W. G. TRAUTMAN.

VACUUM CLEANING APPARATUS.

APPLICATION FILED JUNE 10, 1912.

1,153,734. Patented Sept. 14, 1915.

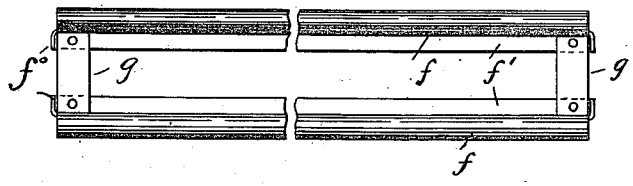


Fig. 2

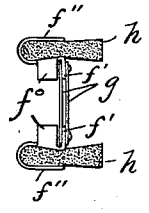


Fig. 3

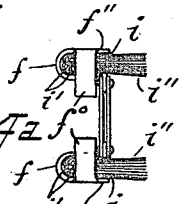


Fig. 4a

Fig. 1

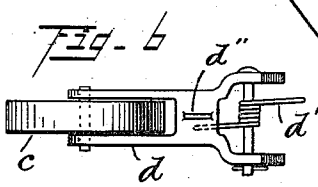


Fig. 6

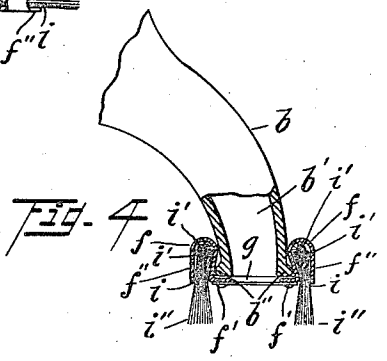


Fig. 4

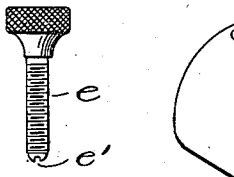


Fig. 7

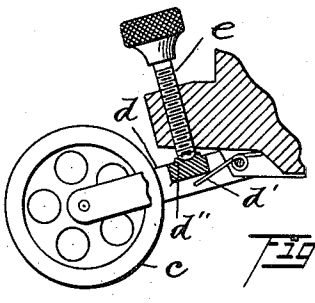


Fig. 5

Witnesses:

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UNITED STATES PATENT OFFICE.

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VACUUM CLEANING APPARATUS.

1,153,734. Specification of Letters Patent. Patented Sept. 14, 1915.

Application filed June 10, 1912. Serial No. 702,916.

To all whom it may concern:

Be it known that I, WALTER G. TRAUTMAN, a subject of the Emperor of Germany, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Vacuum Cleaning Apparatus, of which the following is a specification.

My invention relates to vacuum cleaning apparatus, and has for its object the provision of means for rendering more effective the operation of appliances of this class.

More particularly, my invention relates to an attachable brush-member for the nozzle of a vacuum cleaner, either of the manual or wheeled type. However, since my improvements will be better appreciated as explained in connection with the portable vacuum cleaner having supporting wheels, a cleaning nozzle and an adjustment therefor, I may well describe said invention in connection therewith.

By reason of the different surfaces over which a vacuum cleaner necessarily travels and the different character of dirt or refuse which must be disposed of, it is essential that the cleaning nozzle be provided with a vertical adjustment, and commonly a brush-attachment is requisite in connection therewith, for effective work. In my use of the terms "brush," "brush-member" or "brush-attachment," I refer generally to rubbing, brushing or similar cleaning means, as associated with the vacuum cleaning nozzle. Since the brush-attachments, moreover, must be removed and changed, it has been my aim to provide a simple and durable type of such device, which may be readily placed upon or removed from the cleaning nozzle. The adjusting means preferably used herewith, are such that the nozzle with its attached brush, may be readily elevated or lowered with respect to the character of floor-covering with which the device is used.

Further features of my said invention or improvement will be more readily appreciated by making reference to the accompanying drawing, wherein:—

Figure 1 is a side elevation of a vacuum cleaning device to which my improvements are applied; Fig. 2 is a plan view, centrally broken away, and Fig. 3 an end elevation of a removable brushing or floor-polishing attachment of my invention; Fig. 4 is a fragmentary view, partially in vertical section, showing a vacuum cleaning nozzle with another style of brush-attachment secured thereto; Fig. 4ª is an end view of said brush-attachment; Fig. 5 is a fragmentary detail also in section, illustrating the adjusting means; Fig. 6 is a plan view of the adjustable rear wheel and spring for the vacuum cleaner, and Fig. 7 is a view in elevation of the preferred style of adjusting screw.

Throughout the several figures of the drawings, I have employed the same character of reference, to indicate similar parts.

By referring to Fig. 1 of the drawings, one type of portable vacuum cleaning apparatus may be explained, wherein the casing *a* contains the usual electric motor with its connected fan, and terminates forwardly in the vacuum cleaning nozzle *b*. The casing is mounted upon a rear wheel *c* and two forward wheels *c'*; the former being vertically adjustable on the casing. The wheel *c* is mounted within the pivoted frame *d*, having a spring *d'* which normally forces the central rib *d''* into engagement with the end of the adjusting screw *e*. The end of said screw is grooved at *e'*, and the same is normally engaged by the rib *d''*, to hold the screw in adjusted position.

Referring now to Fig. 4, *b* may be assumed to comprise the nozzle of any vacuum cleaning appliance, either manual for use upon walls or hangings, or of the portable wheeled style, such as shown in Fig. 1. The nozzle *b* has the usual transverse opening *b'*, whose lips *b''* are outwardly flared, substantially as shown. Over the end of said nozzle *b*, there is adapted to be detachably mounted any desired brush-attachment of my invention. This brush-attachment comprises two longitudinal symmetrical stampings *f f*, united at either end by one or more riveted flat springs *g g*. These stampings are inwardly curved at *f'*, in order to engage the lips *b''*, and are formed of sheet metal of sufficiently heavy gage to be outwardly folded back against the felt-strips *h* (Fig. 3) or other desired brush-members, as *i* (Figs. 4 and 4ª). The extremities *f°* of the stampings preferably are bent substantially at right angles therewith, in order to close

the U-shaped brush-receiving channels and form engaging lugs which will bear against the ends of nozzle *b*, and prevent the relative longitudinal movement or displacement of these parts, when the brush-attachment is disposed thereon. By reason of the connecting springs at either end, said brush-attachment is rendered sufficiently flexible along its median line, so that the device may be readily snapped into and out of position upon the nozzle of the vacuum cleaner.

The preferred brush-member comprises two wires *i'*, between which is spirally twisted a layer of bristles *i''* of the desired thickness and grade, as is commonly done in the brush-making art. These spiral brushes are cut to length and inserted within each of the stampings *f*, which are then closed down upon the wires and about the protruding bristles; said bristles thereafter being cut evenly to the desired length as shown in the drawings, and will be found to be firmly secured within the stampings.

From a consideration of the foregoing description, it will be appreciated that any vacuum cleaning nozzle may have the improved brush-member of my invention very readily applied thereto when desired, which will be as easily removed therefrom for using the cleaning nozzle alone. Moreover, by elevating or depressing the rear end of the wheeled type of vacuum cleaner, such as shown in Fig. 1, as by the adjusting screw herein shown, the nozzle with its attached brush-member may be correspondingly depressed and elevated, to suit the conditions under which the vacuum cleaner is to be used. The two lines or rows of bristles, accordingly, may be caused to bear with the desired pressure upon the fabric or material which is being cleaned, and serve to dislodge the dirt, so that it may more readily be sucked up by the cleaning nozzle through its intermediate opening or mouth.

Having now described the preferred embodiment of my invention or improvement, I claim and desire to secure by Letters Patent, the following:—

1. In apparatus of the class described, a brush-attachment, comprising two parallel stampings, brush-members secured in each of said stampings, and connecting spring-members adjacent to the ends thereof spacing said stampings at a distance from each other, substantially as set forth.

2. In apparatus of the class described, the combination with a vacuum cleaning nozzle having outwardly flaring lips thereon, of a brush attachment therefor, comprising two metal stampings substantially the length of said nozzle, brush-members secured within said stampings, and terminal connecting springs spacing said stampings apart in position to register with the nozzle opening and adapting the device to be removably attached to said nozzle, substantially as set forth.

3. In apparatus of the class described, a brush-attachment for suction nozzles, comprising two parallel channeled frames, end-lugs provided thereon, brush-members respectively secured therein, and flat connecting springs resiliently uniting said frames adjacent to their ends, adapted to retain them in their adjusted position for use, substantially as set forth.

4. In apparatus of the class described, a brush-attachment for suction nozzles, comprising two channeled sheet-metal stampings, brush-members secured in each of said stampings; said stampings having overlapping ends to form terminal lugs, and connecting springs secured adjacent to the ends of said stampings for resiliently spacing them at a distance from each other, substantially as set forth.

In testimony whereof, I have affixed my signature in the presence of two witnesses.

WALTER G. TRAUTMAN. [L. S.]

Witnesses:

P. A. GEIER,

ALBERT LYNN LAWRENCE.