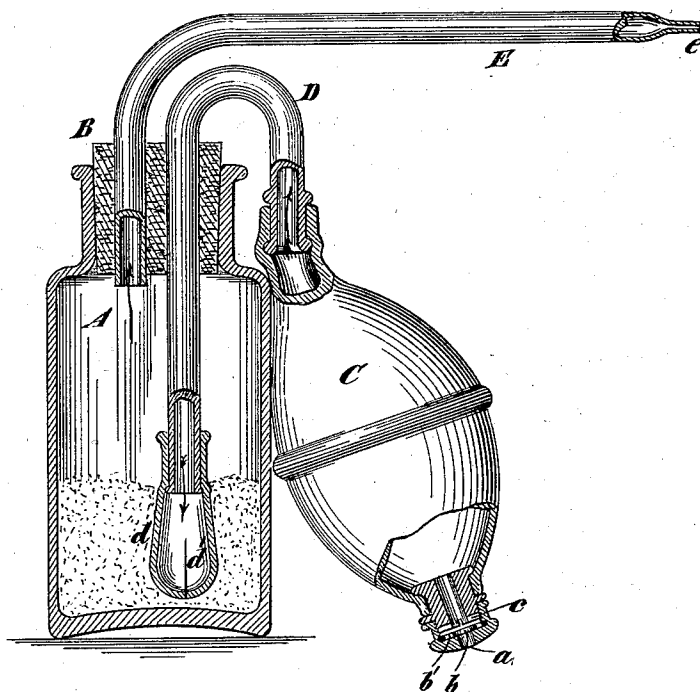


(No Model.)

H. H. HAYES.
POWDER DUSTER.

No. 277,900.

Patented May 22, 1883.



Witnesses

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Inventor

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UNITED STATES PATENT OFFICE.

HENRY H. HAYES, OF NEW YORK, N. Y.

POWDER-DUSTER.

SPECIFICATION forming part of Letters Patent No. 277,900, dated May 22, 1883.

Application filed August 23, 1882. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. HAYES, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Powder Guns or Blowers, of which the following is a specification.

This improvement relates to blowers for distributing powders employed to destroy insects, or for medical purposes.

The improvement consists in the combination of a receptacle for the powder, a pump for forcing air, an air-pipe extending from the pump into the lower part of the receptacle, a valve arranged at the lower end of said pipe for precluding the powder from being drawn into the pump, and a delivery-pipe extending into the upper part of the receptacle only, and having a suitable nozzle or distributing end.

The accompanying drawing is a sectional side view of a powder gun or blower embodying my improvement.

A designates the powder-receptacle. It may consist of a glass bottle with a cork, B, or a screw-cap or other stopper fitted to the mouth for closing it.

C designates the pump for forcing air into the said receptacle. It consists, as here shown, of a bulb of india-rubber, having at one end an air-inlet, *a*, controlled by a flap-valve, *b*, which may consist of india-rubber or other suitable material, and is hinged at *b'*, so that it may swing back away from the inlet *a* upon the ingress of air induced by the expansion of the said bulb after compression, and will close against the inlet when the bulb is compressed, so as to preclude the escape of air through the said inlet. When it is swung back, air may pass around it and through grooves *c* in the device against which it then impinges.

D designates an air-pipe, preferably made of metal, and extending from the other end of the said bulb through the stopper B and downward into the lower part of the receptacle.

In addition to the valve *b*, I employ a valve for precluding the powder from being drawn into the bulb of the pump C when said bulb is compressed. This valve is arranged at the

lower end of the air-pipe, so as to also preclude powder from being drawn into said pipe when the said bulb is compressed. It may consist of a small bulb, *d*, of india-rubber, having an incision, *d'*, and adapted to open and shut when subjected to the pressure of air on opposite sides.

As shown, the pump C is supported wholly by the air-pipe, and lies against the exterior of the powder-receptacle. It may be compressed by the hand while holding the said receptacle.

E designates the delivery-pipe. It may be made of metal, and extends inward into the upper part of the receptacle only; but it may extend outward from the stopper B in any desired direction. At the end it may have a nozzle, *e*; but preferably it will be of the same capacity throughout.

When the bulb of the pump is compressed, air is forced through the air-pipe into the powder-receptacle, and when it is allowed to expand air enters it through the inlet *a*. The air forced into the receptacle A through the air-pipe D is impelled downward against the bottom of the receptacle, and by its reaction throws the powder upward, keeping the receptacle filled with a cloud of powder. The delivery-pipe E, as it extends into the upper part of the receptacle only, is in a position to receive the powder as it is thrown up.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of a receptacle for the powder, a pump for forcing air, an air-pipe extending from the pump into the lower part of the receptacle, a valve arranged at the lower end of said pipe for precluding the powder from being drawn into the pump, and a delivery-pipe extending into the upper part of the receptacle only, and having a suitable nozzle or distributing end, substantially as specified.

H. H. HAYES.

Witnesses:

T. J. KEANE,
JAMES R. BOWEN.