

K. F. KNOWLES.

Improvement in Powder-Packing Apparatus.

No. 130,433.

Patented Aug. 13, 1872.

Fig. 1.

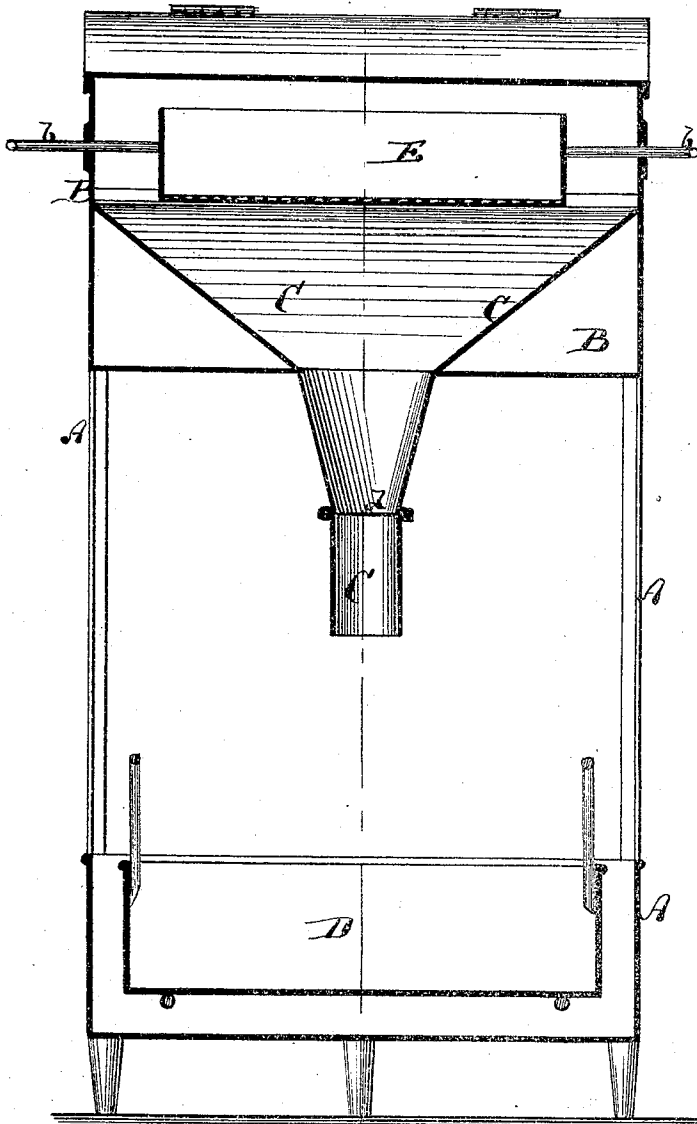
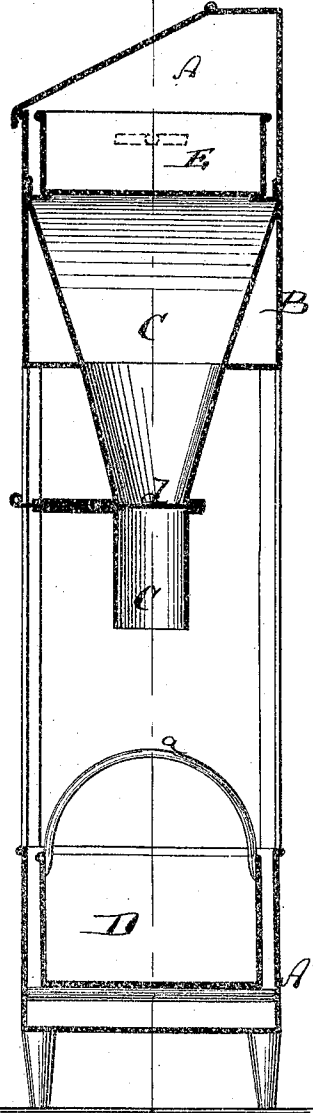


Fig. 2.



Witnesses:

John Becker  
W. A. Graham

Inventor:

K. F. Knowles

PER

Wm. H. [Signature]  
Attorneys.

# UNITED STATES PATENT OFFICE.

KENDALL F. KNOWLES, OF NEW YORK, N. Y.

## IMPROVEMENT IN POWDER-PACKING APPARATUS.

Specification forming part of Letters Patent No. 130,433, dated August 13, 1872.

Specification describing a new and Improved Powder-Packing Apparatus, invented by KENDALL F. KNOWLES, of the city, county, and State of New York.

Figure 1 is a vertical longitudinal, and Fig. 2 a vertical transverse section, of my improved powder-packing apparatus.

Similar letters of reference indicate corresponding parts.

This invention relates to a new apparatus for and method of filling, at one time, a large number of small bottles, boxes, or other vessels with insect-powder or other powder, and to make the separate handling and filling of each bottle, box, or vessel unnecessary. The invention consists in the combination of a movable sieve, with a conveying-hopper, and with a receiving-box, into which the powder is discharged, and which can be vibrated to even the powder contained in it.

A in the drawing represents the frame on which my apparatus is supported. This may be the frame or flooring of a building, or may be specially erected for the purpose. The upper part of the frame A holds a large case or box whose bottom forms a hopper or funnel, C, under which, in the lower part of the frame, another vessel, D, is placed. The vessel D is movable, and has handles *a a*, or other devices, by means of which it can be vibrated or removed. E is a sieve placed within the box B, and supported therein in a horizontal position. By means of rods *b b*, which project from the ends of the sieve E, the same can be reciprocated in the case B. The bottles or small vessels to be filled with powder are placed with their open ends to the top, into the box D, close together, filling the same. The powder to be filled into the

bottles or small vessels is put into the sieve E, and the latter then moved back and forth so as to cause the fine powder to pass into the hopper and thence into the box D. In the latter the powder will enter the bottles or small vessels and will fill the same, forming, however, a mound or hill in the middle of D, directly under the discharge opening of the hopper. When, then, the box D is shaken the powder in the middle will be caused to find its level, and all the bottles or small vessels within D will be equally filled. By this means I am enabled to fill a gross or several hundred of bottles or small vessels in a few minutes, where, heretofore, it took hours to fill the several bottles or small vessels singly. In the funnel C is or may be a gate or cock, *d*, by which the discharge of powder can be arrested whenever a box, D, is filled, until another box, D, filled with empty bottles or small vessels, is put in position for receiving the powder.

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

1. The powder-packing apparatus, consisting of the sieve E, hopper C, and shaker-box D, substantially as herein shown and described.

2. The method herein described of filling powder into a number of bottles or small vessels by placing them close together into a box, D, under a funnel or conduit, and shaking the box D after filling, as set forth.

KENDALL F. KNOWLES.

Witnesses:

T. B. MOSHER,  
W. A. GRAHAM.