J. D. DRUM.

CLEANING TOOL.

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1,036,978. Patented Aug. 27, 1912.

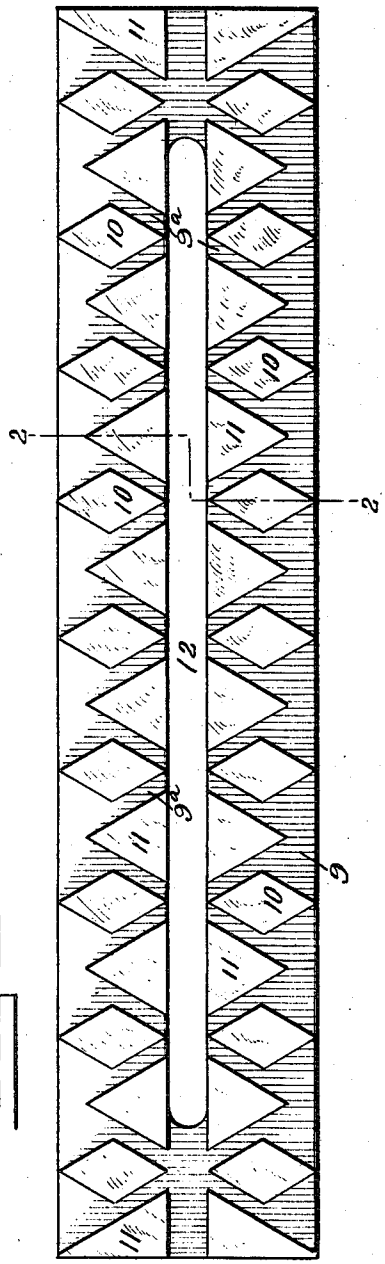

Fig. 1

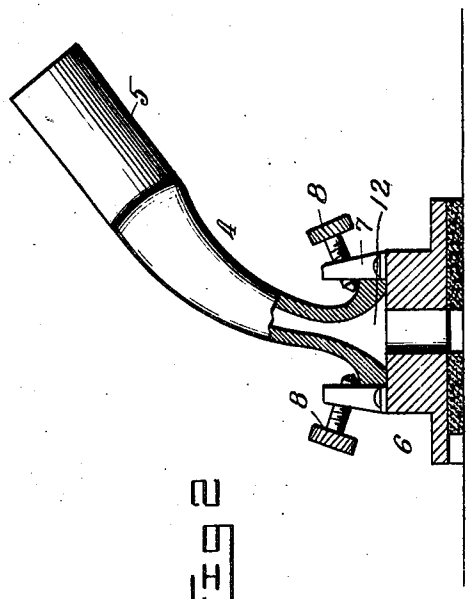

Fig. 2

Witnesses

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CLEANING-TOOL.

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To all whom it may concern:

Be it known that I, JOSEPH D. DRUM, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Cleaning-Tools, of which the following is a specification.

The present invention relates to vacuum cleaners, and more particularly to tools for use with vacuum cleaners.

It has for its object to provide a cleaning tool, designed in the present embodiment to be secured to the head of the ordinary suction tool, and its specific purpose is to provide for a complete cleaning or sweeping of the surface under treatment without materially interfering with or limiting the intake capacity of the cleaner, the present embodiment being intended more particularly for use on hard or polished surfaces, such as hardwood floors, although obviously not limited to such use.

In order that the invention may be understood by those skilled in the art, I have illustrated in the accompanying drawings one embodiment thereof, and that the best now known to me, although since this disclosure is purely illustrative and not restrictive, I do not limit myself to the specific mechanical expedients for carrying my invention into effect.

In the drawings herewith:—Figure 1 is a bottom plan view of the tool. Fig. 2 is a view in cross section on the line 2—2 of Fig. 1.

Referring to the drawings by numerals, like numbers indicating like parts in the several views, 4 denotes a suction head, which may be carried by a suitable hand pipe 5, this hand pipe 5, in turn, being connected with any convenient air conduit (not shown) and which is usually a flexible hose leading to the suction source, whether this source be the stand pipe of a stationary system or a portable vacuum cleaner machine.

The tool proper, indicated at 6, is secured to the suction head 4 in any suitable manner so as to secure a tight joint, the particular expedient here adopted being ledges 7 with clamping screws 8 arranged to secure the tool 6 in place.

The under or active surface of the tool 6 is provided centrally with a long relatively narrow opening or suction mouth 12, on opposite sides of which are a number of abutments 10 spaced from one another to form wide intake passages 9 extending from the edge of the tool toward the mouth 12. The abutments 10 are preferably lozenge or diamond shape so arranged that their long axes are parallel to one another and transverse to the length of the tool. Between the inner ends of the abutments 10, adjacent the mouth 12, are triangular or half diamond shaped abutments 11 so placed that an angle of each of said abutments points outwardly, and the inclined sides thereof lie parallel to the adjacent inclined edges of the abutments 10, and spaced therefrom to form two diverging channels 9^a leading from each intake pasage 9, and opening into the mouth 12. From this it will be evident that the converging intake passages 9 with the channels 9^a are disposed angularly to the direction in which the tool is moved, and thus expose at some time in the course of its movement the entire floor to one or more of said intake passages and channels through which air flows to the suction mouth, thus drawing all dust and dirt into the tool and through the handle 5.

It is to be noted that as the points only of the lozenge shaped abutments 10 are presented directly in the line of movement of the tool, the mouths or entrances of the intake passages 9 are wider than any other part, and that by placing between the inner ends of said abutments the semi-lozenge shaped abutments 11, the oblique channels 9^a are formed which lead from said intake passages, through which channels air flows to the suction mouth obliquely across the line of movement of the tool, thus insuring the collection of all dirt and dust over the surface traversed by said tool.

By forming the abutments 10 and 11, as shown, the likelihood of their breaking down is entirely eliminated, for the broad base afforded the abutments is sufficient to guard against this, and danger of distorting the abutments and choking the intake passages is entirely eliminated.

I am aware that the broad idea of providing tools of this character with outstanding abutments or runners, with intake-passages between, is not new, but so far as I am aware it is new with me to so arrange the abutments and intake-passages as that

the surface to be cleaned will be completely swept, without cutting down the capacity of the intake; for it will be observed that in the embodiment herein disclosed the intake-edges of the tool afford wide intake-mouths leading by inclined passages to the suction mouth 12, thereby affording a tool of large intake-capacity and yet one in which the entire surface to be cleaned will be swept by the abutments.

In the particular disclosure here made I have shown half diamond abutments 11 arranged between the full diamond abutments 10 at the ends adjacent the suction mouth 12. I have shown the channels 9^a of the intake passages 9 as laid at an angle of sixty degrees to the base line, but this angle, as well as the line of the passage, may, of course, be varied as desired so long as the broken-joint disposition of abutments and intake passages is so preserved as to prevent any unswept lines leading from the edge of the tool to the intake mouth. Preferably these abutments 10 and 11 will be made of felt or fiber suitably secured to the tool proper which may be of wood or any suitable material, although the material as well as the shape of the abutments, may be varied as described.

While I have shown a particular embodiment of my invention I do not wish to be limited to the exact mechanical details disclosed, as these may be varied within the limits of the mechanician without departing from my invention.

I claim:—

1. A sweeping tool for vacuum cleaners having a long relatively narrow suction mouth, and sweeping abutments on the face of said tool adjacent said mouth of such shape as to form intake passages having inwardly converging walls, each passage opening into narrow oblique channels leading into the suction mouth.

2. A sweeping tool for vacuum cleaners having a long relatively narrow suction mouth, sweeping abutments so arranged as to form converging intake passages opening into oblique channels leading to said mouth at oppositely disposed angles to the line of movement of said tool.

3. A sweeping tool for vacuum cleaners having a suction mouth, flat lozenge shaped sweeping abutments arranged to form converging intake passages, flat semi-lozenge sweeping abutments between the inner ends of the lozenge shaped abutments, and spaced therefrom to form diverging air channels leading from the intake passages to the suction mouth.

4. A sweeping tool for vacuum cleaners, having a suction mouth, a series of substantially triangular sweeping abutments bordering said mouth, and a series of substantially lozenge-shaped sweeping abutments arranged in overlapped relation to said triangular abutments to provide intake-passages.

5. A sweeping tool for vacuum cleaners having a suction mouth, a series of substantially triangular sweeping abutments with their bases bordering said mouth, and a series of substantially lozenge-shaped sweeping abutments arranged in overlapped relation to and extending outwardly beyond said triangular abutments to provide intake-passages.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOSEPH D. DRUM

Witnesses:
ALICE A. TRILL,
H. E. SLANGENHOUPT.