H. C. NIEMEYER.

SUCTION CLEANER.

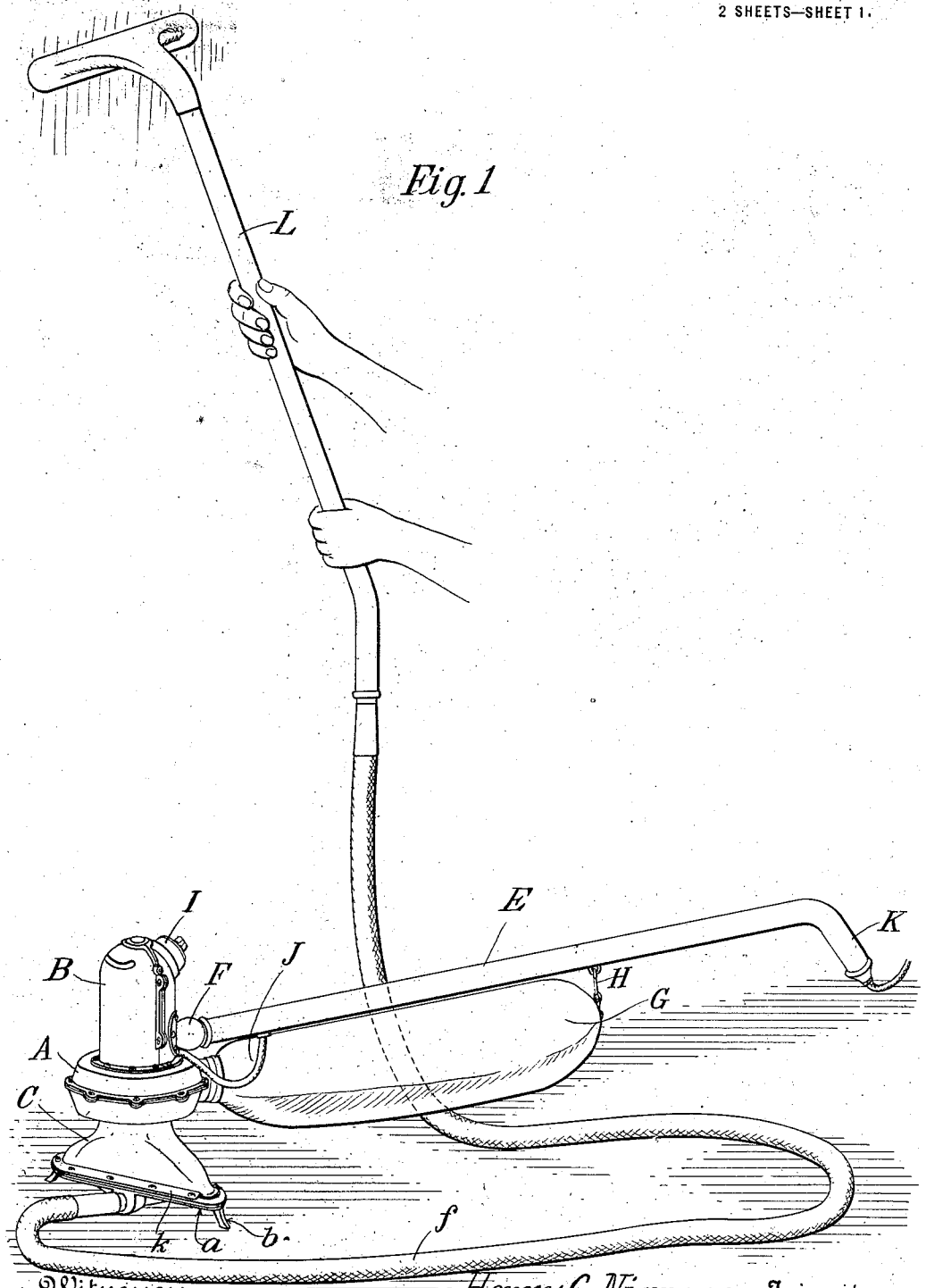
APPLICATION FILED AUG. 10, 1911.

1,184,201.

Patented May 23, 1916.

2 SHEETS—SHEET 1.

Fig. 1



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By his Attorney
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PHOTO-LITHO by SACKETT & WILHELMS CORP. N.Y.

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2 SHEETS—SHEET 2.

Fig. 2

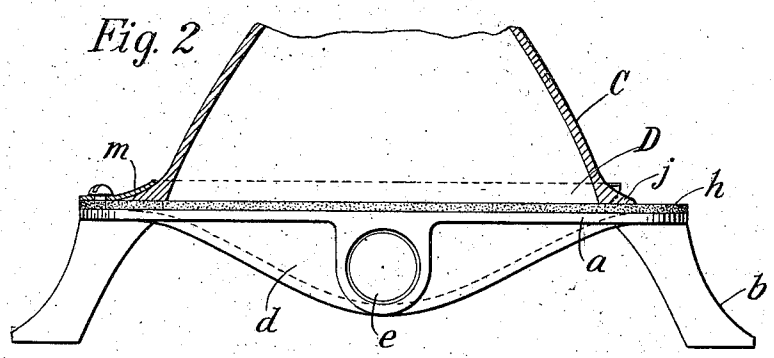


Fig. 3

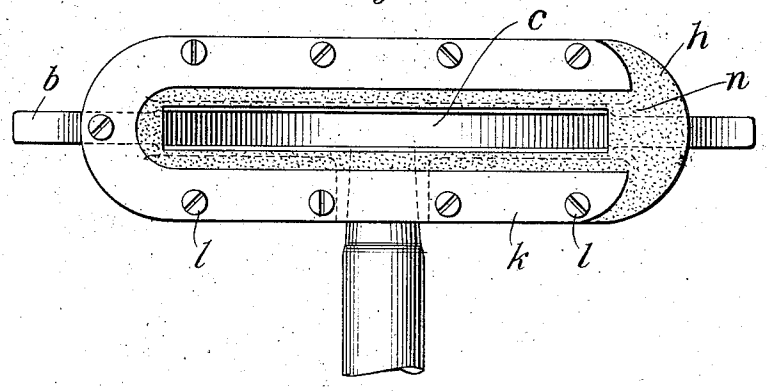
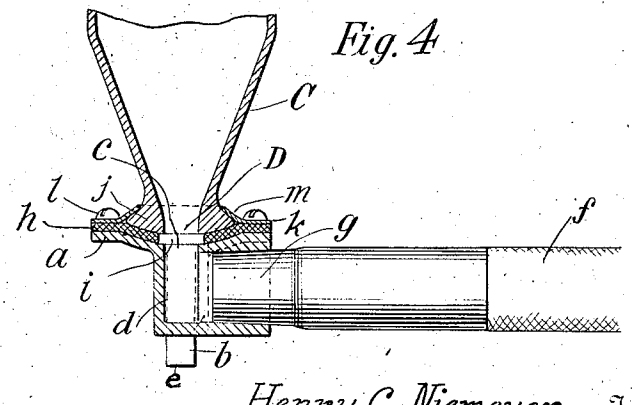


Fig. 4



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UNITED STATES PATENT OFFICE.

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SUCTION-CLEANER.

1,184,201. Specification of Letters Patent. Patented May 23, 1916.

Application filed August 10, 1911. Serial No. 643,362.

To all whom it may concern:

Be it known that I, HENRY C. NIEMEYER, a citizen of the United States, residing in the city of Racine, county of Racine, and State of Wisconsin, have invented certain new and useful Improvements in Suction-Cleaners, of which the following is a specification.

The object of my invention is to provide a rapid and simple means of jointure whereby a vacuum cleaning tool may be properly equipped with means for receiving an extending length of hose, to which may be connected a tool of different character, at the same time shutting the first tool out of operation. This is of special advantage in the types of portable vacuum cleaners wherein the entire vacuum producing mechanisms travel over the surface being cleaned. Such cleaners, while suitable for horizontal and substantially horizontal surfaces, are generally too heavy for cleaning vertical surfaces, such as side walls. It is, however, of material advantage to be able to use the suction creating mechanisms of such a floor cleaning machine for producing the suction for tools used in cleaning walls.

Referring to the drawings, Figure 1 is a complete embodiment in outside view of the cleaner showing my improvements; Fig. 2 is a front view in elevation of my device connected to the cleaner mouth shown fragmentally in section, the securing means being also shown in section; Fig. 3 is a plan view of my device showing a fragment of the pipe coupling; and Fig. 4 is a central transverse sectional view.

The present invention is shown in connection with a vacuum cleaning machine of convenient construction, but which forms no part of the present invention and will therefore be but briefly described here. My invention is not limited to this single cleaner, but is intended to close the mouth of any type of suction tool and to provide means to connect a hose thereto which may be used with other cleaning tools. It is obvious that no one specifically constructed device will properly seal every type of cleaner mouth. But such slight changes as will be necessary to adapt my invention to different types of machines may be made within the scope of the claims.

The cleaner here shown, comprises a casing having a central part A for containing a motor driven suction producing fan (not shown), an upper part B for containing the motor for driving the fan, and a lower part C having an open bottom forming the mouth D. This lower open face is kept in contact with the surface being cleaned, over which it is worked by means of a handle E held by the operator. The handle is adjustably secured to the casing by coupling F, so that it may be adjusted to assume any angle relative thereto. This keeps the casing in upright position, and enables it to be operated by persons of varying heights. The suction of air is drawn by the fan in the well known manner through the mouth D, bringing with it the dust from the surface being cleaned. This passes through the fan casing, and enters a bag G in communication with the casing at one end and secured to the handle at the other end, as by fastener H. The bag entraps the dust, but is sufficiently porous to permit the air to escape. The motor is suitably connected to an electric switch I, which in turn is connected to the feed wires J conveniently passed through the handle to the free end thereof, where they are continued and connected to the supply source (not shown). The handle is provided with a crook K, which I make use of, as will later appear, but which is not vitally essential to my invention. Such a device, as is obvious, is well adapted for floor cleaning where the weight of the mechanisms rests upon the floor. My device is designed to cover the mouth of this cleaner, and to provide a coupling for a wall tool hose so that the vacuum producing mechanism in the floor machine may have a double usefulness. My preferred construction for accomplishing this is in the nature of a stand having a base *a* and supporting legs *b*. A sufficient number of legs are used to support the stand, but in the embodiment here shown I have only used two and have relied upon the crook K in the cleaner handle E for serving the office of a leg, as shown in Fig. 1.

The base *a* is provided with an opening *c*, here shown as an elongated slot, beneath which is a chamber *d*. The chamber has a side opening *e* for joining thereto the length of hose *f*. The hose may be secured in the opening in any desired manner. I prefer, however, to terminate it in a slightly tapering metal coupling *g*, and the hole in the

chamber is given a similar taper to suitably receive the coupling in slightly wedged connection. This makes a sufficiently tight joint for the purposes intended, but one that is easily separated when desired. The free end of the hose is shown in Fig. 1 coupled with a wall tool L of well known construction, the illustration showing it in the act of being used on a wall.

When using my device the mouth piece of the cleaner is set on the stand, which is of suitable size and formation to permit the opening in the mouth to register with the opening in the stand, the cleaner and stand being otherwise in air tight contact around their respective rims surrounding the holes. To insure a complete sealing of those parts a sheet of yielding material *h*, as for instance a sheet of rubber having a hole *i* corresponding with the hole in the stand, is secured thereon, and the cleaner is permitted to rest upon this. The weight of the cleaner will of itself ordinarily cause an air tight joint with the rubber, but where feasible it is advisable to secure the two together. The means for accomplishing this will vary somewhat according to the formation of the mouth of the cleaner. It is advisable to give the mouth of the cleaner an outward peripheral flare, forming a flange *j*. This affords admirable means for securing the stand and cleaner together. To accomplish this I provide a rim *k* preferably of resilient sheet metal. This is secured to the stand by screws *l*, which also serve to hold the yielding sheet *h* in place. The rim may be slightly turned upward along the inner edge *m* to form a groove between it and the yielding bed. The rim extends on both sides of the stand, and may also continue around one end, as shown in the drawings, but one end, as *n* (Fig. 3), is left open. By such a construction all that is necessary to make the union is to slide the flange *j* of the cleaner mouth beneath the rim *k* from the open end to the opposite end. The rim will thus hold the cleaner on the stand, and the resiliency of the metal will aid in making a tight joint. The cleaner is as easily removed by sliding it in a reverse direction.

Having thus described my invention, I claim:

1. A detachable coupling for the flanged mouth of a suction cleaner, comprising an open top chamber having an outwardly extending top plate for setting over the mouth, said plate extending beyond the flange of the mouth, said chamber having an orifice for receiving a pipe connection and a resilient band secured on the extended part of the plate for receiving the flange of the cleaner mouth in spring pressed engagement between it and the plate, said band being open at one end to admit the cleaner mouth and closed at the opposite end to form a stop for said mouth.

2. A detachable coupling for the flanged mouth of a suction cleaner, comprising an open top chamber having an outwardly extending top plate for setting over the mouth, said plate extending beyond the flange of the mouth, said chamber having an orifice for receiving a pipe connection and a resilient band secured on the extended part of the plate for receiving the flange of the cleaner mouth in spring pressed engagement between it and the plate.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

HENRY C. NIEMEYER.

Witnesses:
HENRY S. KEEFE,
C. A. MCLAUGHLIN.