Nov. 24, 1931. E. E. GUDKA 1,832,846

VACUUM CLEANER RECEPTACLE

Filed Feb. 21, 1928

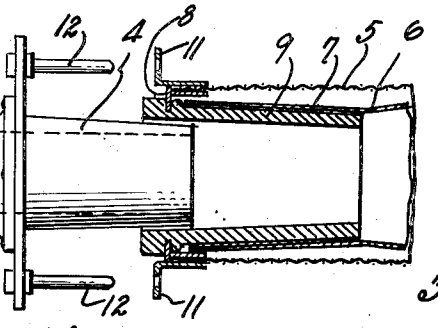


Fig. 2

Fig. 1

Fig. 5

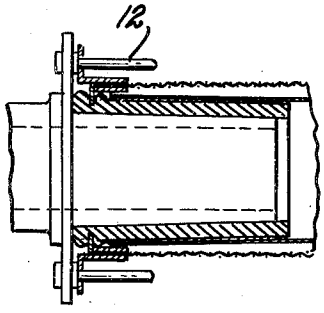


Fig. 3

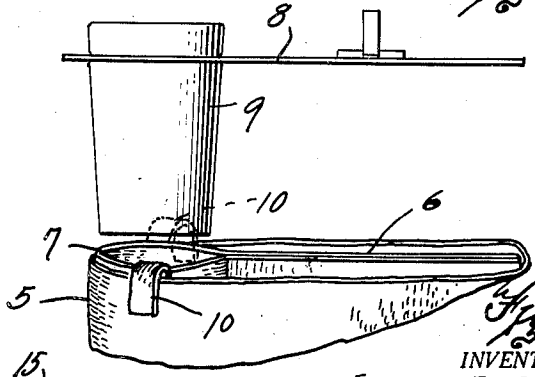


Fig. 4

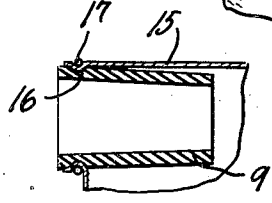


Fig. 6

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UNITED STATES PATENT OFFICE

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VACUUM CLEANER RECEPTACLE

Application filed February 21, 1928. Serial No. 255,926.

This invention relates to a vacuum cleaner receptacle, and has to do especially with a receptacle which consists of a relatively cheap dirt receiving bag designed to be thrown away and a new one used in its place from time to time.

More particularly, the invention is concerned with a connection between this replaceable bag, an exterior covering therefor, and the vacuum machine proper. Replaceable bags of the kind mentioned are usually of porous paper, and in use they are covered by an exterior member of a permanent nature.

Vacuum cleaner bags of this nature have already been proposed, and it has been proposed to provide the exterior part, which is the permanent part, with a metal tubular inlet over which a tubular formation in the paper bag is placed. When the entire bag assembly is placed on the machine, a metallic connection is effected between the metal tubular member and a co-operating part on the vacuum cleaner. This has not worked out in the best manner, because a dust tight joint is not always effected, and because considerable time and skill is required in making the assembly.

The present invention contemplates an improved connection wherein a dust tight joint is assured and wherein the joint can be easily and quickly made. Accordingly, the invention contemplates a tubular like expansible inlet member for making a connection with the paper bag, and this same expansible member is used in the connection with the vacuum machine proper, at which time the tubular member is expanded and a dust tight joint with the paper bag is positively assured.

In the accompanying drawings:

Fig. 1 is a side view of a vacuum cleaner of a type which may be used with the present invention.

Fig. 2 is an enlarged detail view illustrating the connection between the paper bag and the tubular member of the permanent bag.

Fig. 3 illustrates the position of the parts when the connection has been made with the vacuum machine proper.

Fig. 4 illustrates the position of the parts just prior to placing the inlet end of the paper bag over the inlet member of the main or permanent receptacle.

Fig. 5 illustrates how a similar connection can be used with a hose for attachments for the vacuum machine.

Fig. 6 illustrates the invention when used with a different form of dirt receiving receptacle.

In the accompanying drawings, a vacuum cleaning machine is illustrated in Fig. 1 comprising a motor 1, an inlet end 2, and a handle 3. The draft of air set up by the motor is drawn in through the inlet end, and discharged through an outlet 4. As will be noted in Fig. 2, this outlet member tapers towards its end for the purpose of establishing a connection as will presently more clearly appear.

The dirt receiving receptacle is illustrated at 5, and this receptacle may be of rigid formation constructed of wire mesh. Such a receptacle is described and claimed in my copending application Serial No. 255,925 filed February 21, 1928. Within this wire bag member is placed a replaceable dirt receiving bag 6, which may be advantageously made of porous paper. This bag is provided with an inlet end 7 which may be constructed of relatively non-stretchable paper.

The lower end head of the wire mesh bag is removable to permit insertion of the paper bag. This head being shown at 8 in Fig. 4. The head is provided with a nipple 9 which is of an elastic nature and which may be advantageously made of rubber. This nipple tapers towards its inner end as shown in Fig. 4. The removable end head 8 may be held to the container 5 by any desirable means.

In order to place the paper bag within the receptacle, the bag assembly is removed from the machine and the head 8 removed from the receptacle 5. The dirt receiving bag is then placed approximately in the position shown in Fig. 4, and the inlet 7 is pulled up over the nipple 9, as by means of tabs

10. The bag is then placed within the receptacle 5 and the head secured in place.

The whole assembly is now placed back on the vacuum machine and at first the parts take the position approximately as shown in Fig. 2. The nipple 9 is now pushed over the tube 4 and due to the tapered construction of the tube 4, the nipple is expanded so that a dust tight joint is effected both between the nipple and the extension 4, and the nipple and the inlet end 7 of the replaceable paper bag.

Any desirable means can be used for attaching the bag assembly to the vacuum machine, and for this purpose the bag 5 may be provided with apertured ears 11 which fit over studs 12 carried by the machine. A suitable spring clip 13 may be utilized for snapping over one of the ears to hold the bag in place, while a hook and eye arrangement 14 may be utilized for holding the upper end of the bag assembly to the handle.

While I have elected to describe the invention in connection with a permanent part of the bag constructed of wire mesh, it is within the invention to utilize the connection with a cloth bag. As illustrated in Fig. 6, the rear of a bag made of cloth is referenced 15, and the nipple 9 may be provided with a circumferential groove 16 in which the cloth may be secured by means of suitable wire or spring 17.

One of the features of the invention is the simple manner in which tubes for vacuum cleaner attachments may be substituted in place of a bag. Heretofore, when a metal fixture was used for the bag, a metal fixture had to be used for the attachments. There was only one metal connecting member provided, usually, for the attachments and this often was misplaced. In the present invention, however, as will be noted in Fig. 5, a tube 20 for an attachment may be provided at its end with a nipple of rubber or the like, similar to the nipple 9, so that it can merely be pushed down over the extension 4 and sufficient connection for the purpose is provided.

Claims:

1. In a vacuum cleaner, the combination of a replaceable dirt receiving bag having a tubular like inlet of non-contractible nature, a permanent bag within which the replaceable bag fits and provided with an inlet nipple adapted to slidably fit in the inlet of the replaceable bag, a tubular outlet extension on the vacuum machine over which the said nipple is slidably received, said nipple being of an expansible material and the tubular extension being tapered so as to expand the nipple and establish a dust tight connection between the nipple and the inlet of said replaceable bag.

2. In a vacuum cleaner, the combination of a replaceable porous paper bag provided with a tubular inlet, a permanent bag containing the paper bag, a tapered expansible inlet nipple for the permanent bag adapted to be received within the inlet of the paper bag, a tapered tubular outlet on the vacuum cleaner adapted to extend within the said nipple, said tapered tubular outlet expanding the nipple as the same is pushed there over, whereby the nipple expands within the tubular inlet of the paper bag to establish a dust tight connection.

3. In a vacuum machine, the combination of a dust receptacle comprising, a permanent receptacle part, and a replaceable receptacle part, a rubber nipple in the permanent part, the replaceable part having a tubular inlet of non-contractable nature within which the rubber nipple is placed, and a tubular outlet in the vacuum cleaner over which the nipple fits, said outlet being adapted to expand the rubber nipple in the tubular inlet of the replaceable part to establish a dust tight connection.

4. In a vacuum machine, the combination of a dust receptacle comprising, a permanent receptacle part, and a replaceable receptacle part, a tapered rubber nipple in the permanent part, the replaceable part having a tubular inlet within which the rubber nipple is placed, and a tapered tubular outlet in the vacuum cleaner over which the nipple fits, said tapered outlet being adapted to expand the rubber nipple in the tubular inlet of the replaceable part to establish a dust tight connection.

5. In a vacuum cleaner the combination of a dust receptacle comprising, a permanent outer part and a replaceable inner part, the inner part having an inlet opening, an expansible rubber nipple in the permanent part which fits in the inlet opening of the replaceable part, and means for connecting the nipple to the vacuum machine which expands the said nipple to effect a dust tight joint with the replaceable part.

6. In a vacuum cleaner, the combination of a replaceable dirt receiving porous paper bag having an inlet, a permanent bag within which the replaceable bag fits provided with expansible means adapted to fit in the inlet of the replaceable bag, and outlet means on the vacuum machine for receiving and expanding the inlet means of the permanent bag into dust-proof relation with the inlet of the said replaceable dirt receiving bag.

7. In a vacuum cleaner, the combination with a tapered conical outlet for the said vacuum machine of a replaceable dirt receiving porous paper bag having a tubular inlet, a permanent bag within which the replaceable bag fits provided with a conical rubber nipple arranged to fit within the tubular inlet of the said paper bag, the rubber nipple and associated tubular inlet of the replaceable bag being adapted to be slipped

onto the conical outlet of the vacuum machine whereby the tubular nipple is expanded into a dust-proof sealing relation with the inlet of the said paper bag and serves to operatively associate the outlet of the said vacuum machine with the inlet of the said paper bag.

In testimony whereof I affix my signature.

ELMER E. GUDKA.