May 29, 1951 C. E. MEYERHOEFER 2,555,199

VACUUM CLEANER ATTACHMENT

Filed June 4, 1948

Fig. 1

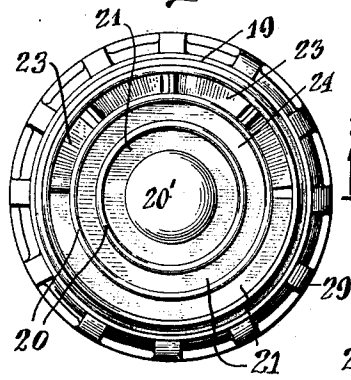



Fig. 2

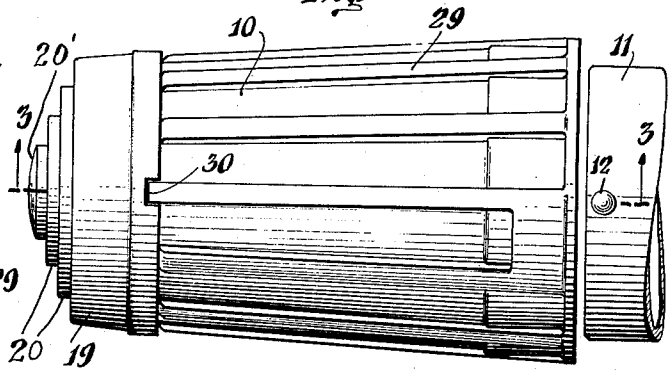



Fig. 3

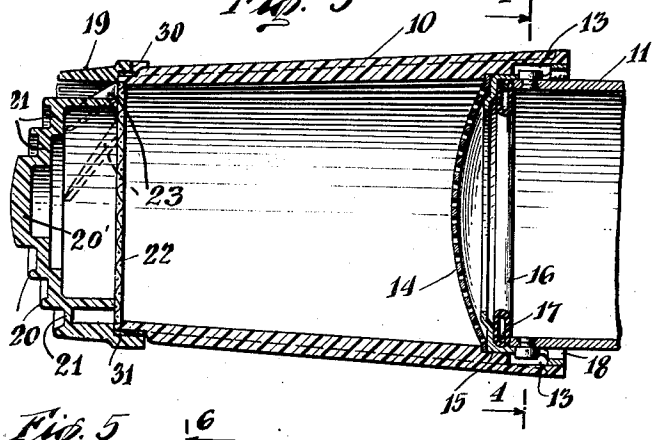



Fig. 4

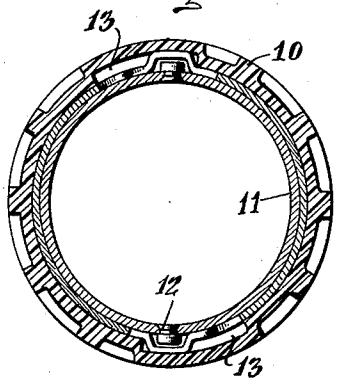



Fig. 5

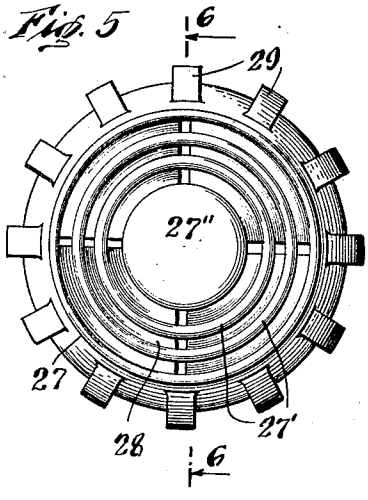
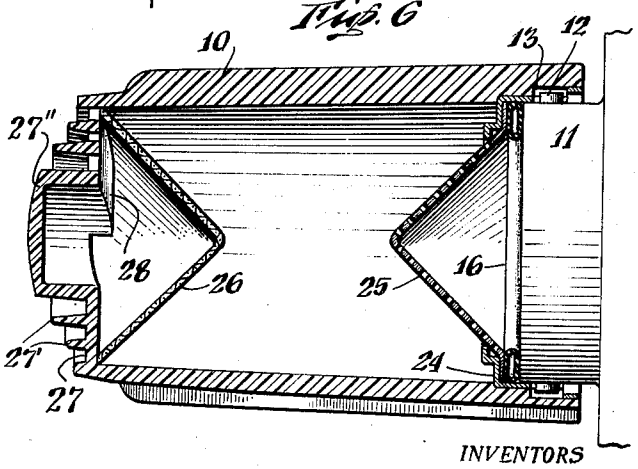



Fig. 6




INVENTORS

Carl E. Meyerhoefer

BY Darnell and Kane

ATTORNEYS

Patented May 29, 1951 2,555,199

# UNITED STATES PATENT OFFICE

2,555,199

## VACUUM CLEANER ATTACHMENT

Carl E. Meyerhoefer, Brooklyn, N. Y., assignor to Lewyt Corporation, Brooklyn, N. Y., a corporation of New York

Application June 4, 1948, Serial No. 31,190

3 Claims. (Cl. 21—127)

1

This invention relates to a novel attachment especially adapted for use with vacuum cleaners and similar apparatus and by means of which demothing and fumigating operations may be accomplished.

It is an object of the invention to furnish a unit of this character which will be attractive in appearance and of compact structure despite the fact that it may contain a substantial quantity of material such as is employed for fumigating and demothing purposes.

A further object is that of providing a device which may readily be associated with and detached from a vacuum cleaner or similar apparatus and which, moreover—in the hands of even an inexperienced operator—may readily be filled with a proper amount of substance and have its parts disposed in operative association so that the desired treatment may be proceeded with.

Another object is that of furnishing a demothing and fumigating attachment which will retain its contained substance against wastage and spillage. Additionally, the substance will at all times be maintained in a condition where a maximum transfer occurs between it and the air flowing through the body of the attachment so that major efficiency of operation is assured.

Still another object is that of furnishing a device of this character which will embody relatively few parts each individually simple and rugged in construction; such parts being capable of ready manufacture by economical methods and when so manufactured being assembled to furnish a unitary apparatus operating over long periods of time with freedom from all difficulties.

With these and other objects in mind, reference is had to the attached sheet of drawings illustrating practical embodiments of the invention and in which:

Fig. 1 is an end view of one form of attachment;

Fig. 2 is a side elevation thereof;

Fig. 3 is a longitudinal sectional view taken along the lines 3—3 and in the direction of the arrows as indicated in Fig. 2;

Fig. 4 is a transverse sectional view taken along the lines 4—4 and in the direction of the arrows as indicated in Fig. 3;

Fig. 5 is a view similar to Fig. 1, but illustrating an alternative form of apparatus; and

Fig. 6 is a longitudinal sectional view taken along the lines 6—6 and in the direction of the arrows as indicated in Fig. 5.

In this application Figs. 5 and 6 illustrate

2

structures shown in the prior application for United States Letters Patent in the name of Alex M. Lewyt and Carl E. Meyerhoefer for "Vacuum Cleaner," now identified as Patent Number 2,516,707.

In the several views, the numeral 10 indicates the body of the device which, according to the present teachings, is preferably tapered throughout its length with its outer end presenting a minimum diameter. This body and certain other parts of the attachment may conveniently be formed of plastic. Again conveniently such plastic will be of a transparent character so that the amount of material within the body may be observed. The body is adapted for association with the intake 11 of a suction-producing apparatus (not shown). This inlet or collar is furnished with a pair of pins or projections 12 which are capable of extension into the recesses 13 formed in the inner space of the body proper and adjacent the enlarged end of the same. Thus, the body may be mounted as a unit rigid with respect to the main apparatus and requires no further attention other than at the time it is to be dismounted.

Adjacent its inner or enlarged end portion, the body 10 represents an internal flange functioning as a seat for a perforated disc 14 which is bulged inwardly. A bezel or flange member 15 is suitably secured to the inner face of the body and bears against the disc 14 to maintain the latter in position. A rubber ring 16 may seat in this member and be maintained in position by an expanding or reenforcing element 17. This ring acts as a stop and seal intervening the edge of the intake element 11 and the face of the collar or bezel 15. The latter is formed with slots or grooves 18 of right angular configuration to furnish bayonet slots. These portions lie in line with the recess 13. Therefore a coupling is furnished suitable for cooperation with the projections or pins 12 and by means of which the attachment may be readily mounted and dismounted with respect to the remainder of the apparatus.

The opposite end of body 10 is closed by a cap having a generally ring-shaped outer wall or flange 19. This cap presents in its outer face a series of concentrically disposed rings 20 and a central portion 20'. These parts are connected by transversely extending webs 21. A mesh 22 is mounted by the cap adjacent its inner edge and is especially shown in Fig. 3. Also as shown in this figure, the uppermost web portion 21 intervening the outer ring 19 and the next adjacent

ring is removed so that—as in Fig. 1—an arcuate opening is furnished. Extending within this opening are baffles 23 which are mounted to define tangential ports.

In the form of construction shown in Figs. 5 and 6, the bezel 24 is a slightly modified design and capable of removal from the body 10. It serves to retain and support a perforated member 25 preferably of metal which is of conical configuration rather than merely bulged inwardly as in the case of the plate 14. A conical member 26 of mesh or other suitable material is disposed adjacent the outer or small end of body 10. In turn, beyond the member 26, is a cap portion 27 which is preferably integral with body 10.

This cap portion is formed with a series of concentrically disposed and spaced rings 27′ and a central portion 27″. To the rear of these rings a cap portion has a series of inwardly extending baffles 28. The inner ends of each baffle are spaced to an adequate extent from the outer end of an adjacent baffle. Therefore tangentially extending air passages are provided at the outer end of the unit. As a consequence of the central portion and ribs it is apparent that the air flow will be divided or broken up in both the illustrated structures. The air entering to one side of the center through the tangentially extending air passages has imparted to it a whirling motion causing any mass of material within the body of the unit to be agitated.

In both forms of the apparatus, the tapered bore of the body serves to assure against compacting of the crystals or other substances placed within its interior. In the forms shown in Figs. 1 to 4, a proper friction fit is assured as a consequence of this structure between the body 10 and the cap at the outer end of the same. Also in both forms the inner perforate members 14 and 25 are retained against movement unless—as in the case of Figs. 5 and 6—a deliberate manual manipulation of the part is resorted to in order to gain access to the interior of the body. The exterior of the body in both instances preferably presents longitudinally extending ribs 29. These conveniently provide grasping portions such that the attachment may be readily gripped and rotated when desired. Also, as in Fig. 2, one of these ribs may be somewhat extended to project into a recess 30 formed in the edge of ring 19. This will serve as a centering provision and serve to indicate when the parts are in proper position with respect to each other.

In both forms of apparatus it will be understood that an operator primarily fills the interior of body 10 to a suitable extent with proper crystals or other material. This is achieved in the form of apparatus shown in Figs. 1 to 4 by removing the outer cap, placing the substance within the body and thereupon reapplying the cap. A proper fit between the cap and body is at all times assured by having the inner face of the former provided with ribs 31. These—as shown—are preferably integral with the cap and tapered. Therefore, even if a shrinkage of the assembly occurs due to atmospheric conditions, a proper fit will be assured between these ribs and the adjacent surface of the body which extends parallel to the axis of the same.

In the form of apparatus shown in Fig. 6, access to the interior of the body is assured by removing the ring 16 and the member 25. After a filling of the body, these parts are again placed in position. The attachment is now mounted



on the suction-producing apparatus and the latter is operated. Under these circumstances, air will rush inwardly through the body 10 through the openings in the cap. These openings and their adjacent vanes or deflector portions will assure that the air has imparted to it a rapid, whirling motion. This will provide not alone a maximum exchange relationship between the air and the material within the body, but will also cause that material to be constantly agitated so that it will not compact. Moreover, such compacting will be avoided due to the tapered configuration of the interior of the body. Therefore, air laden with fumes to a maximum extent will flow through the perforation of plates 14 or 25 and so into the suction-producing apparatus by means of which it will be properly distributed.

Thus, among others, the several objects of the invention as specifically aforenoted are achieved. Obviously numerous changes in construction and rearrangement of the parts might be resorted to without departing from the spirit of the invention as defined by the claims.

I claim:

1. A unit of the type described including in combination a tubular body having an outer and an inner end, the bore of said body providing a space to receive solid material which volatizes under contact with air flowing past its surfaces, a member disposed transversely of and adjacent the outer body end, a central imperforate portion forming a part of said member, baffles disposed between said central portion and the outer edge of said member and defining curved passageways extending from the outer end of said body towards the space receiving the solid material and means adjacent the inner end of said body providing one part of a quick detachable coupling so that said unit may be supported by its inner end through a coupling extending from the body of a vacuum cleaner.

2. A unit of the type described including in combination a tubular body having an outer and an inner end, the bore of said body providing a space to receive solid material which volatizes under contact with air flowing past its surfaces, a member disposed transversely of and adjacent the outer body end, a central imperforate portion forming a part of said member, baffles disposed between said central portion and the outer edge of said member and defining curved passageways extending from the outer end of said body towards the space receiving the solid material, means adjacent the inner end of said body providing one part of a quick detachable coupling so that said unit may be supported by its inner end through a coupling extending from the body of a vacuum cleaner and the bore of said body being flared in a direction from said member towards the inner body end.

3. A unit of the type described including in combination a tubular body having an outer and an inner end, the bore of said body providing a space to receive solid material which volatizes under contact with air flowing past its surfaces, a member disposed transversely of and adjacent the outer body end, a central imperforate portion forming a part of said member, baffles disposed between said central portion and the outer edge of said member and defining curved passageways extending from the outer end of said body towards the space receiving the solid material, means adjacent the inner end of said body providing one part of a quick detachable coupling so that said unit may be supported by its inner

end through a coupling extending from the body of a vacuum cleaner, the bore of said body being flared in a direction from said member towards the inner body end and spaced perforate members extending across the bore of said body at points adjacent the opposite ends of the same to define between them the space for the solid material.

CARL E. MEYERHOEFER.


## REFERENCES CITED

The following references are of record in the file of this patent:



UNITED STATES PATENTS

| Number | Name | Date |
|---|---|---|
| 947,726 | Zimmer | Jan. 25, 1910 |
| 1,841,587 | Finn | Jan. 19, 1932 |
| 1,854,458 | Quincy et al. | Apr. 19, 1932 |
| 1,891,256 | Bilde | Dec. 20, 1932 |
| 1,911,669 | Berndsen et al. | May 30, 1933 |
| 2,085,244 | White | July 30, 1944 |
| 2,095,066 | Eriksson-Jones | Oct. 5, 1937 |
| 2,248,610 | Clements | July 8, 1941 |
| 2,311,155 | Carr | Feb. 16, 1943 |

FOREIGN PATENTS

| Number | Country | Date |
|---|---|---|
| 351,962 | Great Britain | July 1, 1931 |