

July 17, 1923.

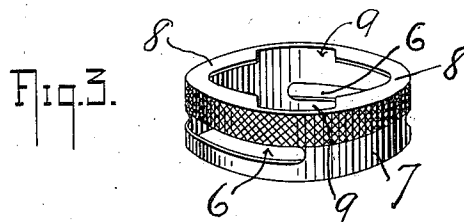
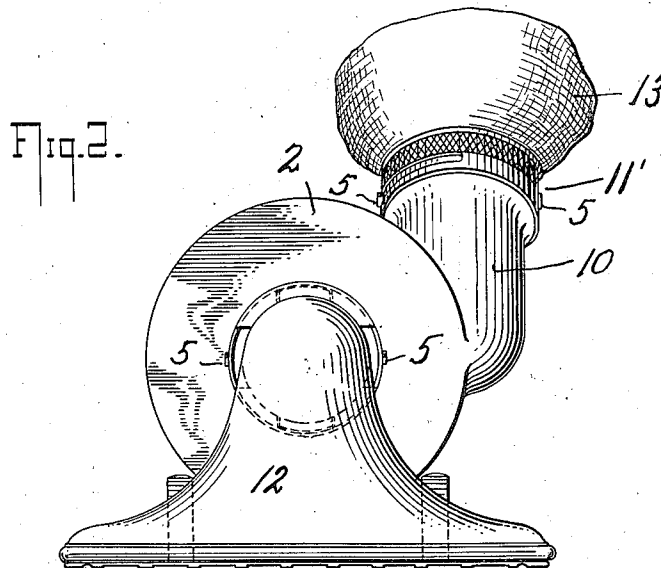
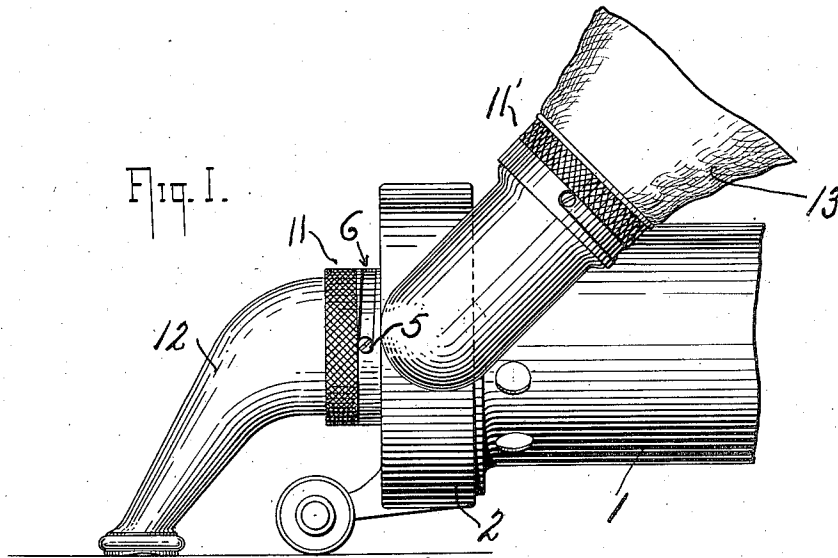
1,461,809

A. A. WARNER

VACUUM CLEANER

Filed Oct. 20, 1920

2 Sheets-Sheet 1



Inventor
A. A. WARNER.

By his Attorneys
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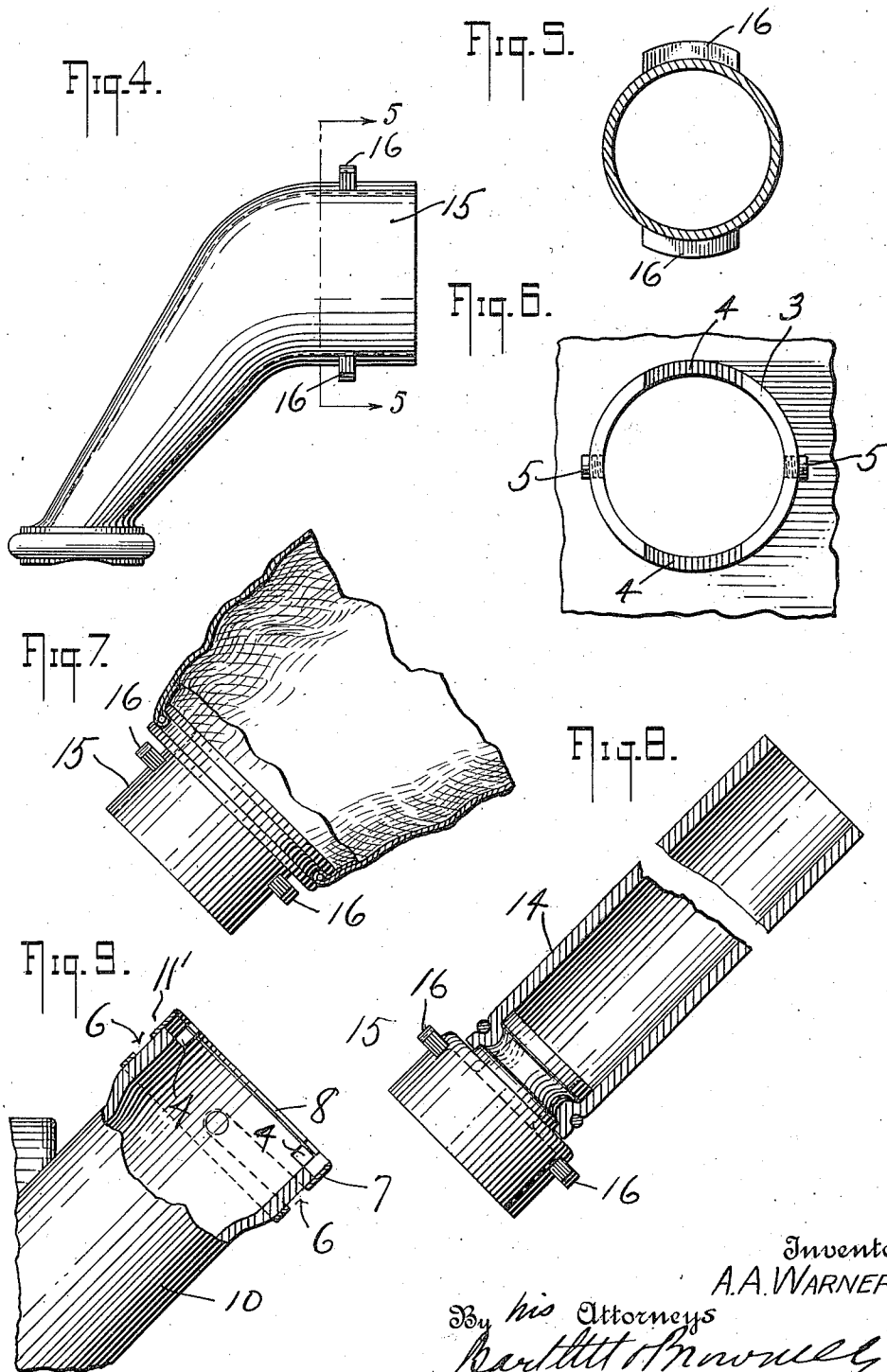
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

ALONZO ABNER WARNER, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO LANDERS, FRARY & CLARK, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

VACUUM CLEANER.

Application filed October 20, 1920. Serial No. 418,249.

To all whom it may concern:

Be it known that I, ALONZO A. WARNER, a citizen of the United States, residing at New Britain, county of Hartford, State of Connecticut, have invented a certain new and useful Improvement in Vacuum Cleaners, of which the following is a full, clear, and exact description.

My invention relates to vacuum cleaners and has for its object to provide a new and improved coupling for securing accessories such as the nozzle, bag, hose, etc., to the vacuum cleaner casing. It further has for its object to provide a vacuum cleaner having a removable nozzle and bag and means for connecting a hose or the like in place of either the nozzle or bag so as to secure a suction or blast therethrough as desired.

The following is a description of an embodiment of my invention, reference being had to the accompanying drawings, in which,

Fig. 1 shows a side elevation of a portion of a vacuum cleaner embodying my invention;

Fig. 2 is a front elevation of the same;

Fig. 3 is a detail of the ring on one of the fixed coupling members;

Fig. 4 is a side elevation of a nozzle having a removable coupling member integral therewith;

Fig. 5 is a section on the line 5—5, Fig. 4;

Fig. 6 shows another portion of one of the fixed coupling members;

Fig. 7 shows a detail of the bag with the removable coupling member;

Fig. 8 shows a detail of a hose with the removable coupling member; and,

Fig. 9 shows the fixed coupling member of the machine to which the bag is normally connected.

Referring more particularly to the drawings, 1 is the casing for the electric motor. 2 is the casing for the fan chamber, which is provided with a fixed coupling member 11 at its center and a similar coupling member 11' at its exhaust port. These members each consist of a tubular portion 3, Fig. 6, constituting a coupling member and having in its edges recesses 4, 4 and laterally projecting screw-studs 5, 5. These screw-studs lie in slots 6, 6 in a ring 7, having segmental flanges 8, 8 and spaces 9, 9 be-

tween the segmental flanges corresponding substantially to the recesses 4, 4 in length. The slots 6, 6 are slightly inclined in the same direction as one another. The studs 5, 5 passing through those slots hold the ring in place and as the ring is turned the flanges 8, 8 move slightly away from the end surface of the tubular member 3 or are drawn down into contact therewith. 10 is the discharge tube of the fan casing and is provided with a coupling 11' which is similar to the coupling just described. The nozzle 12, bag 13 and hose 14 are all provided with coupling members adapted to cooperate with either of the fixed coupling members 11 and 11' carried by the fan casing. These removable coupling members each consist of a tubular portion 15 adapted to enter the annular projection 3, and provided with two segmental projections 16 adapted to fit in the recesses 4 and making rectilinear sliding engagement therewith parallel to the axis of the coupling member 3. In affixing any one of these members to either fixed coupling, the portion 15 is inserted in the tubular projection 3 so that the projections 16 lie in the recesses 4 and the ring 7 is thereupon turned so as to bring the recesses 9 out of alinement with the recesses 4 and projections 16, and thus clamp the removable member in place.

The wheels 17 carried by the casing 2 normally engage the floor and support the casing in a definite position relative to the floor. The nozzle when coupled to the casing as described has its laterally extending mouth adjacent to and parallel with said floor, its position being determined by the engagement of the projections 16 thereon with the recesses 4 in the coupling member.

One particular advantage of this construction is that a hose can be affixed to the opening to which the nozzle is normally connected, so that with this arrangement it is necessary to have but one opening on the face of the machine for any purpose. Furthermore, the bag can be removed from its fixed coupling and the hose connected thereon so that a blast of air can be secured in that simple manner. Furthermore, the couplings themselves form very satisfactory positive means for removably connecting the accessories above referred to.

As will be evident to those skilled in the

art, my invention permits of various modifications without departing from the spirit thereof or the scope of the appended claims.

What I claim is:

5 1. In a vacuum cleaner comprising a casing and a removable nozzle, a tubular member projecting from the casing and provided with a recess extending radially through its wall and with radial studs, a tubular portion extending from said nozzle
10 and entering said tubular portion upon the casing, said nozzle portion having a shoulder-forming projection extending radially therefrom and integral therewith and fitting within said recess, and a locking ring surrounding said casing portion and having elongated slots in its periphery surrounding said studs and an interrupted flange overlapping the end of said casing tubular
15 portion and, when said ring is in locking position, engaging the shoulder upon said radial projection so as to hold it within said recess said flange having a space permitting said projection to be inserted into and removed from said recess when said space is
20 in alinement with said recess.

2. In a vacuum cleaner comprising a casing and a removable nozzle, a tubular member projecting from the casing and provided
30 with recesses extending radially through its wall and with radial studs, a tubular portion extending from said nozzle and entering said tubular portion upon the casing, said nozzle portion having shoulder-forming
35 projections extending radially therefrom and integral therewith and fitting within

said recesses, and a locking ring surrounding said casing portion and having elongated slots in its periphery surrounding said studs and an interrupted flange overlapping the
40 end of said casing tubular portion and, when said ring is in locking position, engaging the shoulders upon said radial projections so as to hold them within said recesses said flange having spaces permitting said projections to
45 be inserted into and removed from said recesses when said space is in alinement with said recesses.

3. In a vacuum cleaner comprising a casing and a removable nozzle, a tubular member projecting from the casing and provided
50 with a recess extending radially through its wall and with radial studs, a tubular portion extending from said nozzle and entering said tubular portion upon the casing, said
55 nozzle portion having a shoulder-forming projection extending radially therefrom and integral therewith and fitting within said recess, and a locking ring surrounding said casing portion and having elongated slots in
60 its periphery surrounding said studs and an interrupted flange overlapping the end of said casing tubular portion and, when said ring is in locking position, engaging the
65 shoulder upon said radial projection so as to hold it within said recess said flange having a space permitting said projection to be inserted into and removed from said recess when said space is in alinement with said
70 recess, said slots being slightly inclined in the same direction as each other.

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