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BRUSH ATTACHMENT FOR SUCTION CLEANER NOZZLES

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Fig. 1

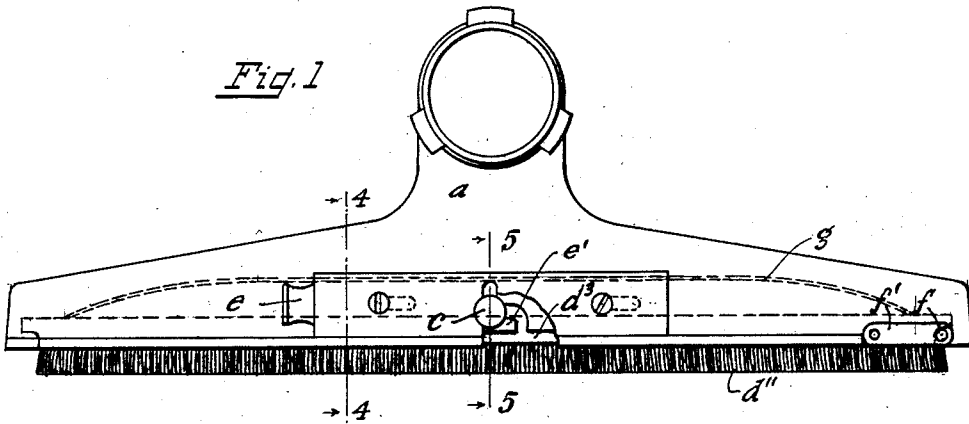


Fig. 2

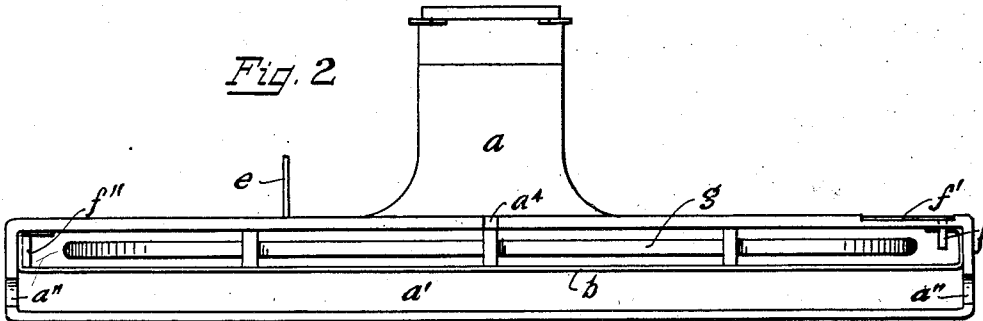


Fig. 3

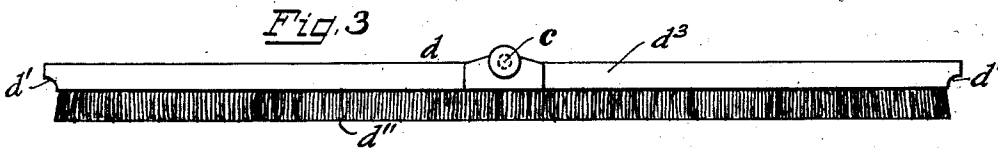


Fig. 4

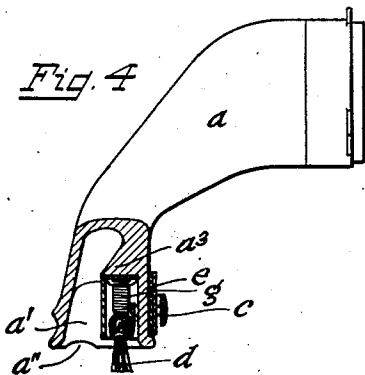
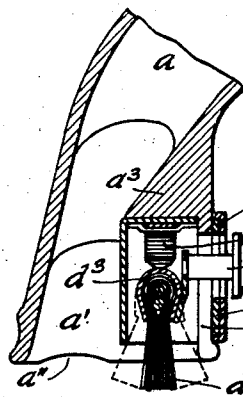


Fig. 5



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UNITED STATES PATENT OFFICE

EUGENE F. MARTINET, OF CLEVELAND, OHIO, ASSIGNOR TO THE P. A. GEIER COMPANY,
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BRUSH ATTACHMENT FOR SUCTION CLEANER NOZZLES

Application filed September 1, 1927. Serial No. 216,849.

My invention relates to improvements in brush attachment for suction cleaner nozzles, and has for its object the provision of a brush attachment which not only will assist materially in removing litter from the cleaned surface, but which possesses the property of measurably clearing itself from adhering litter, as well.

That this is an important feature with devices of this class, will readily be recognized by those conversant with the practical operation of suction cleaners, for the reason that certain classes of litter, such as hair, threads, lint, and the like, cling to the bristles of a brush and gradually impair its efficiency until removed by hand.

I have discovered that a prime reason for the clinging of much of such common floor litter resides in the fact that the brush attachment invariably is presented to the litter in the same plane, and is not afforded much if any movement relative to the suction nozzle and its air currents.

Accordingly, I have provided in the instant improvement, a brush attachment that is afforded considerable vertical movement with respect to the nozzle, as well as a rocking movement, so that a semi-stationary brush within the nozzle is afforded multiple operative positions, and a range of movement to and fro in the normal air currents, which improve the efficiency of the appliance as well as cause the brush to be self-cleaning.

The structural features of said improvement, and the mode of operation may best be explained in connection with the accompanying drawing, wherein:

Figure 1 is a view in rear elevation, partially broken away centrally, of a suction cleaner nozzle equipped with my improvement,

Fig. 2 is an underside plan view thereof with the brush member removed,

Fig. 3 is a view of said brush member in elevation,

Fig. 4 is a side view of the upper nozzle member, sectioned on line 4-4, Fig. 1, and

Fig. 5 is a fragmentary enlarged section on line 5-5, Fig. 1.

Throughout the several figures of the draw-

ing I have employed the same character of reference to indicate similar parts.

My improvements are illustrated as applied to a removable suction cleaner nozzle *a* of approved type, having walls forming a sufficiently large nozzle opening *a'* and notched ends *a''* to accommodate the brush housing *b*, which is practically flush with the thickened rear lip wall *a³* thereof. A vertical slot *a⁴* in the rear lip wall *a³* accommodates the stem of a stud *c* attached to the removable brush *d*, which parts normally are maintained removably in position by means of the slide *e*, co-operating with other brush-detent means to be described.

This brush *d* is loosely mounted for rocking movement in the housing *b* and is provided with notched ends *d'* and longitudinal rows of bristles *d''* maintained within a U-shaped sheet metal casing *d³*. A detent *f* removably held in its extended position (Fig. 2) together with the fixed detent *f''*, engage the notched ends *d'* and normally retain the brush in the housing in the position shown in Figs. 1 and 5 against the tension of the bowed spring *g*. However, said brush is readily removed by retracting the slide *e* and its protruding tongue *e'* to release stud *c*, while spring *f'* is retracted to withdraw detent *f*.

It will be observed that the several parts are so arranged and proportioned that the brush *d* not only has considerable vertical play or floating movement within its housing or casing *b*, to permit its accommodation to the surface being cleaned, by reason of the flexure of the spring *g*, but there is afforded a rocking motion of considerable amplitude as best indicated in Fig. 5. Thus, as shown by the dotted lines, the brush is rocked back and forth with the movement of the nozzle, the rear lip of which forms a rear stop, while the brush casing affords a front stop to limit the movement of the brush. In addition, said brush is of the floating type since the spring tends to depress the brush against the floor covering, while the rear stud has free play in the slotted portion of the nozzle.

It will be understood that the removable nozzle shown is adapted and intended for connection with or upon a portable suction

cleaner device, also of approved type, or any suitable suction producing means, whereby air currents are strongly inducted within the mouth of the nozzle in a well known manner. Moreover, in the ordinary use of a suction cleaner nozzle or tool of the general class illustrated, the mouth of said tool is passed repeatedly back and forth over the surface being cleaned to remove the dirt and litter.

Under these conditions, particularly when the nozzle effects a seal with the napped surface of a rug or carpet, or when the edges of the suction nozzle approximate the surface of the floor being cleaned, a sharp rocking motion will be imparted to my improved loosely mounted brush attachment with each stroke or movement of the tool. This is diagrammatically indicated by the dotted lines, Fig. 5, however, with the brush protruded from the nozzle by its spring. Said brush member is caused to assume different positions with respect to the indrawn air currents, whereby a superior cleaning action is insured. In addition, the brush is automatically cleared of practically all dirt and litter by reason of its abrupt rocking movement within its housing as the air is swept past it with each reverse movement of the nozzle or suction cleaner.

Having now described the preferred embodiment of my invention and its advantages and mode of operation, I claim as new and desire to secure by Letters Patent, the following:

1. The combination with a suction cleaning tool having walls forming an elongated mouth, of a brush-housing positioned therein against one mouth wall completely to narrow the effective mouth of the tool, a floating brush disposed within said housing and mouth, a spring therein tensioned against the brush to press it against the surface being cleaned, and the brush being loosely mounted in the housing for rocking movement within the housing.

2. In combination with a suction cleaning tool provided with walls forming an elongated mouth, a brush-housing carried by one of said walls located within said mouth, a spring-pressed brush mounted for floating movement in said housing, means for retaining the brush in the housing, and the brush being loosely mounted in the housing for rocking movement while floating by contact with a surface upon movement of the cleaning tool over the surface.

3. In combination with a suction cleaning tool provided with walls forming an elongated mouth, a brush-housing carried by one of said walls, a spring-pressed brush mounted for floating movement in said housing, means for removably retaining the brush in the housing, and the brush being loosely mounted in the housing for rocking movement while

floating by contact with a surface upon movement of the cleaning tool over the surface.

4. In combination with a suction cleaning tool provided with walls forming an elongated mouth, a brush-housing carried by one of said walls, a spring-pressed brush mounted for floating movement in said housing, means for retaining the brush in the housing, the brush being loosely mounted in the housing for rocking movement while floating by contact with a surface upon movement of the cleaning tool over the surface, the housing and one of the mouth walls providing front and rear stops alternately engaged by the brush to limit its rocking movement.

5. In combination with a suction cleaning tool provided with lip walls forming an elongated mouth, a brush-housing carried by one of said lip walls located within said mouth, a brush mounted for floating movement in said housing, means for retaining the brush in said housing, the brush being loosely mounted in the housing for rocking movement while floating by contact with a surface upon movement of the cleaning tool over the surface, and the housing and one of said lip walls providing front and rear stops alternately engaged by the brush to limit its rocking movement.

6. In combination with a suction cleaning tool provided with walls forming an elongated mouth, a brush-housing carried by one of said walls, a brush mounted for floating movement in said housing, a spring carried by said housing interposed between the brush and one of the housing walls for pressing the brush in contact with a surface to be cleaned, means for retaining the brush in said housing against the pressure of the spring, the brush being loosely mounted in the housing for rocking movement while floating by contact with the surface upon movement of the cleaning tool over the surface, the housing and one of the mouth walls providing front and rear stops alternately engaged by the brush to limit its rocking movement.

In testimony whereof I do now affix my signature.

EUGENE F. MARTINET.