No. 673,603. Patented May 7, 1901.

C. J. HARVEY.

DUSTING AND SWEEPING APPARATUS.

(Application filed July 30, 1900.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.

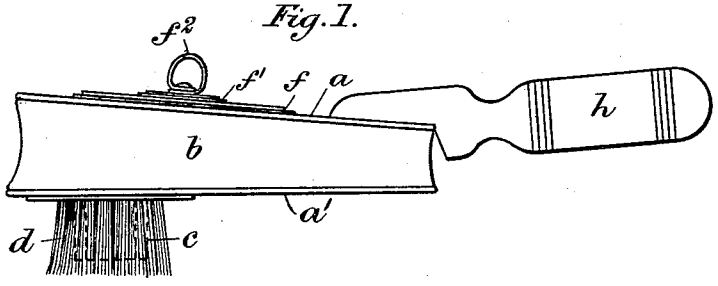


Fig. 2.

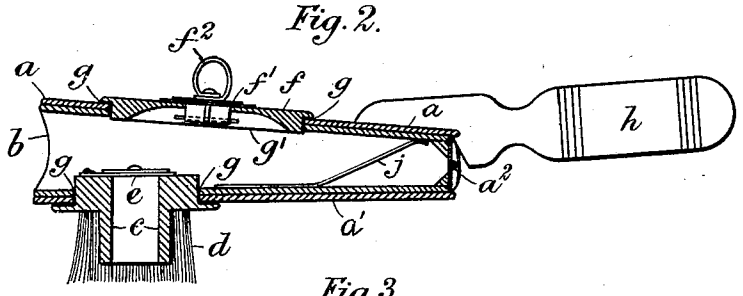
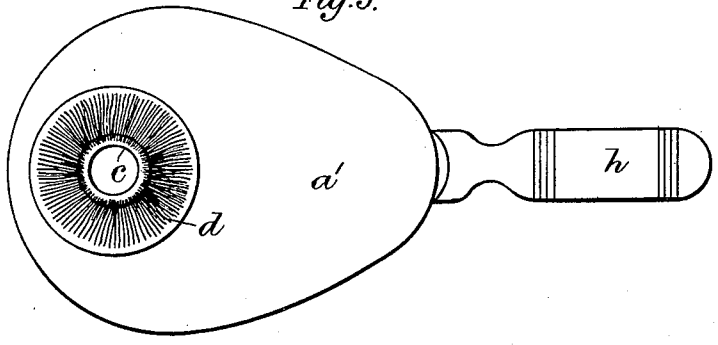


Fig. 3.



Witnesses
E. A. Bullock
A. M. Parkins.

Inventor
Charles James Harvey
By his Attorneys
Baldwin, Davidson & Wright

No. 673,603. Patented May 7, 1901.

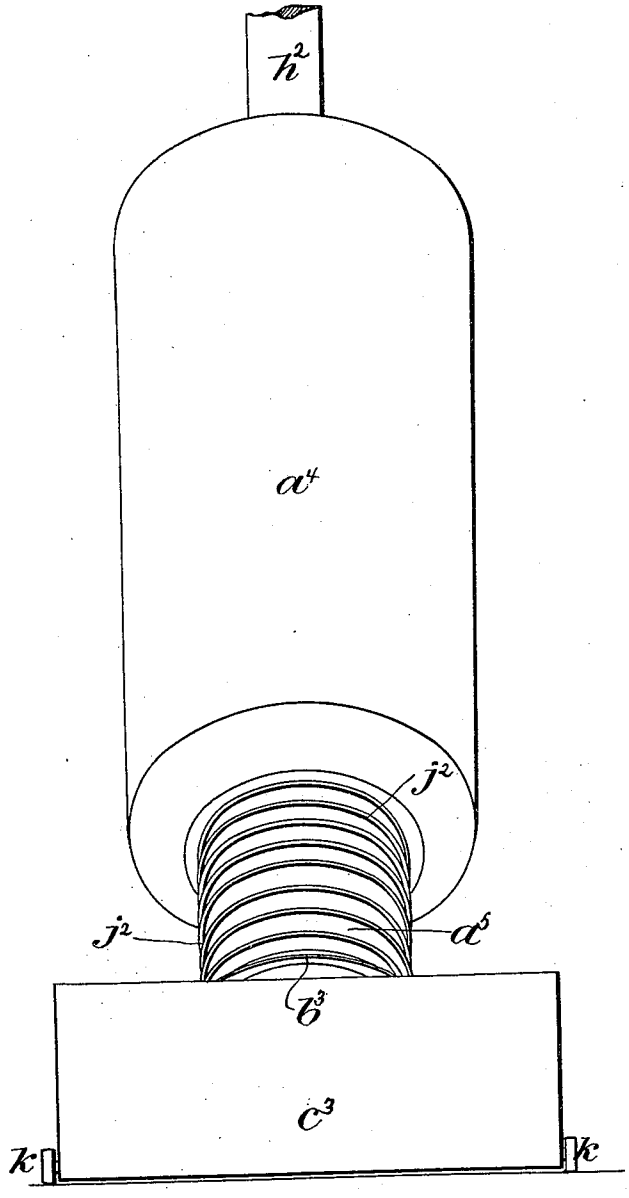
C. J. HARVEY.

DUSTING AND SWEEPING APPARATUS.

(Application filed July 30, 1900.)

(No Model.) 3 Sheets—Sheet 2.

Fig. 4.



Witnesses.
E. A. Bullock.
A. M. Parkins.

Inventor.
Charles James Harvey
By his Attorneys,
Baldwin Davidson & Wright

No. 673,603. Patented May 7, 1901.

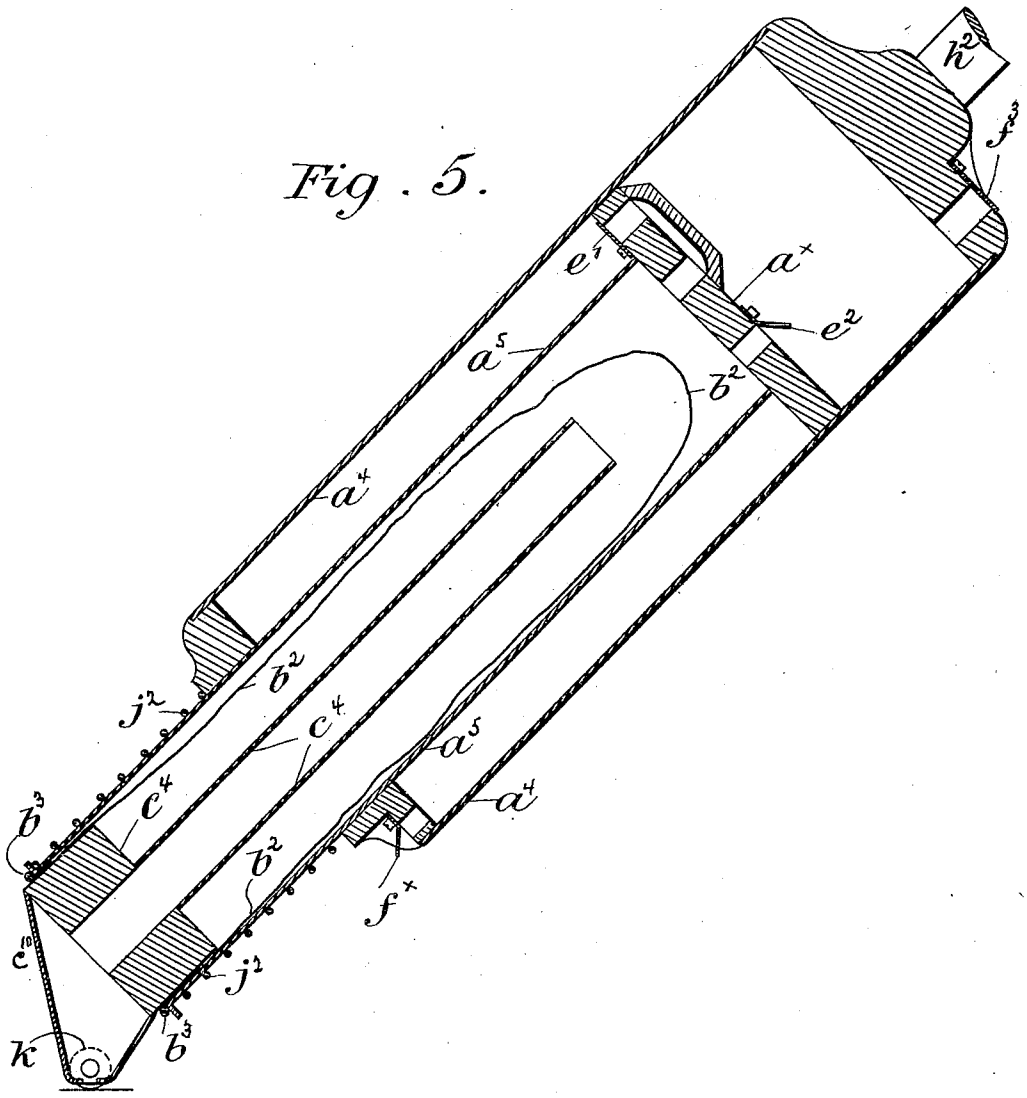
C. J. HARVEY.

DUSTING AND SWEEPING APPARATUS.

(Application filed July 30, 1900.)

(No Model.) 3 Sheets—Sheet 3.

Fig. 5.



Witnesses.
E. A. Bullock.
A. M. Parkins.

Inventor.
Charles James Harvey
By his Attorneys
Baldwin, Davidson & Wright.

UNITED STATES PATENT OFFICE.

CHARLES J. HARVEY, OF KIDDERMINSTER, ENGLAND.

DUSTING AND SWEEPING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 673,603, dated May 7, 1901.

Application filed July 30, 1900. Serial No. 25,299. (No model.)

To all whom it may concern:

Be it known that I, CHARLES JAMES HARVEY, gentleman, a subject of the Queen of Great Britain, residing at The Grove, Kidderminster, in the county of Worcester, England, have invented certain new and useful Dusting and Sweeping Apparatus, of which the following is a specification.

In the specification of a former patent, No. 577,854, the combination of a brush with a pump is described, the apparatus being so arranged that the dust disturbed by the brush is sucked into a receptacle.

According to the present invention I actuate a pump by the actions of applying and removing the apparatus to and from the articles to be dusted, and I mount the nozzle or duster on the movable part of the pump, which may be single or double acting, while the stationary part of the pump serves as a handle or has a handle fixed to it. Dust and air are sucked into the pump, the dust being retained in a receptacle, from which the air passes through porous material of which it is wholly or partly composed.

Figure 1 of the drawings annexed is a side elevation of a light dusting-brush made according to this invention, the pump being single-acting. Fig. 2 is a section, and Fig. 3 an under side view. Figs. 4 and 5 are an elevation and section of a modification suitable for sweeping in which the pump is double-acting.

In Figs. 1 to 3, $a\,a'$ are the stationary and movable parts, respectively, of a pump or bellows hinged together at a^2 and connected by flexible porous material b. c is a nozzle fitting an aperture in the board a' and surrounded by a brush d. At the inner end of the nozzle c is a flap-valve e. The air may pass out through the material b, or, if this is not porous, through a valve f' in a stopper f, fitting an aperture in the part a. Dust is prevented from passing out through this valve by a porous diaphragm g'. The stopper f can be readily removed by means of the handle f^2 to enable the dust collected to be emptied out. In order to make the nozzle c and stopper f fit air-tight, a ring g, of india-rubber, is provided around the apertures in a and a'. h is a handle, and j a spring tending to force apart the parts a and a'. The act of placing the brush on an article to be dusted closes the bellows, the air contained therein passing out through the flexible sides b or through the valve f', and as the brush is lifted the spring j, aided in some positions by the weight of the part a', separates the two parts a and a', and air is sucked in through the nozzle c, and with it the dust disturbed by the brush d.

Figs. 4 and 5 show an apparatus more suitable for removing dust from large flat surfaces. a^4 is a pump-cylinder attached to a handle h^2 and provided with air-outlet valves $f^3\,f^\times$. a^5 is a hollow plunger carrying an elongated nozzle c^3, fixed to it by means of a bung c^4 on it fitting into the mouth of the plunger and holding between it and the plunger a bag b^2, of porous material, the mouth of which is secured to a metal ring b^3. The bung c^4 carries a tube c^5, projecting up into the bag b^2. The upper end of the plunger is closed by a piston $a^\times$, fitting the cylinder a^4 and carrying two valves $e^2\,e'$, leading to the upper and lower ends of the cylinder, respectively. j^2 is a spring tending to force the cylinder and plunger apart. k represents small wheels on the nozzle c^{10} to facilitate its movement.

The action is as follows: As the apparatus is placed on the surface to be swept the plunger a^5 is pushed into the cylinder, the valves $f^\times$ and e^2 close, and air is drawn into the lower part of the cylinder a^4 through the nozzle and the valve e'. As the apparatus is raised the plunger recedes from the cylinder, owing to its weight and the pressure of the spring j^2, and the valves f^3 and e' close and $f^\times$ and e^2 open, air now being drawn into the upper part of the cylinder through the nozzle and the valve e^2.

What I claim is—

1. The combination of a pump having a stationary and a movable member, a handle attached to the stationary member, a nozzle carried by the movable member, a valved entrance-port through the nozzle, and a porous dust-receptacle in communication with the nozzle.

2. The combination of a pump, a handle attached to the stationary part thereof, a nozzle carried by the movable part thereof, a brush adjacent to the nozzle, and a porous dust-receptacle in communication with the nozzle.

CHARLES J. HARVEY.

Witnesses:
JAMES J. HARVEY,
F. C. JOTTMAN.