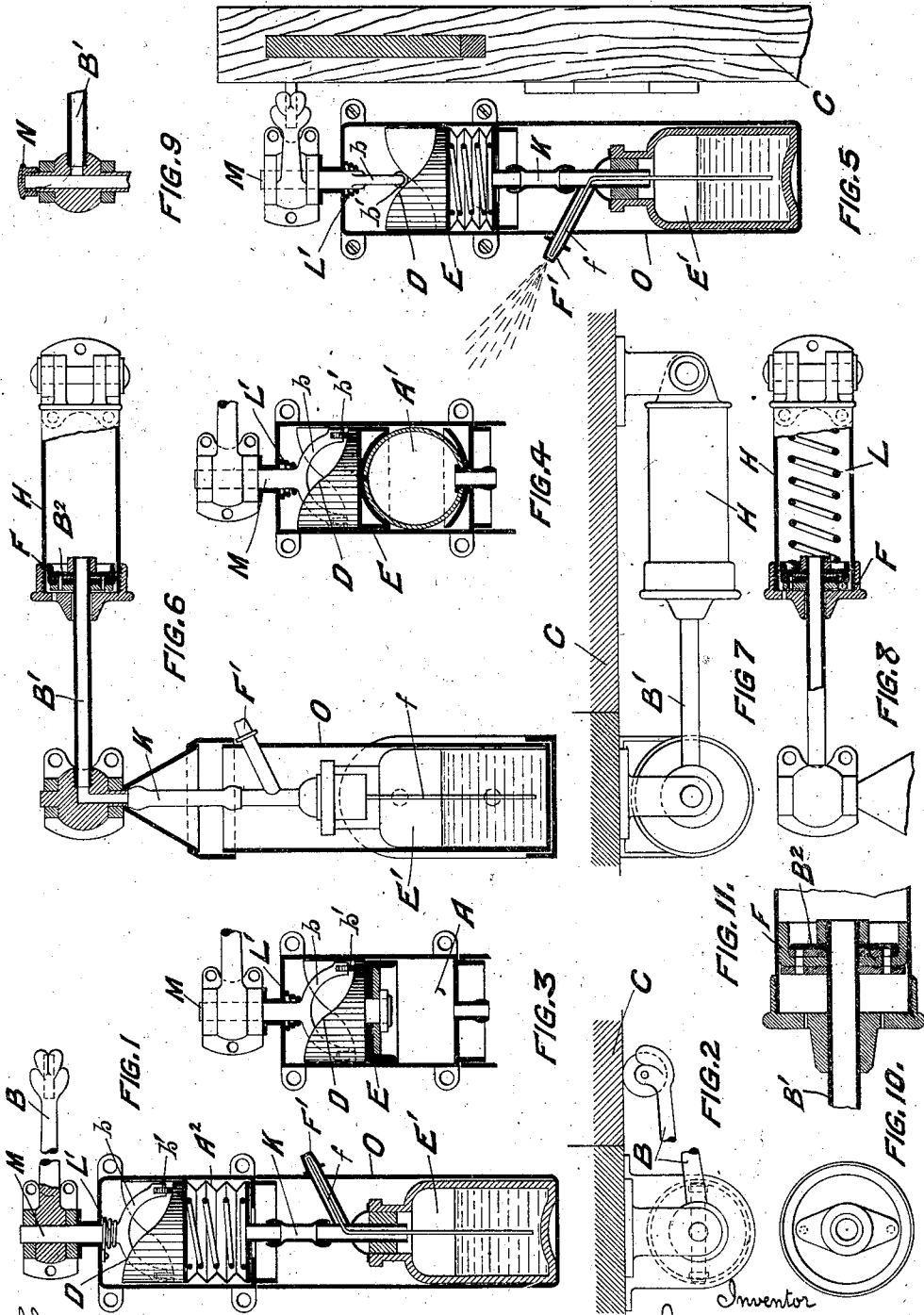


(No Model.)

G. C. MARKS.
ATOMIZER.

No. 593,750.

Patented Nov. 16, 1897.



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE CROYDON MARKS, OF LONDON, ENGLAND.

ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 593,750, dated November 16, 1897.

Application filed June 10, 1896. Serial No. 594,928. (No model.) Patented in England October 24, 1895, No. 20,070; in Belgium May 11, 1896, No. 121,300; in France May 13, 1896, No. 256,367; in Germany June 1, 1896, Nos. 58,548 and 58,549; in Switzerland June 2, 1896, No. 12,591; in Austria July 29, 1896, No. 46/3,040; in Italy September 1, 1896, LXXXIII, 170; in Hungary September 4, 1896, No. 7,296; in Norway September 5, 1896, No. 5,194; in Sweden September 7, 1896, No. 7,899, and in Spain November 21, 1896, No. 19,594.

To all whom it may concern:

Be it known that I, GEORGE CROYDON MARKS, a citizen of Great Britain, residing at Stonebridge Park, London, in the county of Middlesex, England, have invented certain new and useful Improvements in Deodorizers, of which the following is a specification.

The invention has been patented in Great Britain, No. 20,070, dated October 24, 1895; in Belgium, No. 121,300, dated May 11, 1896; in Austria, No. 46/3,040, dated July 29, 1896; in France, No. 256,367, dated May 13, 1896; in Switzerland, No. 12,591, dated June 2, 1896; in Germany, (Gebrauchmuster,) Nos. 58,548 and 58,549, dated June 1, 1896; in Spain, No. 19,594, dated November 21, 1896; in Norway, No. 5,194, dated September 5, 1896; in Sweden, No. 7,899, dated September 7, 1896; in Italy, No. 170, Vol. LXXXIII, dated September 1, 1896, and in Hungary, No. 7,296, dated September 4, 1896.

My invention has reference to improvements connected with deodorizing apparatus for use in connection with lavatories, sick-rooms, public buildings, vessels, dwelling-houses, and offices, and arranged in such a manner as to be capable of producing a spray or vapor of disinfecting fluid or deodorizing fluid by the opening and closing of the door. I am also enabled to utilize my apparatus to insure that the door shall be closed automatically after the spray has been produced or after the handle has been released.

In the accompanying sheet of explanatory drawings, Figure 1 is a sectional elevation of one form of my apparatus, and Fig. 2 is a plan of the same. Figs. 3 and 4 are part sectional elevations of alternative forms of my air-expelling plungers. Fig. 5 is a sectional elevation showing my apparatus attached to a door-frame and in position for producing a spray. Fig. 6 is a sectional elevation of a modified form of apparatus, and Fig. 7 is a plan of the same, while Figs. 8 and 9 are detailed views of the fittings I sometimes employ; and Figs. 10 and 11, respectively, detail front and side sectional elevations of the piston employed.

In carrying my invention into effect I construct my spray-producing apparatus and

door-closing check combined in one manner by producing a cylinder A, ball A', or collapsible vessel or chamber A², which I attach to the door or frame, and I arrange that a bar or lever B, which is in contact with the door C or frame shall, by means of a curved or inclined wedge or cam-like path or paths D, force down a rod, pin, plate-plunger, or the like E, so as to collapse the ball A' or vessel A², or so as to compress a piston F within a cylinder H, and thus to force out the air from within the ball, vessel, or cylinder in such a manner as to suck up or expel the fluid from within a chamber E', placed conveniently near to it, and then to eject the raised portion of fluid through an injector-like nozzle F' in the form of spray into the room, hall, or apartment, the operation of compressing and ejecting being performed by the act of opening and closing the door.

I place my fluid-chamber E' preferably beneath or near my compression-cylinder H or vessel A A' A², and I lead a tube K from the air-chamber to the fluid-chamber E', so that the spray may be formed by the issuing current of air from the delivery port or tube f, leading from the cylinder or vessel.

When providing for a door-closing device upon my apparatus, I place a spring L in combination with my cylinder-piston or operating rod or lever which always tends to keep the door closed, or I place an ordinary spiral spring L' about the axis of my pin M, which by its torsional effect will serve the same purpose. To prevent the slamming of the door, I may arrange that the air within my compression-chamber or within my cylinder shall act as a buffer or baffle-stop, or I may provide a cataract arrangement of air-escape within a separate portion of the cylinder or within a separate cylinder or chamber of my combination apparatus.

I may place my cylinder and injecting or spray-producing apparatus upon the door-frame or upon the door itself, allowing the operating-rod B, piston-rod B', cam, or lever to be placed either upon the door or upon the frame, as may be desired for any particular requirement.

I cover or inclose my perfume vessel or deodorizing vessel E' and the connecting-tube K within a casing or tube O, as illustrated.

5 I prefer to place rollers b' upon my moving contact-bars b, so as to minimize friction and to obviate noise.

I do not limit the application of my improved spray-producing apparatus for fitting to doors which require to have closing devices 10 attached in combination; but I employ the improvements either with or without the door-closing connections in the manner hereinbefore described, and I sometimes provide disconnecting devices upon my apparatus, such 15 as outlet screws or caps N for allowing one to work without the other by causing the air to escape without producing a spray when so desired, the cover N constituting the means for opening and closing the air-escape nipple 20 connected with the pipe B'.

I employ any suitable disinfectant or de-

odorizing agent or perfume in my chamber or bottle E', from which the spray is produced.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is— 25

In combination in an atomizer, the liquid-holder, a spray-pipe, the air-pump comprising the cylinder and piston, a permanent pipe connection between the pump and the spray- 30 pipe, an air-escape nipple connecting with the said pipe, and means for opening and closing the said nipple whereby the air may be allowed to escape from the pipe while the same remains connected with both the air- 35 pump and the spray-pipe.

In witness whereof I have hereunto set my hand in presence of two witnesses.

GEORGE CROYDON MARKS.

Witnesses:

RICHARD GEORGE ATKINS,
WILLIAM EDWARD EVANS.