April 27, 1926. 1,582,295

L. J. MUENZEN

VACUUM CLEANER

Filed May 7, 1924

Fig. 1.

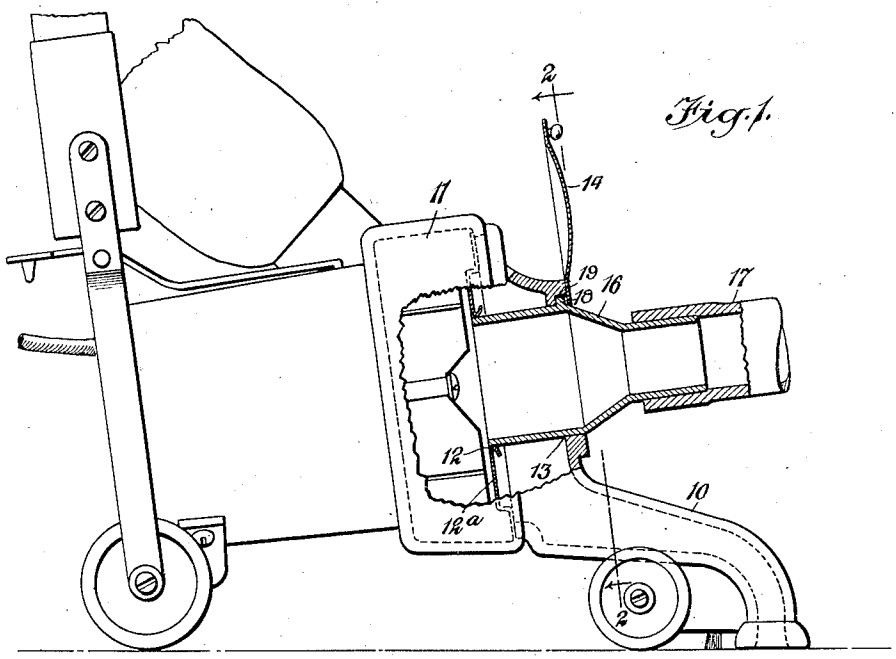


Fig. 2.

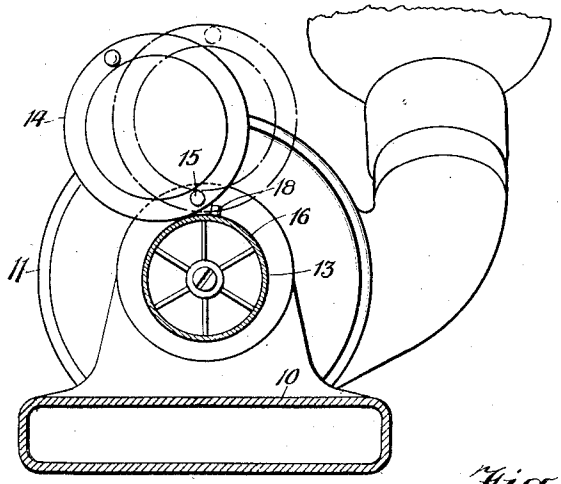


Fig. 3.

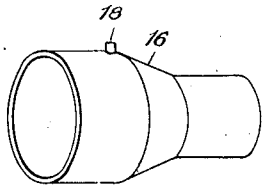
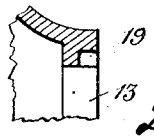


Fig. 4.



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UNITED STATES PATENT OFFICE.

LEO JAMES MUENZEN, OF MOUNT VERNON, NEW YORK.

VACUUM CLEANER.

Application filed May 7, 1924. Serial No. 711,553.

To all whom it may concern:

Be it known that I, LEO J. MUENZEN, a citizen of the United States, and resident of Mount Vernon, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Vacuum Cleaners, of which the following is a specification.

In vacuum cleaning apparatus it is common practice to provide a flexible tube or hose having at its free end a cleaning tool of some kind, and having its other end adapted to be detachably connected to the cleaner casing or other vacuum source. The manual guiding and turning of the cleaning tool frequently results in twisting and pulling the hose with consequent accidental disconnection of the coupling, if threaded connections or bayonet slot joints are used. To avoid this some manufacturers employ expensive and complicated interlocking connections which render difficult an expeditious attaching or detaching of the hose.

The primary object of the present invention is the provision of means for connecting a hose to a vacuum source in a manner which is extremely simple and practical, effects a firm union between the hose and the socket, is inexpensive, entirely obviates the danger of accidental disconnection due to pulling or twisting strains, requires the minimum change in the standard parts, and does not necessitate the use of additional parts.

In the accompanying drawings:

Fig. 1 is a side elevation partly in section, through the nozzle and a portion of the fan chamber, of a conventional type of vacuum cleaner showing a flexible hose attached to the cleaner by the use of my improved coupling means.

Fig. 2 is a section on the line 2—2 of Fig. 1, the position assumed by the cover plate when a flexible hose is coupled to the nozzle being indicated in dotted lines.

Fig. 3 is a perspective view of the coupling member, and

Fig. 4 is a sectional detail of the casing.

I have illustrated my invention as applied to a conventional type of vacuum cleaner, but it will of course be understood that it might be applied with equal facility to a wall socket or in any other apparatus wherein it is desirable to connect a hose to a vacuum source or a low-pressure chamber.

The vacuum cleaner illustrated is formed with a suction nozzle 10 operatively connected or integrally united with a fan casing 11, wherein a fan is operated to create a suction through the nozzle. The opening 12 in the dividing wall 12^a between the fan casing and the nozzle usually registers with a similar opening 13 in the front wall of the nozzle through which a hose coupling is adapted to be inserted.

For concealing the opening 13 there is provided a cover plate 14 pivotally mounted upon a pin 15 disposed on the exterior of the nozzle 10 immediately above the opening 13. The cover may be swung in its own plane about the pin 15 to completely cover or to expose the opening 13. The details of construction so far referred to are those of a well known type of vacuum cleaner.

My improved coupling includes a tubular member 16 which may be operatively connected to the end of a flexible hose 17. Any appropriate type of suction cleaning tool (not shown) may be connected to the other end of the hose. The coupling member 16 is adapted to fit the aligned openings 13 and 12 in the outer wall of the nozzle and the dividing wall between the nozzle and fan casing, and cuts off the suction through the nozzle. In order to prevent accidental disconnection of the coupling member from the nozzle I provide the coupling with a lug 18 formed on the exterior thereof, and provide the front wall of the nozzle 10 at the edge of the opening 13 with a recess 19 relatively close to the pivot pin 15. The recess 19 is comparatively shallow and preferably does not extend completely through the front wall of the nozzle. To insert the coupling in the nozzle it is merely necessary to swing the cover plate 14 to the full line position of Fig. 2, insert the coupling member 16 through the registering openings 13 and 12 until the lug 18 enters and is stopped by the rear wall of the recess 19. To prevent the coupling from being pulled outwardly, the cover plate 14 is swung to the dotted line position of Fig. 2 to thus lie across the outer end of the recess 19 and block the withdrawal of the lug 18 from the recess. It is necessary for the recess 19 to be arranged relatively close to the pivot pin 15 so that the cover plate 14 in its swinging movement will conceal or partially conceal the recess 19 before it engages the coupling

member 16. Furthermore by having the notch 19 and pivot pin 15 close together, the leverage which can be obtained tending to bend the cover and permit unlocking is comparatively small. The pivot pin being above the opening permits the cover to rest by gravity on the surface of the coupling member when covering the lug, so that it automatically retains its position.

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

1. In combination a wall having an opening therein to receive a hose coupling, and having a notch in its outer face at one side of said opening to receive a lug fixed on said coupling, and a pivoted cover for said opening swingable into position to partially cover said notch and prevent retraction of said lug therefrom.

2. In combination a wall having an opening and a notch in the edge of said opening, a cover for the opening and a pivot pin secured to the wall adjacent to the notch for supporting the cover and permitting it to swing in its own plane to a position to conceal the opening, or to a position to merely cover the notch without overlapping the opening and retain said lug in said notch.

3. In combination a wall having an opening for the reception of a hose coupling, the wall of the opening having a notch therein receptive of a lug on the coupling, and a cover movable in its own plane into position to partially cover the notch and prevent retraction of a lug therefrom.

4. In combination a casing wall provided with an opening therein, said opening having a recess at one point in the edge thereof, a tubular hose coupling member adapted to be inserted through said opening, and having a lug adapted to enter said recess whereby the member is positively held against rotational movement, and a retaining device movable into and out of registry with said recess to retain said lug therein and resist endwise stress on said coupling member.

5. In combination a casing wall provided with an opening therein, said opening having a recess at one point in the edge thereof, a tubular hose coupling member adapted to be inserted through said opening, and having a lug adapted to enter said recess whereby the member is positively held against rotational movement, and a member pivotally secured to said wall at a point adjacent to said recess and movable into engagement with the periphery of said coupling member to overlap said recess and retain said lug therein.

6. In combination a casing having an opening, a disk cover pivoted at a point above the opening to swing in its own plane to a position over the opening, said opening having a recess adjacent to the pivot of said cover, and a hose coupling adapted to be inserted through said opening and having a lug adapted to enter said recess, said cover being adapted to swing into a position partially covering said recess to prevent removal of said lug therefrom, and with the cover having one edge resting upon the outer surface of the coupling.

Signed at New York in the county of New York and State of New York this third day of May A. D. 1924.

LEO JAMES MUENZEN.