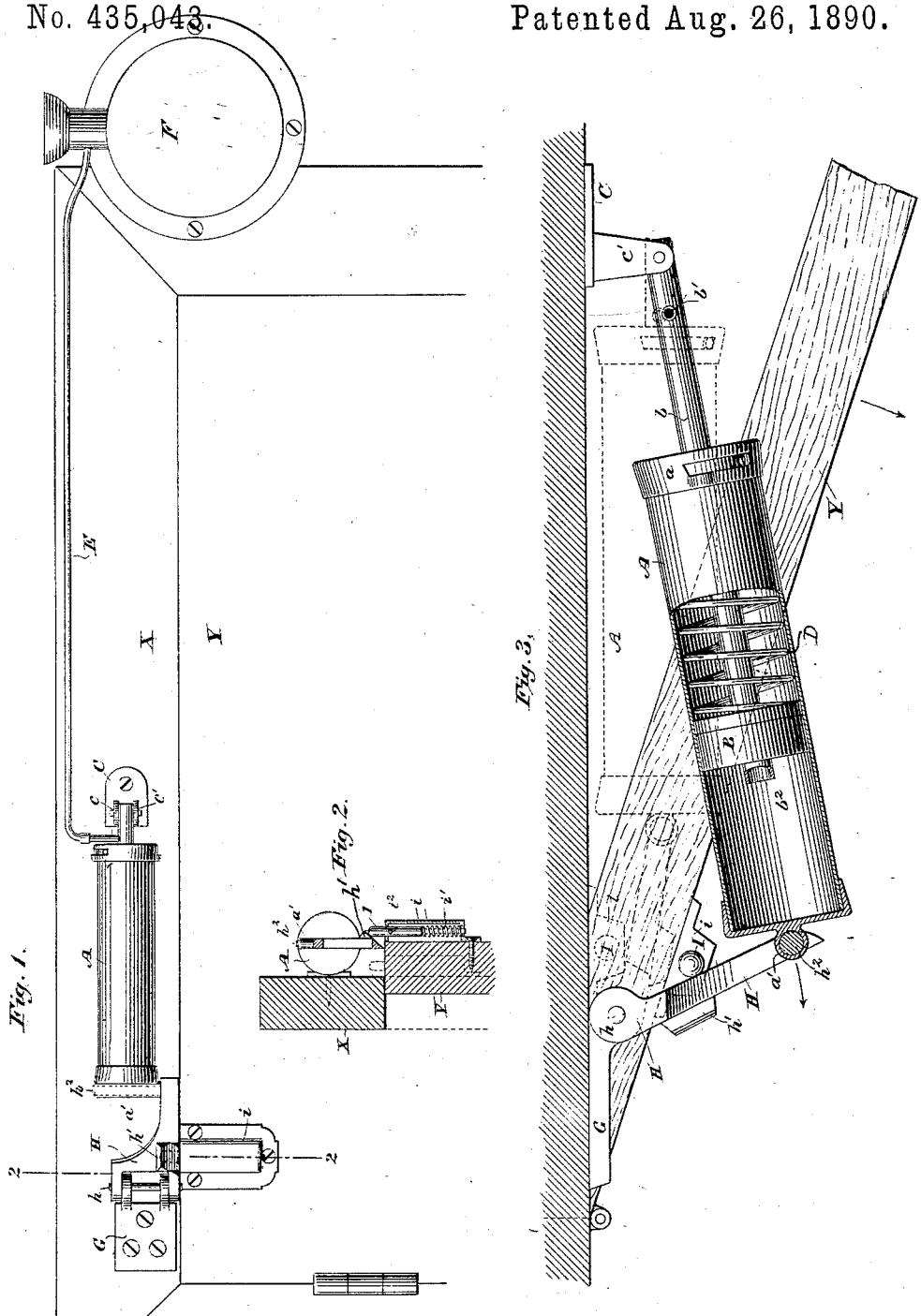
(No Model.)

F. J. MITCHELL.

AIR FORCING AND COMPRESSING APPARATUS FOR ATOMIZERS OR OTHER DEVICES.

No. 435,043. Patented Aug. 26, 1890.



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AIR FORCING AND COMPRESSING APPARATUS FOR ATOMIZERS OR OTHER DEVICES.

SPECIFICATION forming part of Letters Patent No. 435,043, dated August 26, 1890.

Application filed November 29, 1889. Serial No. 331,975. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK JAMES MITCHELL, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Apparatus for Forcing and Compressing Air, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

The object of my invention is to provide means for operating an air-forcing apparatus by the movement of an object—such as a door—situated at any desired distance from the point to which the air is to be carried; and to this end it consists in the novel mechanism and devices for imparting the requisite movement to the different parts of the air-forcing apparatus, as hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in elevation, showing my invention in position adapted to supply air to an atomizer upon the opening of a door. Fig. 2 is a cross-sectional elevation thereof on the line 2 2, Fig. 1, showing the door almost closed. Fig. 3 is a plan view thereof on a larger scale, partly in section, showing the position of the different parts of the apparatus as the door is being opened.

Similar letters of reference are used to indicate corresponding parts in all the views.

The air-forcing cylinder A is provided with a piston or plunger B, mounted on a piston-rod *b*. The cylinder and piston are pivotally attached to a door-jamb X by means of the pivot *c*, which passes through the piston-rod *b* and the lugs *c'* of the plate C, which is screwed or otherwise attached to the jamb. A coil-spring D encircles the piston-rod and is held between the piston B and the cylinder-head *a*, so that when the cylinder is moved away from the piston the spring will be compressed. A vent *b'* communicates with an air-passage b^2, which extends through the piston-rod *b* to the under side of the piston. To the vent *b'* is attached a tube E, which communicates with an atomizer F or other device adapted to be operated by compressed air. To the door-jamb X is also secured a plate G, to which the swinging arm or link H is attached by the pivot *h*. The arm H is provided with a beveled portion *h'* and with an upwardly-projecting pin h^2, which fits into the socket *a'*, attached to the end of cylinder A. A spring-supported bolt I, inclosed within a suitable case or housing *i*, is secured to the door Y opposite or under the beveled portion *h'* of the arm H. A spiral spring *i'* tends to normally support the bolt I, so that its upper end will project above the top of the door, as shown in Fig. 2. A pin or other stop i^2 limits the upward movement of the bolt.

The operation of my invention will now be readily understood. When the door is shut, the apparatus will be in the position shown in Fig. 1 and by the dotted lines in Figs. 2 and 3, and the projecting end of bolt I will be behind the arm H, between it and the jamb of the door. As the door is opened the bolt I moves with it, engages with the lower portion of arm H, and swings the latter on its pivot *h*. As the arm H swings on its pivot the bolt I is carried by the movement of the door toward the end of the arm, and the cylinder A, swinging on the pivot *c*, is carried away from the door, which movement draws the piston *b* toward the top or forward end of the cylinder, as shown in Fig. 3. This movement is continued until the door is opened sufficiently wide to carry the bolt I along to the end of the arm H, and as the bolt passes the end of the arm the latter is released, and the tension of the spring D forces the piston suddenly to the bottom of the cylinder, which returns to the position from which it was carried by the opening of the door. While the piston B is being moved forward in the cylinder A, air passes through tube E and air-passages b' b^2 into the space beneath the piston, and as the piston by the releasing of arm H and action of spring D is forced to the bottom of the cylinder this confined air is forcibly expelled back through the air-passages b^2 b' and tube E and puts the atomizer F into operation. As the door is being closed, when it reaches the position shown in Fig. 2 the upper end of the bolt I comes in contact with the beveled surface *h'* of the arm H. As this movement of the door

is continued, the bolt, following this beveled surface, is forced down into its housing until the movement of the door carries it under and past the arm H, when the spring *i'* forces it up again behind the arm H, as shown by dotted lines in Fig. 2. I prefer to have the bolt I rotate in its supporting case or housing, so as to produce as little friction as possible as it is carried along the arm H.

I have shown and described my invention as adapted to operate an atomizer by the opening and shutting of a door; but it is to be understood that I do not limit myself to that particular use of my invention, since it may be used to operate many other forms of apparatus, and it may also be attached to and operated by any object the parts of which have movement relatively to each other, as in the case of a door and its jamb, or whereby the desired movement will be imparted to the apparatus.

Although I do not limit myself to any particular means of operation or use for my invention, it is particularly adapted for disinfecting systems where it is desired to spray a small quantity of disinfecting powder or liquid into a room or compartment whenever the door thereof is opened, and one great advantage over other apparatus heretofore used for the purpose lies in the fact that the operating mechanism may be situated as near the outer edge of the door or other object as desired, so that a very slight movement thereof will suffice to put the apparatus into operation.

Another novel and highly-desirable and useful feature of my invention is that the force of the discharge is always uniform and does not depend on the force with which the door or other actuating mechanism is moved, and the force of the discharge may be regulated as desired by simply increasing or diminishing the amount of compression of the spring D.

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

1. The combination of an air-forcing device and a pivoted arm connected therewith, both adapted to be attached to a stationary support, such as a door-jamb, with a projection adapted to be attached to a movable support, such as a door, said projection being adapted to engage with said arm during a portion of the movement of said movable support in one direction and to pass under and behind said arm on the reverse movement of said movable support, substantially as and for the purposes set forth.

2. The combination, with an atomizer, the supports X Y, and an air-forcing device, of a pivoted arm H, provided with a beveled portion *h'*, and a depressible projection I, adapted to engage with said beveled portion of the arm H, substantially as and for the purposes set forth.

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