

S. C. BALL.
 TOOL FOR VACUUM CLEANERS.
 APPLICATION FILED SEPT. 20, 1910.

1,038,517.

Patented Sept. 17, 1912.

Fig. 1

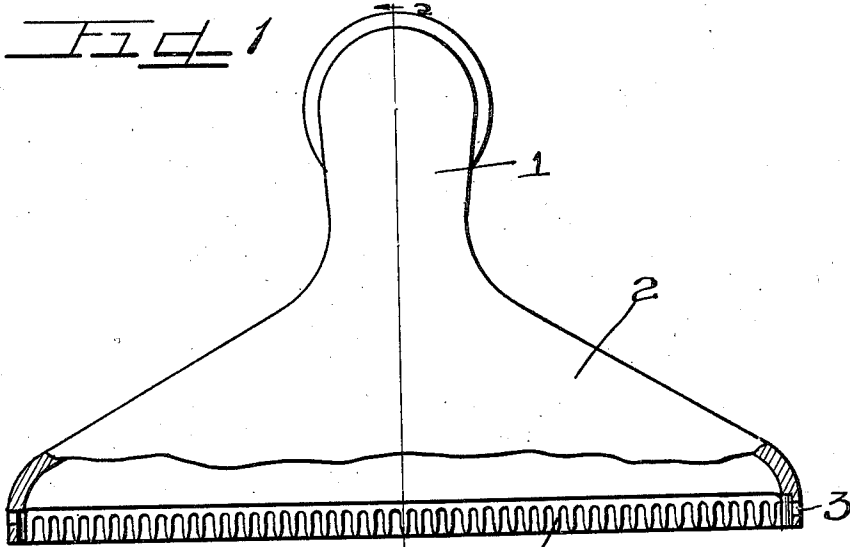


Fig. 3

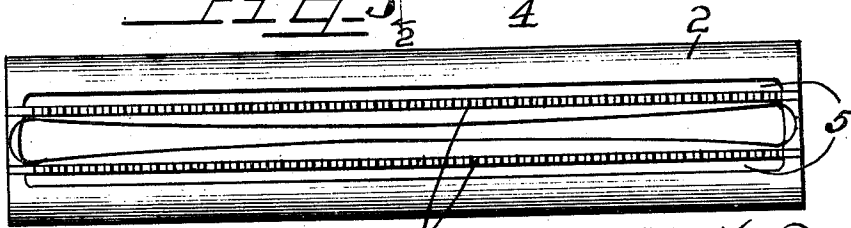


Fig. 2

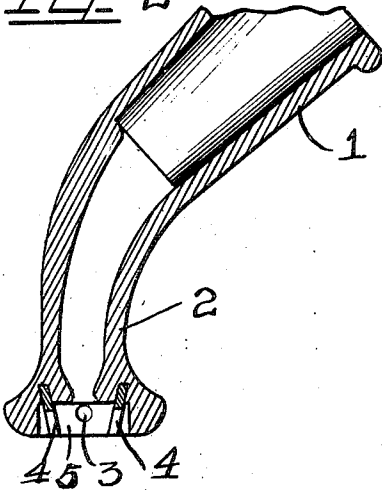
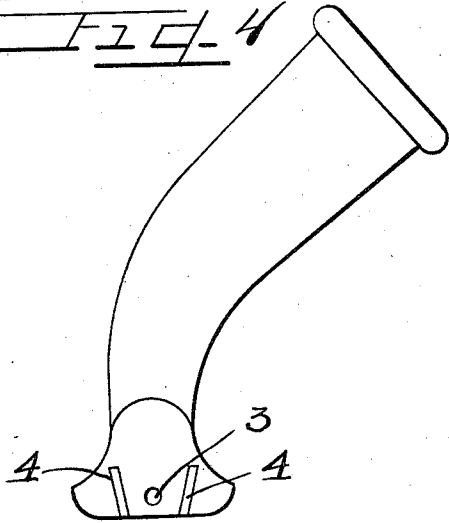


Fig. 4



WITNESSES

J. O. Angell
 Charles W. Pillsbury

INVENTOR

Samuel C. Ball
 Charles W. Pillsbury

Att'y

UNITED STATES PATENT OFFICE.

SAMUEL C. BALL, OF CHICAGO, ILLINOIS.

TOOL FOR VACUUM-CLEANERS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SAMUEL C. BALL, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Tools for Vacuum-Cleaners; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the numbers of reference marked thereon, which form a part of this specification.

This invention relates to improvements in tools for vacuum cleaners, but more particularly to a nozzle adapted for general purposes as a floor tool and affording a lint nozzle whereby lint and other materials heretofore exceedingly difficult to remove from the floor, are readily taken up.

The object of this invention is to afford an improved nozzle adapted to readily pick up lint and the like, and capable of use as well for a general cleaning tool.

It is also an object of the invention to afford a tool whereby the nap of rugs and the like may be combed, the better to remove the dust from the same and to improve the appearance of the rug or other article.

It is also an object of this invention to afford a nozzle for vacuum cleaners in which the draft of the inflowing air shall be practically uniform for the entire length thereof, thereby assuring uniform action and highest efficiency.

The invention consists in the matters hereinafter described and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a front elevation partly broken away of a device embodying my invention. Fig. 2 is a section on line 2—2 of Fig. 1. Fig. 3 is a bottom plan view of the nozzle, with parts omitted. Fig. 4 is an end elevation thereof.

In said drawings: Said nozzle is shown as constructed integrally to afford a tubular socket piece 1, to receive the suction pipe leading to the cleaner, and a laterally extended and downwardly curved head 2, cast or otherwise constructed to afford an open floor slot for nearly the entire length thereof, and which is of maximum width at the ends and the inside walls of which curve inwardly on each side with uniformly decreasing width to the center, at which point said slot is at its minimum width, and suf-

ficiently restricted to compensate for the normally greater draft at the center occasioned by said portion being in the direct line of draft from the suction pipe connected in said socket. Said slot, mouth or opening, is curved outwardly at the ends to afford a relatively thin end wall and a perforation 3, is provided in said end wall to permit of a sufficient inflow of air at each end to prevent the tool sealing by contact with any surface capable of stopping the flow of air through the mouth of the tool. At the mouth of said tool a relatively broad recess 5 extending for substantially the entire length thereof, is provided and in the bottom of which is the constriction before described. Outwardly converging slots are provided in the walls on each side of said restricted mouth portion and seated therein and extending for the entire length of the head on each side of the mouth are combs 4, the teeth of which extend through said recess flush to the outer face of the tool. The teeth of said combs incline inwardly sufficiently to afford a recess between the same and the outer wall of the head, as shown in Figs. 2 and 3, so that the air drawn inwardly beneath the head is at all times drawn directly between the teeth of said combs.

The operation is as follows: When the device is in use, as, for instance, in cleaning a rug or fabric of any material, or any other surface, any lint lying upon the surface is raised sufficiently by the inclined teeth for the inwardly flowing air to pass beneath the same, and thence carry such lint or other material to the suction pipe. When used on any material having a raised nap, as, for instance, certain types of rugs and draperies, or upon any article or garment made of fur, the combs 4, serve to comb the nap or fur in the presence of the strong inwardly and upwardly flowing current of air, thus combing, cleansing, aerating, and renovating the same, removing therefrom any and all material that may have lodged on or within the same.

Whatever the length of the head may be, the opening or mouth therein is so proportioned as to afford a uniform draft of air for the entire length of the tool, and in consequence the device works with the same efficiency at any point in its length. Furthermore, owing to the small apertures in the ends of the head, the maximum efficiency

of the tool is maintained at all times, inasmuch as there is always a sufficient air inlet provided to prevent the tool sealing upon the surface treated.

5 Details of the construction may be varied, and other devices may be incorporated therewith as preference or convenience may dictate. I do not purpose limiting this application for patent otherwise than necessitated
10 by the prior art.

I claim as my invention:

1. A tool or head for vacuum cleaners having a longitudinally extended mouth, the inner walls thereabove converging upwardly
15 and from the ends toward the center.

2. A tool or head for vacuum cleaners having a longitudinally extended mouth, the walls thereabove converging in a horizontal plane from the ends toward the middle.

20 3. A tool of the class described having a relatively broad recess extending approximately for the entire length of the bottom thereof, walls above said recess converging in both substantially vertical and horizontal
25 planes toward one another affording a gradually decreasing area of passage therebetween of narrower width toward the middle.

4. A vacuum tool of the class described embracing a hollow elongated head, provided
30 with a relatively broad recess in the bottom thereof and extending substantially the length of the tool, said recess communicating with an elongated slot or mouth decreasing in width from the ends to the middle of
35 the head, and a comb on each side of said

mouth with the teeth thereof converging downwardly.

5. A vacuum cleaning tool comprising an elongated hollow head having a straight bottom containing a relatively broad recess
40 extending substantially the length thereof, and having a mouth or slot opening inwardly therethrough at the center thereof and varying from its maximum width at the ends to its minimum width at the middle,
45 and converging combs, one on each side of said mouth or slot and projecting into said recess, the teeth thereof finishing flush with the bottom of the tool.

6. A vacuum cleaning tool comprising an
50 elongated hollow head having a straight bottom containing a relatively broad recess extending substantially the length thereof and having a mouth or slot opening inwardly therethrough at the center thereof
55 and varying from its maximum width at the ends to its minimum width at the middle, and converging combs, one on each side of said mouth or slot and projecting into the
60 said recess, the teeth thereof finishing flush with the bottom of the tool, said tool having a relatively small aperture at each end thereof opening into said recess.

In testimony whereof I have hereunto subscribed my name in the presence of two
65 subscribing witnesses.

SAMUEL C. BALL.

Witnesses:

C. W. HILLS,

CHARLES W. HILLS, Jr.