

J. W. SMITH.
NOZZLE FOR VACUUM CLEANERS.
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933,003.

Patented Aug. 31, 1909.

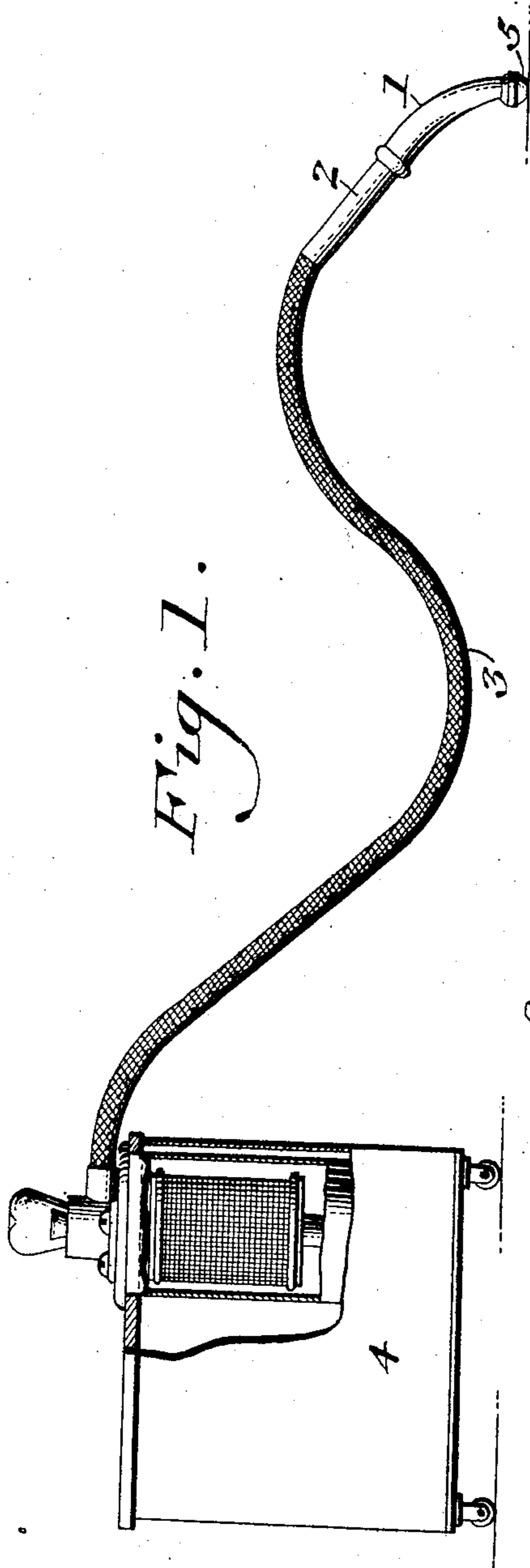


Fig. 1.

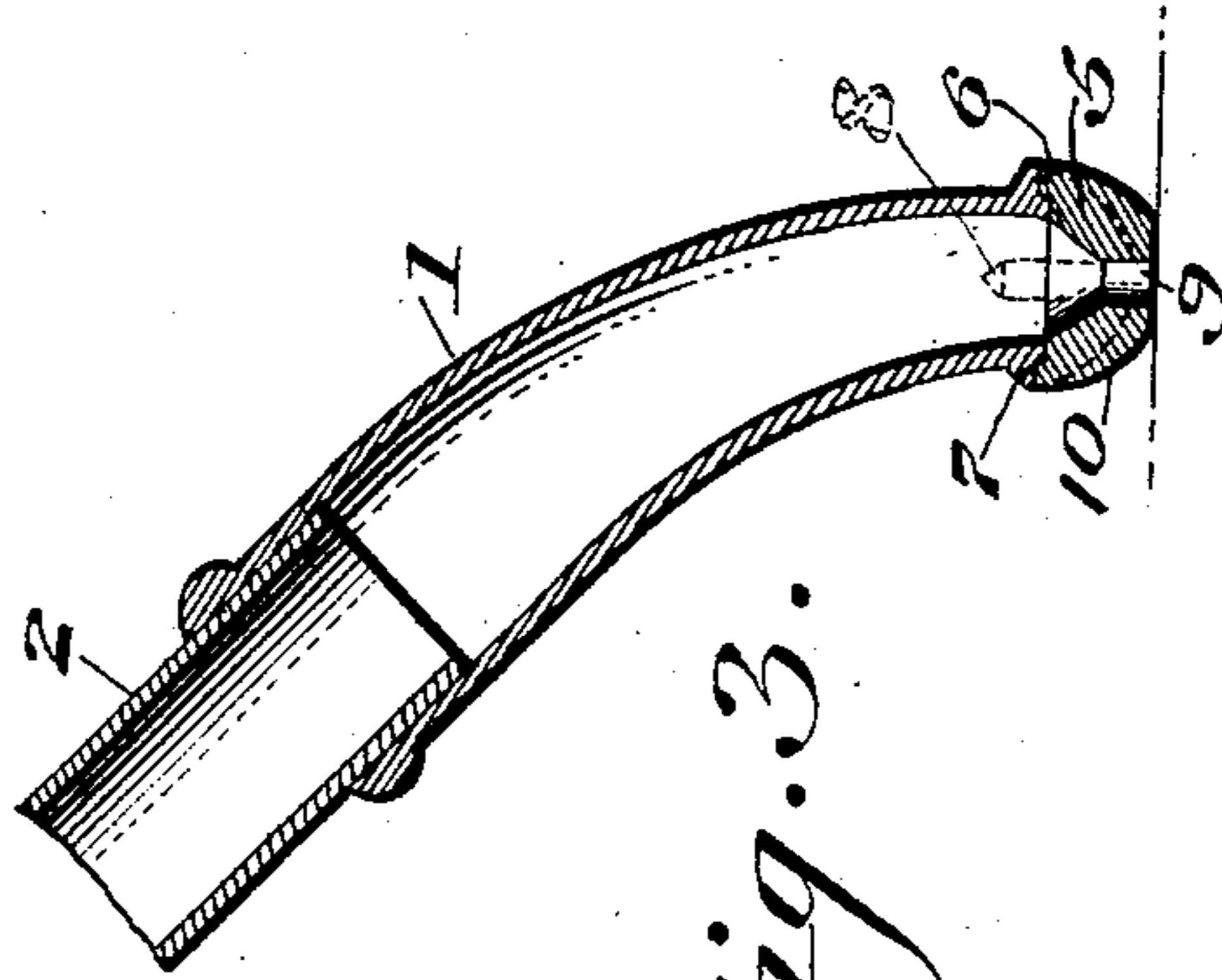


Fig. 3.

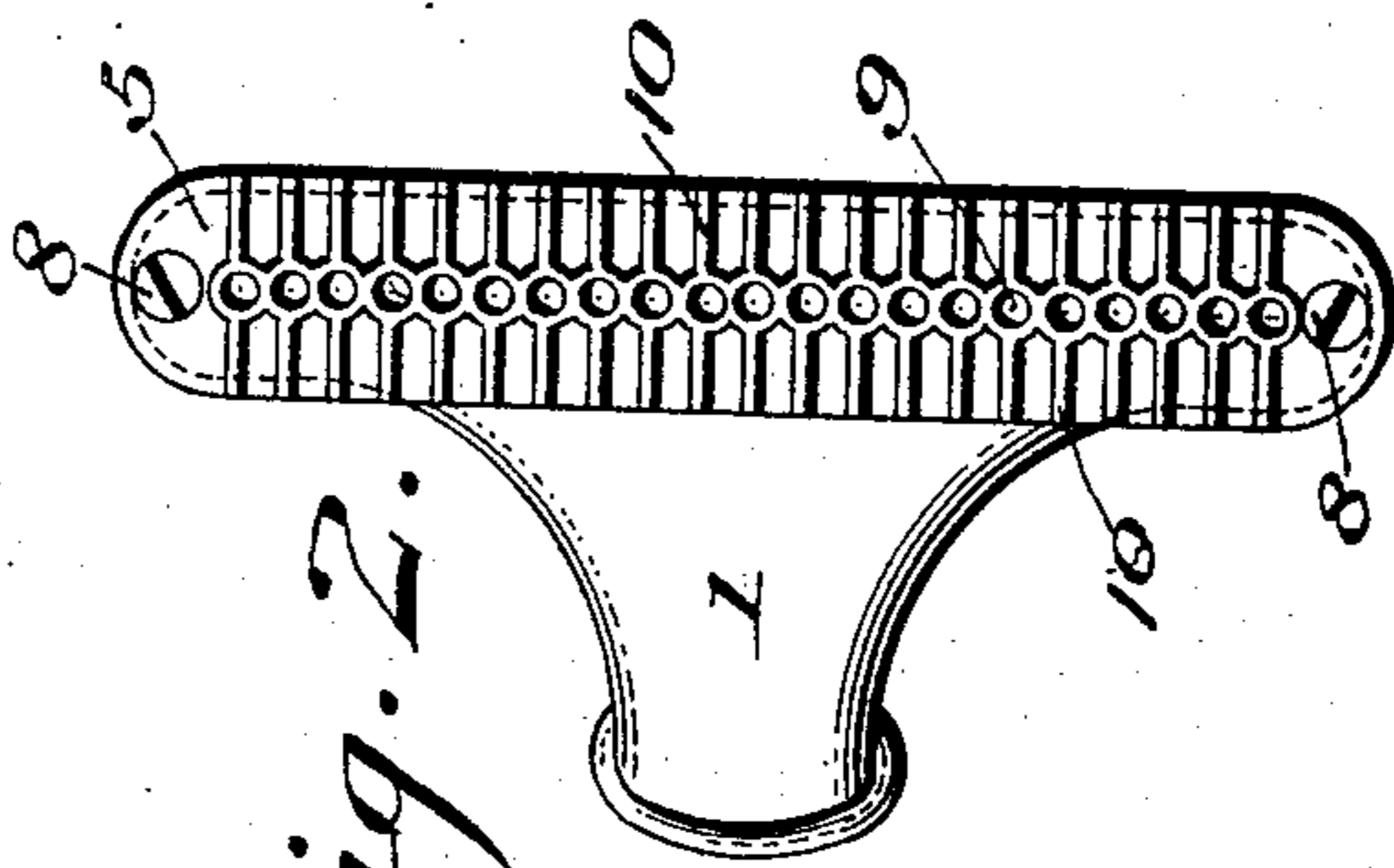


Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN W. SMITH, OF PHILADELPHIA, PENNSYLVANIA.

NOZZLE FOR VACUUM-CLEANERS.

933,003.

Specification of Letters Patent.

Patented Aug. 31, 1909.

Original application filed March 5, 1908, Serial No. 419,388. Divided and this application filed November 23, 1908. Serial No. 463,948.

To all whom it may concern:

Be it known that I, JOHN W. SMITH, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Nozzle for Vacuum-Cleaners, of which the following is a specification.

In a co-pending application filed March 5, 1908, Serial No. 419,388, I have described and broadly claimed a novel construction of a vacuum pump which is especially adapted for use in connection with vacuum cleaners and my present invention, which is a division of the application aforesaid, consists of a novel construction of a nozzle or suction head which is adapted to be passed over the carpet, tapestry or other articles which are to be cleaned, said nozzle or suction head being connected with one end of a flexible tube or hose through which a current of air is being rapidly drawn by means of suitable vacuum producing apparatus.

It has been found in practice that where a nozzle having a narrow and restricted inlet opening extending the length of the contact face is employed in cleaning delicate fabrics, portions of such fabrics are liable to be drawn through such a continuous opening as a restricted inlet slot and be injured thereby. In my present invention I have overcome this defect in such prior devices and in my preferred construction I employ a preferably detachable cleaning or contact plate which is provided with a multiplicity of apertures and in the present instance I have preferred to show these apertures as being in alinement with each other, although advantageous results may be obtained when such apertures are in staggered or parallel alinement, as desired. It has also been found in practice that in cleaning carpets and similar articles it is not only necessary to draw the air through the carpet but it is necessary to agitate the fabric when the nozzle is being rubbed back and forth thereover and in my present construction I accomplish this result by employing a multiplicity of small apertures and in order to more fully agitate the fabric I also preferably employ a series of ribs which extend outwardly from the apertures and which serve the purpose of somewhat opening up the pile of the fabric when the nozzle is moved back and forth thereover.

To the above ends my invention consists broadly in a nozzle having a contact face

provided with a multiplicity of apertures and ribs suitably arranged thereon.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

For the purpose of illustrating my invention I have shown one form thereof which is at present preferred by me since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein set forth.

Figure 1 represents a side elevation of a nozzle or suction head embodying my invention, the same being shown in assembled position with respect to a dust collector, the latter being shown partly in section. Fig. 2 represents a bottom plan view of the nozzle or suction head. Fig. 3 represents a sectional elevation of my novel construction of nozzle.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:—1 designates a nozzle to which is secured in any suitable manner a sleeve or handle 2 which is preferably metallic, said sleeve being suitably secured to a hose 3 which communicates with the dust collector 4, which may be of any usual or conventional type. The handle portion 2 is rigidly secured to the body portion of the nozzle 1 and in the present instance I have shown the same as extending thereinto and as having a frictional or driving fit therein. The lower end of the nozzle 1 is provided with a detachable cleaning head 5 which is provided with the flange 6 which is seated in a recess 7 in the lower end of the tubular portion of the nozzle 1, said head 5 being removably secured to the nozzle proper by means of the screws or equivalent fastening devices 8, as will be clearly understood from Figs. 2 and 3.

9 designates a multiplicity of apertures, the openings through which may have any desired contour although in the present instance I have shown, for the purpose of illustration, these apertures as having a circular contact face and as being in longitudinal alinement.

10 designates ribs extending from the mul-

tiplicity of apertures 9 on opposite sides thereof and these ribs may be located on the contact or cleaning face in any suitable manner, but for the purpose of illustration I have preferred to show the same as being in substantially parallel alinement.

It will be seen that in the present instance the ribs 10 are formed integral with the walls of the apertures 9. By the employment of a multiplicity of apertures in alinement or staggered relation with each other and by the employment of ribs on the back or cleaning face, I am enabled in practice to thoroughly remove the dust and dirt from the articles which are being cleaned.

It will now be apparent that I have devised a novel and useful construction of a nozzle adapted to be employed in vacuum cleaning apparatus, which embodies the features of advantage enumerated as desirable in the foregoing and while I have in the present instance shown and described a preferred embodiment thereof which has been found to give advantageous results in practice, it is to be understood that the same is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A nozzle for vacuum cleaners provided with a plurality of apertures on its contact

face and having grooves extending outwardly from near the apertures, thereby forming ribs extending outwardly from said apertures.

2. A nozzle for vacuum cleaners provided with a plurality of apertures on its contact face and having grooves extending outwardly from near said apertures, thereby forming ribs extending outwardly from near said apertures to the opposite edges of said contact face, said ribs being in parallel alinement with each other.

3. A nozzle for vacuum cleaners comprising a body portion and a head detachably connected therewith, said head being provided with a plurality of apertures on its contact face and having grooves extended outwardly from near said apertures, thereby forming ribs extending outwardly from said apertures to the opposite edges of the contact face, said ribs having their contact face in the same plane.

4. A nozzle for vacuum cleaners provided with a plurality of apertures arranged along the contact face and having grooves extending outwardly from near the apertures, the outer portion of said grooves inclining upwardly, and outwardly extending ribs between said grooves.

JOHN W. SMITH.

Witnesses:

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E. HAYWARD FAIRBANKS.