

April 29, 1941.

G. W. MOYER

2,240,005

WALL CLEANING ATTACHMENT

Filed Aug. 15, 1938

2 Sheets-Sheet 1

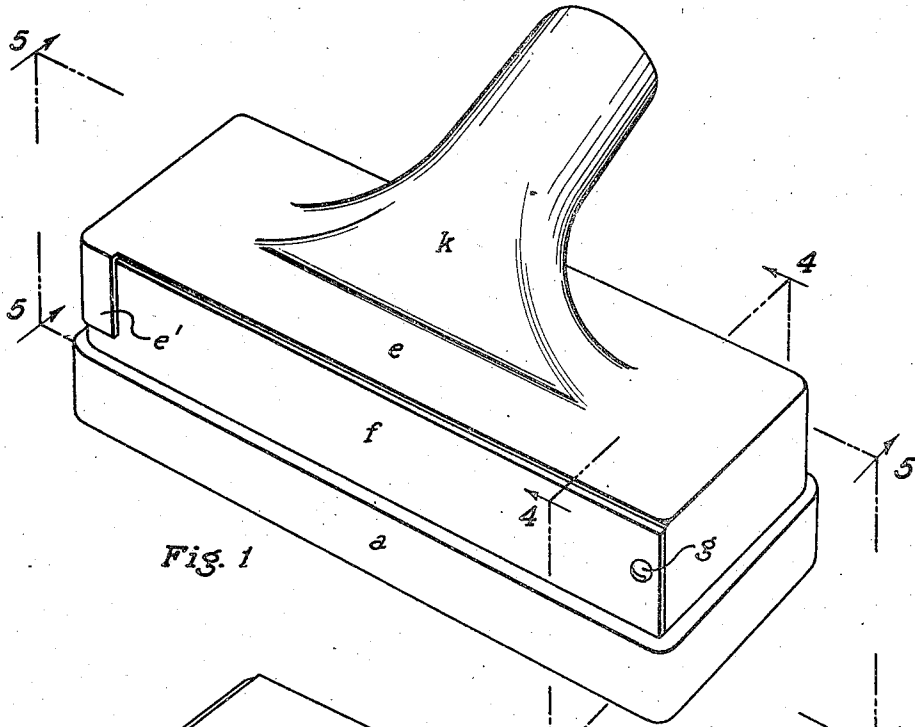


Fig. 1

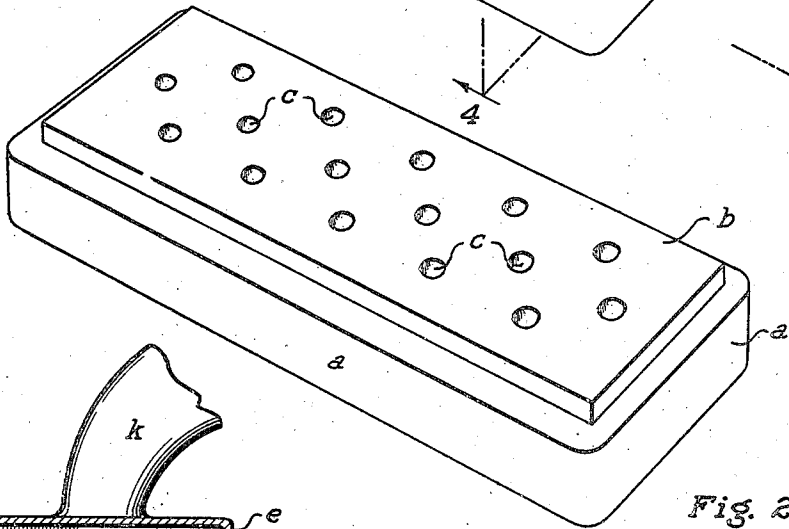


Fig. 2

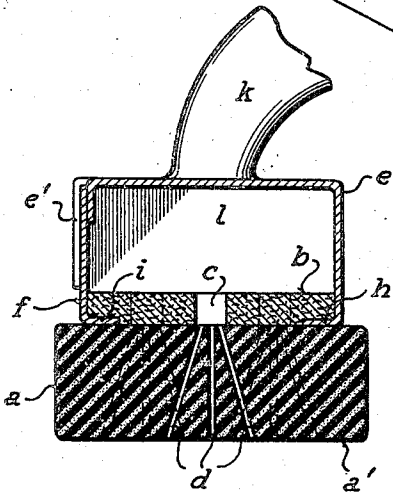


Fig. 4

Inventor
George W. Moyer
By T. J. Gesler,
and H. Gesler,
Attorneys

April 29, 1941.

G. W. MOYER

2,240,005

WALL CLEANING ATTACHMENT

Filed Aug. 15, 1938

2 Sheets-Sheet 2

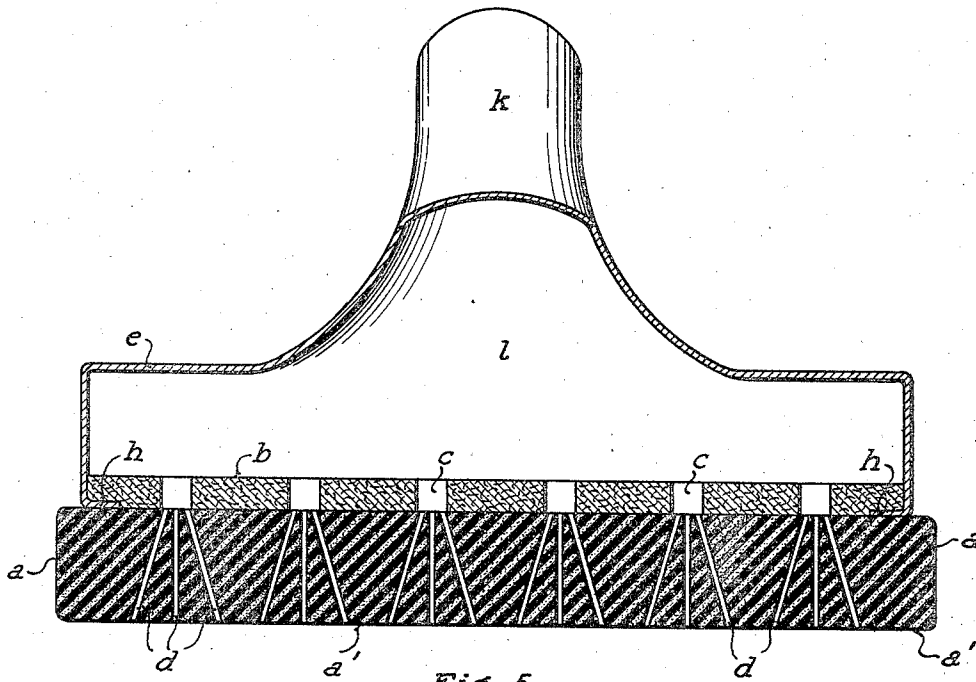


Fig. 5

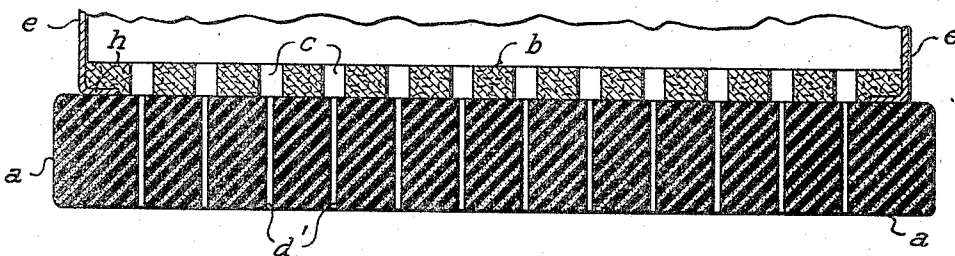


Fig. 6

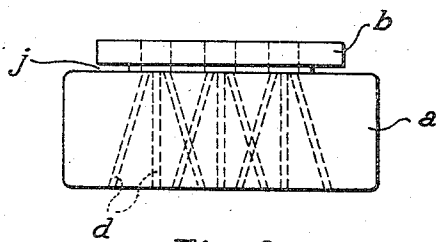


Fig. 3

Inventor
George W. Moyer
By T. J. Geisler
and P. Geisler
Attorneys

UNITED STATES PATENT OFFICE

2,240,005

WALL CLEANING ATTACHMENT

George W. Moyer, Portland, Oreg.

Application August 15, 1938, Serial No. 224,847

1 Claim. (Cl. 15—155)

My invention has for its object the cleaning of kalsomined, or papered surfaces, such as interior walls and ceilings.

Various methods of removing dry dirt and dust from interior wall surfaces have been tried, such as wiping the surfaces with dry cloths, or other fabricated substances to which the fine dust particles removed from the wall will cling. These means have, however, not been satisfactory, since they either removed only part of the dirt, leaving the walls streaked and smeary, or, at best, cause a considerable portion of the collected particles of dirt to drop down on the floor and thus require cleaning of the floor. It has also been tried to remove the dirt by suction, for example, with an ordinary vacuum cleaner; but the devices heretofore employed have not been satisfactory, because mere air-suction imposed over the dust is not sufficient; the dust particles must first be loosened from the wall surface so that the induced suction may seize them and carry them off and the suction applying means must be adapted to perform its work efficiently.

I attain my object by an implement attachable to a suction producing device, for example, a so-called "vacuum cleaner." My attachment comprises a hollow head to which is affixed a cleaning pad of soft sponge-like material, for example sponge rubber, of substantial thickness. The cleaning pad is affixed to a rigid back by which the pad is firmly secured in the open face of the head. Air ducts extend from the exterior face of, and thru the pad and its back. The securing of the pad by its back to the head so that the body of the pad is located entirely outside of the head is an essential feature of my invention. This arrangement prevents any compression of the pad-body longitudinally, and thus prevents compression of its air ducts, as would result if inserted in the head of my attachment. It is essential that the air ducts of the pad be kept fully open, otherwise the device will not work efficiently; for the pulling of the dust wiped off the wall surface thru the pad and into the head, and thence to the dust-bag of the vacuum cleaner element can only be effectively accomplished by providing the cleaning pad with air ducts of predetermined, ample diameter, and assuring that all of them will remain fully open in the use of the cleaning attachment. If in the use of my attachment the air ducts of the cleaning pad are in part closed, the portion of the pad in which such closing occurs is incapable of pulling the loosened dust off the wall surface and streaks of dust not removed would inevitably result.

The discontinuous wall sections of the cells lying in the working face of the sponge-like pad of my attachment function similarly to the interwoven threads of a wiping cloth. The pad first loosens the dust, and the dust loosened is then removed from the wall surface by the suction induced in my attachment. A series of sponge-like pads may be provided, which may be interchangeably used in the head, according to the character of the wall-cleaning work to be done.

In order to do the cleaning of the wall surface well all areas should be gone over several times, similarly as a painter would go over the same surfaces to assure an even application of paint.

Further details of my invention are herein-after described with reference to the accompanying drawings in which,

Fig. 1 is a perspective assembly view of my implement;

Fig. 2 is a perspective view of the abrasive pad or member removed from the head in which held;

Fig. 3 is a diagrammatic end elevation of the said abrasive member;

Fig. 4 is a transverse section taken on the plane designated 4, 4, 4 in Fig. 1;

Fig. 5 is a longitudinal section taken on the plane designated 5, 5, 5 in Fig. 1; and

Fig. 6 is a similar section as Fig. 5, showing a different arrangement of the air-ducts of the abrasive pad than shown in Fig. 5.

A hollow head *e* is adapted to have removably secured therein a pad of soft sponge-like material *a*, of substantial thickness for which I preferably use sponge rubber. The pad *a* is provided with a stiff back *b* made of heavy canvas, leather, or other material found suitable so as to give the pad sufficient firmness, and provide the means for fastening the pad to the head and so that the body of the pad will be located outside the head. The back of the pad is provided with symmetrically arranged air ducts *c* which, as indicated by *d*, extend through the pad to its working face *a'*. The head *e* is adapted to provide an air-chamber *l*, and the air ducts *c* of the back *b*, and of the pad *a* (*d* or *d'*) must be arranged so as to connect substantially the entire area of the working face *a'* of the pad with the air-chamber *l* of the head. The air-ducts of the pad may be arranged as shown by *d* in Fig. 5, or as shown by *d'* in Fig. 6. The air-ducts should be spaced slightly from the sides of the pad so as to leave firm marginal portions on all sides of the pad as shown by Figures 5 and 6. The

discontinuous wall sections of the cells lying in the working face *a'* of the pad *a* function similarly to the interwoven threads of a wiping cloth; that is, they loosen the dust so that the same may be removed by suction.

It is understood that a suitable suction producing apparatus such, for example, as provided in the common vacuum cleaner is to be attached to the neck *k* of the head *e*.

The number of air-ducts, as *d* or *d'*, provided in the pad *a*, and the required internal diameter of said air-ducts may be varied as deemed most efficient for work on the wall surface to be cleaned. It is essential that the air ducts, *d* or *d'*, be arranged sufficiently close together so as to assure that the particles of dust as dislodged from the wall surface by the pad *a* will be drawn through the air-ducts into the air-chamber *l*, and thus removed by the suction providing means attached to the head *e*.

I have found it best to provide several pads as *a*, which may be interchangeably secured in the head *e*; and in that way the number of air-ducts provided in the pads respectively, and the internal diameter of the air-ducts may be so designed as to accomplish the most efficient cleaning of particular wall surface.

The head *e* is preferably made of metal. This head may be made in the form of a box-like structure open along one side, and the bottom as seen in Fig. 4, and having a detachable side cover-plate *f*. This cover-plate *f* is held in place at one end by a lip *e'* integral with the head *e*, and at the other end by a screw *g* threaded into an intumed wall portion of the head. The lower wall portions of the head *e* are bent inward as at *h*, Figures 4, 5, and 6, to form a peripheral flange, and the cover-plate *f* has a similar flange *i* (see Fig. 4). When the cleaning pad *a* is fastened to the head *e*, the flanges *h* and *i* engage a peripheral groove *j* (see Fig. 3) provided in the edges of the stiff back *b* of the pad *a* and hold the pad firmly in place, with the body of the pad located entirely on the outside of the

head, thus avoiding any compression and contraction of the air ducts extending thru the pad body. Removal of the cover-plate *f* permits the back of the pad *a* to be slid out of the head *e*.

In use, the fixture *k* is connected by a hose to suitable means for creating suction, and the pad *a* is moved with a rubbing action over the surface of the wall or ceiling to be cleaned. The pad *a* loosens the dust film from the wall surface, and the suction produced in the chamber *l* of the head then draws the dust particles through the air-ducts of the pad and its back into the chamber *l*, and thence through the hose connection to a suitable dust bag or receiver common to ordinary vacuum cleaners.

The foregoing description of my invention merely describes details in construction which I found convenient, but it is to be understood that I do not limit myself to any particular detail except as essential to the principle of my invention.

I claim:

A wall-cleaning attachment comprising, a hollow head constituting a suction chamber, said head being connectable to a vacuum inducing means, and having an open face, a sponge-like resilient brushing pad of substantial thickness and having a plane outer face, a rigid back piece to which said pad is firmly attached, said back adapted to be inserted in and providing a substantially air-tight closure for said open face of the head, said pad and its said back provided with concentric, continuous suction ducts of substantial cross section constituting clear, constantly open dust passageways extending through said pad and its back and into said open suction chamber, and means for fastening said back in said head with the pad located entirely exterior the head, said fastening means consisting of holding flanges provided on the interior of the sides of the head, one of said sides being removable, and grooves adapted to receive said holding flanges provided on the perimeter of said back.

GEORGE W. MOYER.