

W. B. GUILD.
 VACUUM CLEANING IMPLEMENT.
 APPLICATION FILED JAN. 6, 1911.

1,012,634.

Patented Dec. 26, 1911.

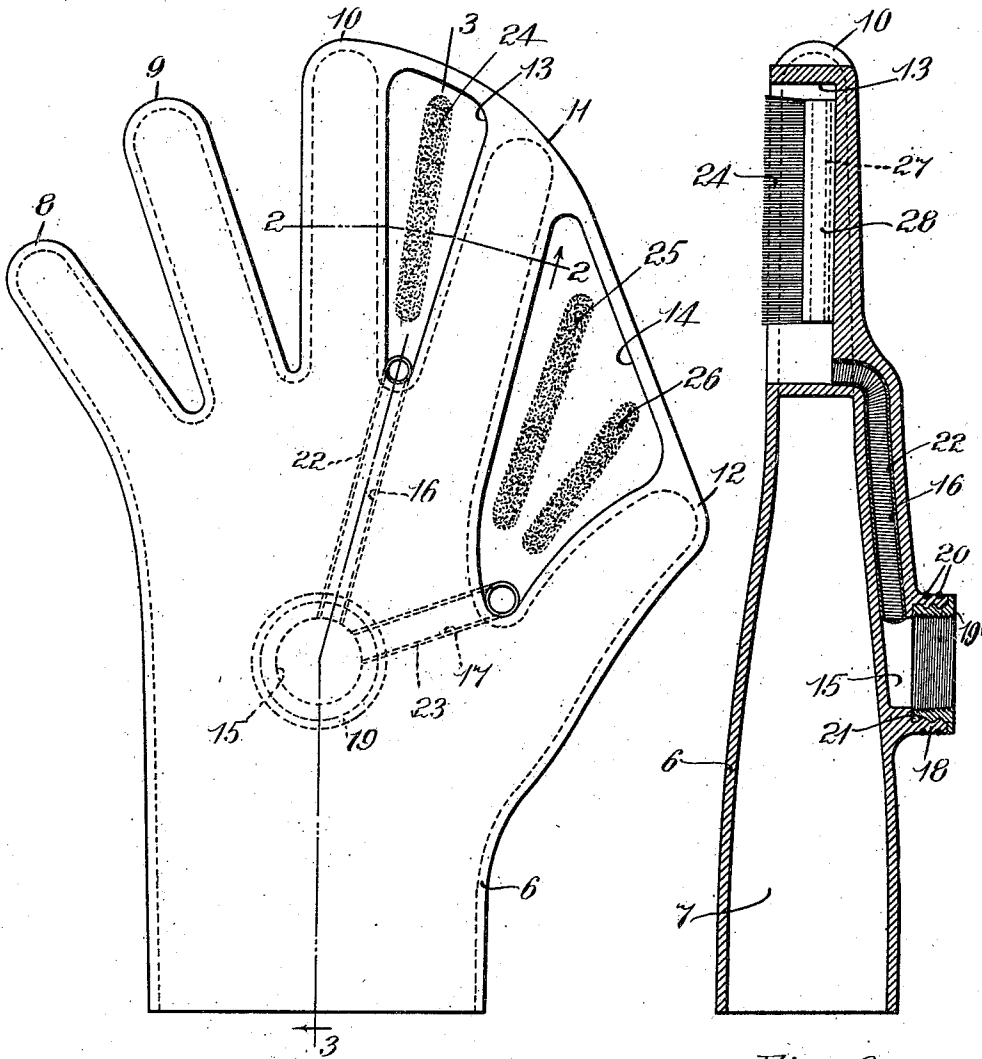


Fig. 1.

Fig. 3.

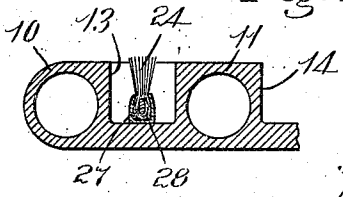


Fig. 2.

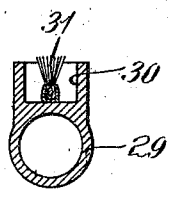


Fig. 4.

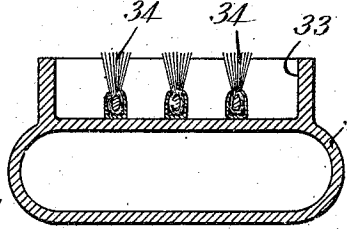


Fig. 5.

Witnesses
 Franklin & Lou.
 Leonard A. Powell

Inventor:
 Walter B. Guild.
 By his attorney,
 Charles J. Gooding.

UNITED STATES PATENT OFFICE

WALTER B. GUILD, OF ROXBURY, MASSACHUSETTS.

VACUUM CLEANING IMPLEMENT.

1,012,634.

Specification of Letters Patent.

Patented Dec. 26, 1911.

Application filed January 6, 1911. Serial No. 601,133.

To all whom it may concern:

Be it known that I, WALTER B. GUILD, a citizen of the United States, residing at Roxbury, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Vacuum Cleaning Implements, of which the following is a specification.

This invention relates to improvements in pneumatic or vacuum cleaning implements, and has for its object to provide a cleaning device of this class which may be applied to the hand of the user and which may be flexed by the movements of the fingers, thumb and palm of the hand so as to accommodate itself to the irregularities of the surface being operated upon, and the object is further to provide suitable means such as a brush or brushes so arranged as to stir up or disturb the dust or other loose matter on the surface being cleaned so that a thorough cleaning of the surface may be effected.

While the implement which forms the subject matter of my invention may be utilized for a variety of purposes, including the cleaning of furniture and the like, it is especially adapted for use in brushing horses and when so used will effect a more thorough cleaning than is possible with the means and methods now employed for the purpose.

To these ends, my invention consists in the novel features of construction and in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claims.

Referring to the drawings: Figure 1 is an elevation of the palm side of a vacuum cleaning implement embodying my invention. Fig. 2 is a sectional view taken on line 2—2 of Fig. 1, looking in the direction of the arrows on said line. Fig. 3 is a sectional view taken on line 3—3 of Fig. 1, looking in the direction of the arrow on said line. Fig. 4 is a cross sectional view of a finger of a modified form of the invention. Fig. 5 is a cross sectional view of a second modification of the invention.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, referring to Figs. 1, 2 and 3, 6 is a suitable sheath for the hand of the user and which, in the present instance, consists of a glove having a cavity 7 to re-

ceive the hand and having fingers 8, 9, 10 and 11 and a thumb 12 formed internally to receive the fingers of the user's hand. The glove is provided with one or more open channels suitably disposed upon one side thereof and in the form of invention shown in Figs. 1, 2 and 3, these channels are located between the fingers, there being a channel or recess 13 between the fingers, 10 and 11 and a channel or recess 14 located between the fingers 11 and 12. These channels or recesses are connected to a main air duct 15 by branch air ducts 16 and 17, preferably located upon the back of the glove.

The main duct 15 is formed in a boss 18 projecting from the back of the glove and, preferably, this boss is provided with a suitable metallic bushing 19 screw-threaded to receive a suitable hose fitting, not shown, whereby the passage may be placed in connection with a suitable vacuum pump, not shown. The bushing 19 may be held in place by any suitable means such, for example, as circumferential wires or bands 20 which force the rubber into grooves 21 provided in the periphery of the bushing 19. It will be understood, however, that this construction is merely typical and any suitable practical connection may be provided for this purpose.

Preferably, the ducts 16 and 17 are provided with suitable means to prevent their collapsing, such means, in the present instance, consisting of closely wound helical springs 22 and 23 inserted in said ducts, respectively. The glove is preferably provided with some suitable means for disturbing the dust or other loose material to be cleaned by mechanical action and for this purpose I preferably employ a suitable brush 24 preferably located in the recess or channel 13 and brushes 25 and 26 located in the channel or recess 14, these brushes being preferably separated from the walls of their respective channels by a sufficient air space to allow for a circulation of air therearound. This location of the brushes is very important for the reason that no matter in what direction the implement may be traveling over the surface to be cleaned when the brush disturbs or stirs up some of the dust it is followed by an open channel in which a vacuum exists so that the dust which is

disturbed by the brush is immediately sucked up. The brushes may be of any suitable construction, but, preferably, each consists of a set of bristles wrapped about a
 5 suitable flexible core and for the purposes of illustration I will describe the construction of simply the brush 24, it being understood that the construction of the others is the same.

10 Referring to Fig. 2, 27 is a suitable flexible core preferably consisting of a strip of rubber around which the bristles of the brush are wrapped. This core being flexible
 15 allows the brush to flex so as to accommodate itself to the irregularities of the surface being operated on. Preferably, the brush is provided with a suitable backing 28 which preferably consists of a strip of rubber
 20 folded over the sides of the bristles, the backing and the core being vulcanized in such a manner as to flow between and around the bristles and firmly bind them together and the backing is also vulcanized
 25 to the bottom of the recess in which the brush is located, as will be apparent from Fig. 2. It will be understood, however, that this construction is merely typical of the brush and I do not limit myself to the specific details.

30 If desired, the channels and brushes may be located upon the fingers themselves of the glove in the manner illustrated in the modification in Fig. 4, in which 29 is the finger of a glove provided with a channel
 35 30 in which is located a brush 31, it being obvious that in this form of my invention the fingers will not be connected to each other by webs, as in the form illustrated in Figs. 1, 2 and 3.

40 Referring now to Fig. 5, wherein I have illustrated another modification of my invention, 32 is a mitten having simply one large cavity to receive all of the fingers
 45 instead of having separate sheaths for the fingers as in the case of a glove, and in case a mitten is employed the same is provided with a recess 33 upon its palm side having therein one or more suitably disposed
 50 brushes 34.

55 In all three forms of my invention, the glove or mitten is formed of some suitable material such, for example, as molded rubber and is consequently flexible so that it will yield or flex with the relative movements of the fingers and thumb and the
 60 glove will accordingly accommodate itself to inequalities and irregularities of the surface to be operated upon so as to maintain the open suction channels in such position that their edges will be close to or touch the object being cleaned, it being understood that the brushes will project a slight distance beyond the open channels or recesses
 65 so as to perform their functions in a proper manner.

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

1. As a new article of manufacture, a vacuum cleaning tool consisting of a flexible sheath having a cavity to receive the hand of the user, having an open channel in and extending along one side thereof, and having a duct communicating with said channel, said duct having an outlet adapted to be connected with a suction hose.

2. The combination, in a vacuum cleaning tool, of a flexible sheath having a cavity to receive the hand of the user and having an open channel in one side thereof and a duct communicating with said channel and having an outlet adapted to be connected with a suction hose; and a brush located in said channel.

3. The combination, in a vacuum cleaning tool, of a flexible sheath having a cavity to receive the hand of the user and having an open channel in one side thereof and a duct communicating with said channel and having an outlet adapted to be connected with a suction hose; and a brush located in said channel, said brush being separated from the sides of said channel by spaces, and said sheath having flexible lateral walls located on all sides of said brush.

4. The combination, in a vacuum cleaning tool, of a sheath having a cavity for the hand of the user, and a brush attached to said sheath, said sheath having a conduit provided with an inlet orifice located adjacent to said brush and an outlet adapted to be connected with a suction hose.

5. As a new article of manufacture, a vacuum cleaning tool consisting of a flexible glove provided with channels between the fingers and provided with a duct communicating with said channels and having an outlet adapted to be connected with a suction hose.

6. As a new article of manufacture, a vacuum cleaning tool consisting of a flexible glove provided with a series of ducts having outlets located on one side of said glove, said ducts extending between the fingers and having inlet orifices on the other side of the glove.

7. As a new article of manufacture, a vacuum cleaning tool consisting of a flexible glove provided on one side with an open channel and provided on the other side with a duct communicating with said channel and having an outlet adapted to be connected with a suction hose.

8. As a new article of manufacture, a vacuum cleaning tool consisting of a flexible glove provided on one side with a series of open channels, and provided on the other side with a main duct and a series of branch ducts communicating with said main duct and with said open channels.

9. The combination, in a vacuum cleaning tool, of a nozzle provided with an inlet and an outlet, and a brush fixedly positioned in said inlet and separated at all times from opposite sides of the inlet orifice by spaces which communicate with said outlet and said nozzle having flexible lateral walls located on all sides of said brush.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses. 10

WALTER B. GUILD.

Witnesses:

LOUIS A. JONES,
SADIE V. McCARTHY.