Sept. 15, 1931. H. HERTZ 1,823,542

PNEUMATIC CLEANER

Filed May 14, 1930

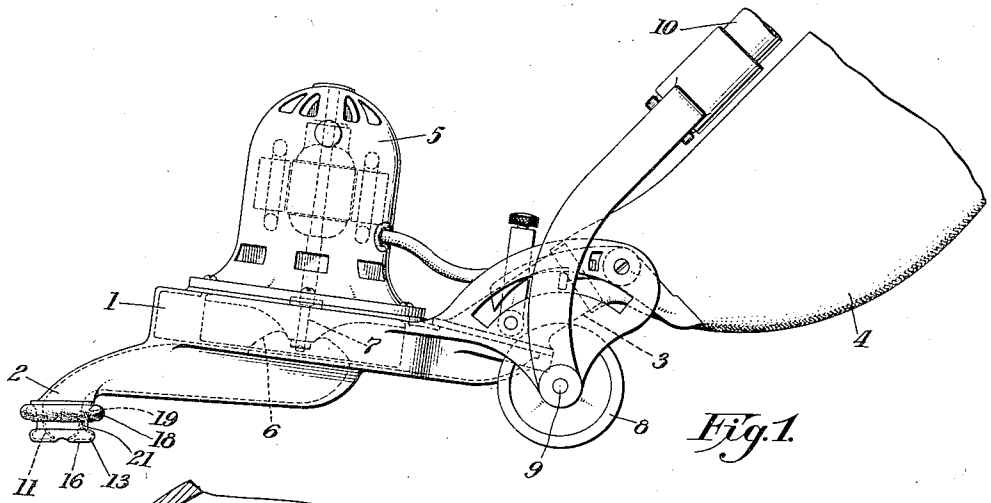


Fig. 1.

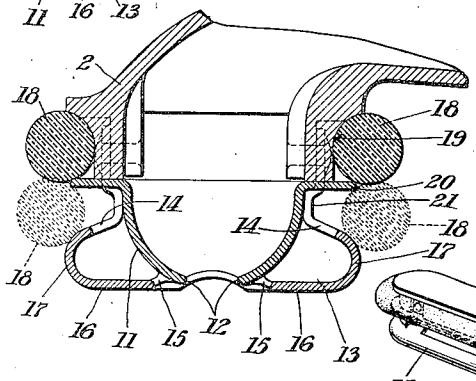


Fig. 2.

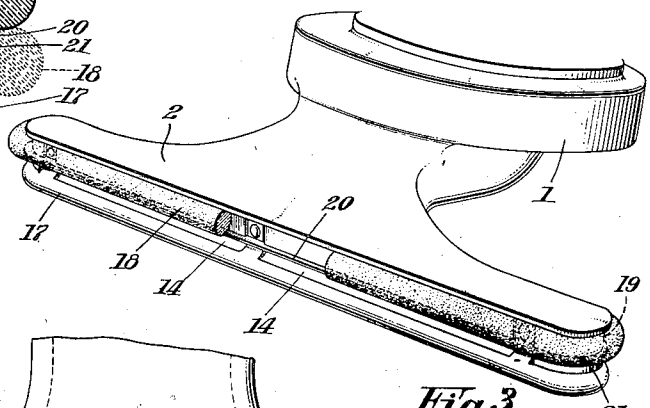


Fig. 3.

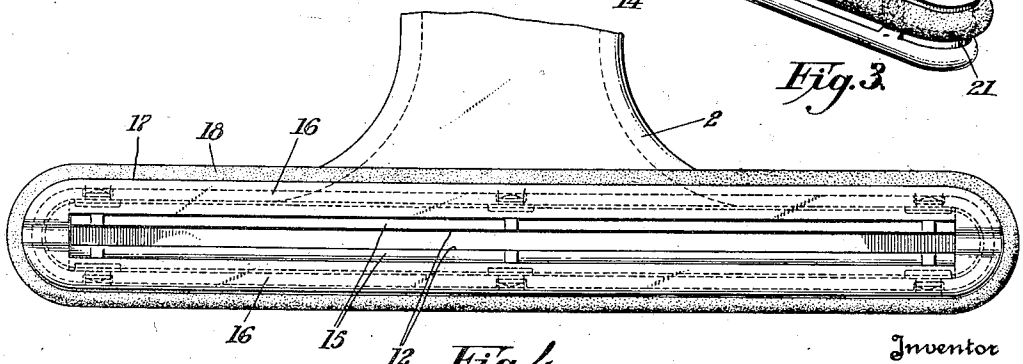


Fig. 4.

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UNITED STATES PATENT OFFICE

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PNEUMATIC CLEANER

Application filed May 14, 1930. Serial No. 452,203.

This invention relates to portable vacuum cleaners and has for an object to provide an improved intake nozzle for such cleaners, and particularly to provide simple, efficient and easily operated means for converting said nozzle to meet the requirements of different uses.

With the above and other objects in view, as will hereinafter appear, the invention consists in the devices, combinations, and arrangements of parts hereinafter set forth and illustrated in the accompanying drawings of a preferred embodiment of the invention, from which the several features of the invention and the advantages attained thereby will be readily understood by those skilled in the art.

In the accompanying drawings, Fig. 1 is a side elevation of a domestic or portable vacuum cleaner embodying the invention. Fig. 2 is a cross-sectional view through the intake nozzle of the cleaner. Fig. 3 is a perspective view and Fig. 4 a bottom plan view of the nozzle.

1 represents the fan-frame or casing having the intake nozzle 2 and outlet conduit 3 to which is connected the dust-collector 4. Supported on the casing 1 is the motor 5 having the fan 6 mounted on its shaft 7 within the casing 1. The casing 1 is supported at its rearward end upon a pair of rollers, one of which is shown at 8, and there is pivotally connected at 9 to the casing 1 a handle 10.

While the vacuum cleaner is in use, the nozzle normally rests by gravity upon and slides over the surface of the pile of the rug or carpet. The nozzle preferably comprises a sheet-metal cap 11 formed with an air intake slot 12. It also preferably comprises a sheet-metal envelope 13 surrounding the cap 11 but spaced therefrom to provide secondary air inlet slots 14 and narrower air-slots 15 adjacent the main or primary air intake slot 12. The envelope 13 has the spaced narrow flat-bottom surfaces 16 which move widthwise over the surface to be cleaned. The envelope 13 is necked or reduced in width at the intake orifices 14, thereby forming parallel rounded ribs 17 at the front at rear edges of the nozzle bottom. A rubber bumper 18 in the form of an endless elastic band is received in a bumper groove 19 in the nozzle.

One wall of the bumper groove 19 is constituted by the base flange 20 of the cap 11 which projects outwardly as a dividing wall between the groove 19 and the necked portion 21 of the envelope 13 which constitutes a second bumper-receiving groove directly below the first mentioned bumper-receiving groove 19.

With the bumper 18 in the upper position or groove 19, the secondary air passages 14, 15 are open, whereby three distinct currents of air are whirled through the nozzle, the main current coming up directly through the rug, carpet or other fabric being cleaned. Two side currents of air are at the same time whipped in through the secondary air passages 14, 15, at an angle; which side currents converge at a given point on the rug and join with the main air current, thereby creating a sweeping, brushing and agitating effect desirable in surface cleaning.

For all ordinary cleaning operations the bumper 18 is allowed to remain in its upper position, so that both deep and surface cleaning are effected. Occasionally, however, the user may have a rug or part of a rug where there is an accumulation of heavy dirt. The present nozzle construction has the unique advantage that the bumper 18 may be readily shifted into the lower groove 21 where it still functions as a bumper and also closes the secondary air inlets 18, thus concentrating the upward current of air through the rug and in the main air intake 12 and enabling the cleaner to remove the deeply imbedded dirt most expeditiously.

No claim is made herein for the constructive features of the nozzle apart from the feature of the shiftable bumper for closing or opening a secondary air passage.

Having thus set forth the nature of the invention, what I claim herein is:—

1. In a vacuum cleaner, the combination with an air intake nozzle having externally disposed upper and lower grooves and main and secondary air-passages, the latter being

disposed in one of said grooves, and an elastic bumper band disposed in one of said grooves and adapted to be readily shifted to the other groove, whereby said secondary air-passage may be opened or closed at the will of the operator.

2. In a vacuum cleaner, the combination with a fan-casing having a suction nozzle formed with a carpet-engaging face, a downwardly directed main air intake orifice and a lateral secondary air intake orifice disposed directly above said face, of an elastic bumper band externally embracing said nozzle and closing said secondary air intake orifice, said band being shiftable on said nozzle to open said secondary air intake orifice.

In testimony whereof, I have signed my name to this specification.

HJALMAR HERTZ.