Sept. 28, 1926. 1,601,348

G. CLEMENTS

BRUSH FOR VACUUM CLEANERS

Filed June 22, 1925

Fig. 1

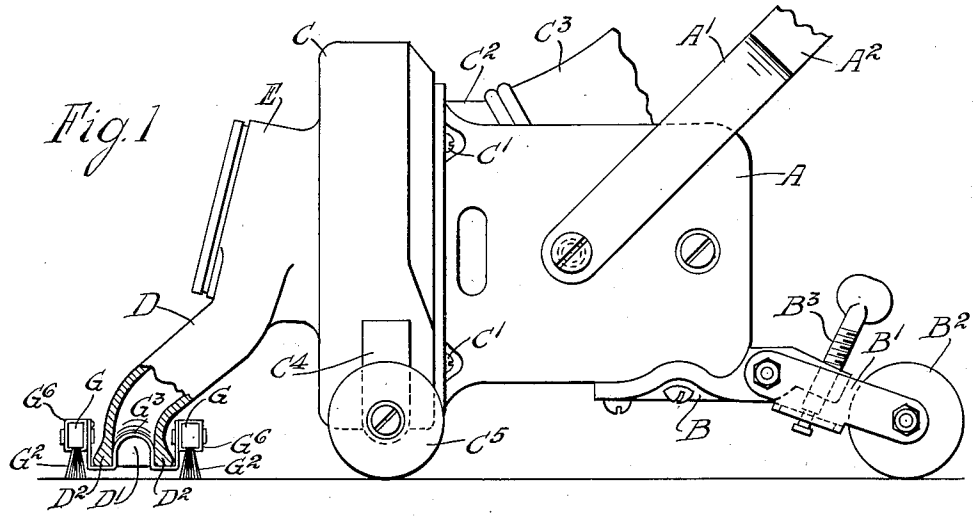


Fig. 2

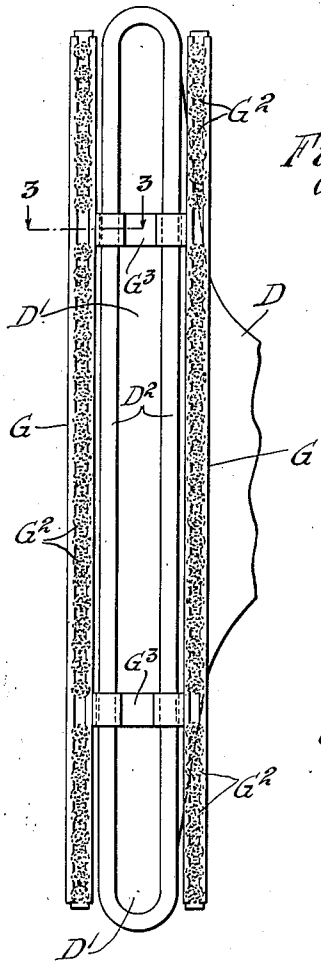


Fig. 3

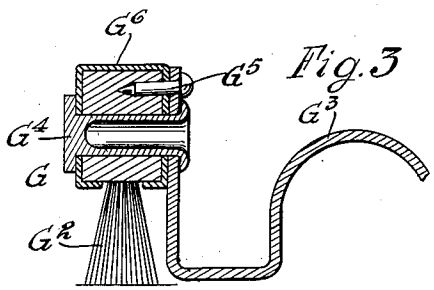
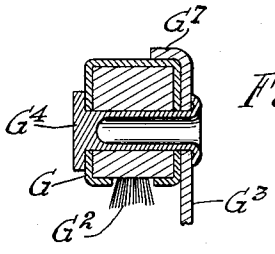


Fig. 4



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UNITED STATES PATENT OFFICE.

GEORGE CLEMENTS, OF CHICAGO, ILLINOIS, ASSIGNOR TO CLEMENTS MFG. CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

BRUSH FOR VACUUM CLEANERS.

Application filed June 22, 1925. Serial No. 38,610.

My invention relates to an improvement in vacuum cleaners and particularly to vacuum cleaner casings or nozzles having fixed brushes attached thereto. One object is the provision of a nozzle, adapted for use with a fixed brush, which is shaped for convenient insertion into corners and beneath overhanging furniture. Another object is the postioning of the brush for maximum convenience of insertion and removal. Other objects will appear from time to time in the course of the specification and claims.

I illustrate my invention more or less diagrammatically in the accompanying drawings wherein—

Figure 1 is a side elevation of the casing with the supplemental suction inlet in place;

Figure 2 is a view from below of the suction nozzle with the brush secured thereto;

Figure 3 is an enlarged section on the line 3—3 of Figure 2; and

Figure 4 is a section similar to Figure 3 of a variant form of attachment.

Like parts are illustrated by like characters throughout the drawings and specification.

A is a motor casing adapted to contain a motor rotatable on a horizontal axis, the axis being substantially perpendicular to the suction nozzle. A^1 is a handle bail and A^2 the handle whereby the vacuum cleaner may be moved across the floor.

B is a bracket supported at the bottom of the rear of the motor casing A. Pivoted to it is the roller supporting lever B^1 to the opposite end of which is rotatably secured the supporting roller B^2. B^3 is an adjusting screw adapted to adjust the height of the roller B^2 in relation to the motor casing.

C is a fan casing to which the motor casing is secured, for example by the screws C^1. C^2 is a peripheral exhaust outlet to which is secured the dust bag C^3. C^4 is any suitable bracket toward the bottom of the fan casing upon which is rotatably mounted the fixed supporting roller C^5, it being understood that there is a bracket and a roller at either side of the bottom of the fan casing.

D is a suction inlet terminating in an extended suction nozzle D^1 with the slightly expanded lips D^2. It will be noted that the lower or floor engaging nozzle portion D^1 is widely extended as compared to the relatively narrow inlet portion D, the widely extended portion being closely adjacent the floor.

The suction inlet D extends from the nozzle to a substantially cylindrical projection E from the center of the fan casing, the axis of the said projection E being upwardly inclined in relation to the horizontal axis of the motor and fan casings.

G G are a pair of brush elements, each of which is formed of a strip of wood or any other suitable material into which are set a plurality of bristle groups G^2. The two brush elements are joined together by the arcuate spring yokes G^3, the arcuate portions of which are adapted to be compressed between the lips D^2 of the nozzle D. G^6 is a metal sheath for the brush body. The arcuate spring yokes are secured to the brush elements G, for example by the hollow rivets G^4 and rotation of the yokes in relation to the spring elements is prevented by the additional pins or securing means G^5.

In Figure 4 I substitute for the pins G^5 an overturned flange G^7 at the end of the clip G^3 which effectually prevents rotation of the clip in relation to the brush, by closely engaging the edge of the brush body.

The use and operation of my invention are as follows:

I provide a vacuum cleaner casing comprising the usual three elements, inlet nozzle, fan casing and motor casing. I project the inlet nozzle substantially forwardly from the fan casing, of which it is, however, an integral part. The fan casing and suction nozzle form preferably, but not necessarily, a unit casting. I mount supporting rollers beneath the fan casing and an adjustable rear supporting roller beneath the motor. The nozzle projects substantially forwardly from both fan casing and roller supports and the ends of the nozzle project laterally far beyond the rollers and the casing. The resultant nozzle is formed and positioned for easy insertion into the very corners of a room and may easily be passed beneath furniture. The relative position of the inlet nozzle, the fixed fan casing rollers and the adjustable rear roller is such that a relatively small movement of the rear adjustable roller is sufficient to effect a substantial upward or downward movement of the suction nozzle.

The brush is held in position by the arch spring G^8 which is of such size and shape as to press outwardly against the opposed lips D^2 of the inlet D^1. The brush bodies

G of wood or fiber may be surrounded by a metal casing and the springs G^3 are gripped to and through brush body and casing, for example by the eyelets G^4. Since I use two of the arched supporting springs, and since the brush is likely to be tilted or rotated about the one or the other of the two springs, I provide a supplemental fastening G^5 to hold the spring arches against rotation about the securing eyelets.

I claim:

1. In combination with a vacuum cleaner having a comparatively open elongate suction nozzle, a detachable brush comprising a pair of narrow brush bodies adapted to be positioned one in front of the forward lip of the nozzle, and one to the rear of the rearward lip of the nozzle, a plurality of gripping members joining the two brush bodies, each such member comprising in part an arcuate spring portion adapted to penetrate the interior of the suction inlet, and to be compressed between the opposed walls of the inlet, and to direct a gripping pressure outwardly thereagainst, and means for preventing the rotation of said spring portions in relation to said brush bodies.

2. The combination with a vacuum cleaner casing having a narrow, laterally extended suction nozzle, of a brush, adapted to be secured to such nozzle, securing means therefor, comprising springs formed and adapted to penetrate the interior of the suction inlet, and to be compressed between the opposed walls of the inlet and to direct a gripping pressure outwardly thereagainst.

Signed at Chicago, county of Cook and State of Illinois, this 16th day of June, 1925.

GEORGE CLEMENTS.