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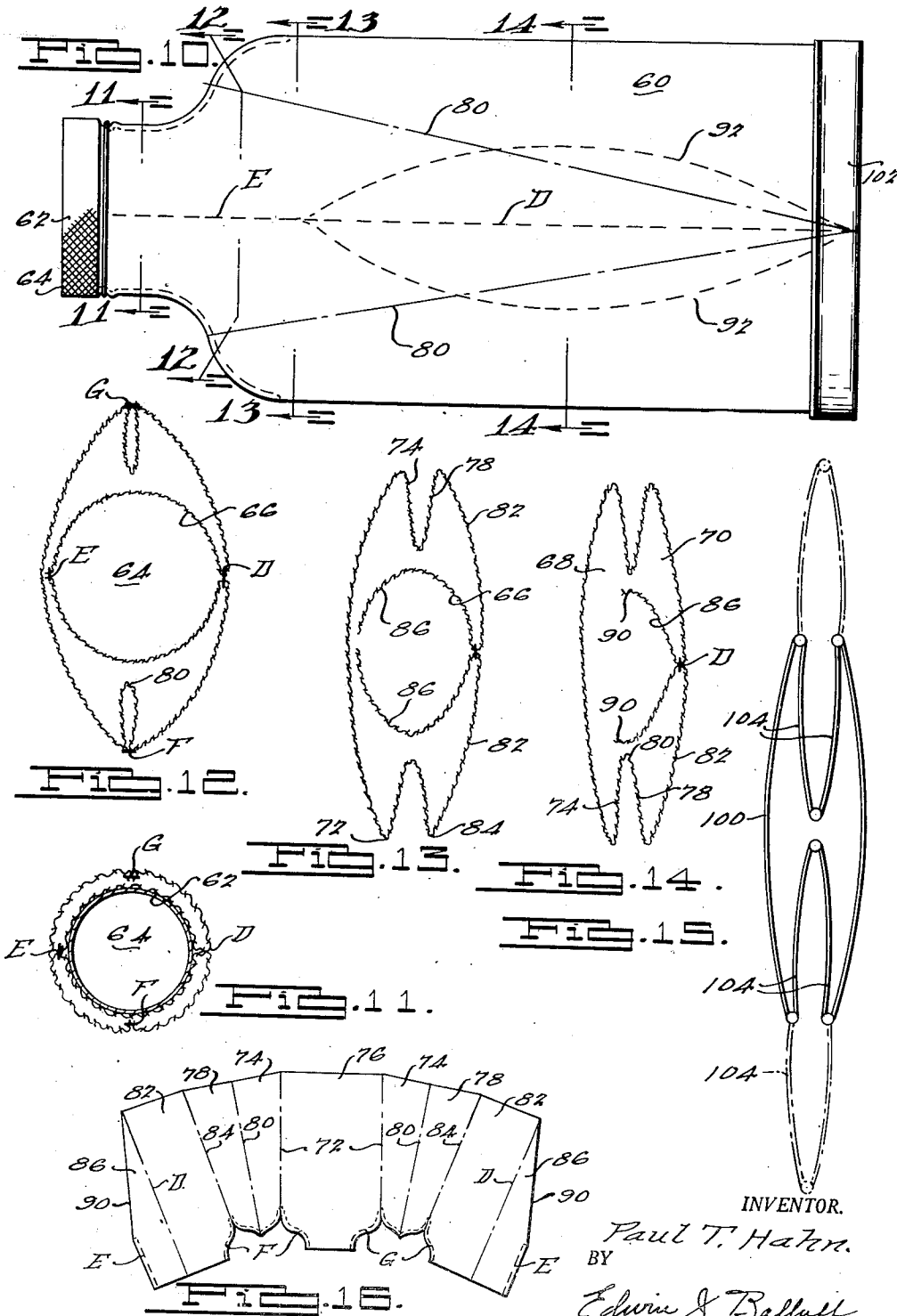
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VACUUM CLEANER BAG

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VACUUM CLEANER BAG

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8 Claims. (Cl. 183—51)

This invention relates to bags which are adapted to be connected to the discharge of a vacuum cleaner for filtering the air discharged therefrom and collecting the dirt which is filtered out of the air.

Principal objects of the invention are to provide:

A new and improved form of vacuum cleaner dirt collecting bag;

A method of folding the filtering material out of which a vacuum cleaner bag is constructed so as to provide a relatively large filtering area without increasing the over-all dimensions of the completed bag;

A vacuum cleaner dirt collecting bag made out of a single piece of material which is cut and sewed so as to form a chimney and a dirt trap.

Other objects and advantages of the invention will be apparent from a consideration of the following specification taken in conjunction with the accompanying drawings, of which there are two sheets and wherein:

Fig. 1 is a side elevational view of a side-hanging type of vacuum cleaner bag embodying the invention;

Figs. 2, 3, 4, 5, and 9 are sectional views taken along the lines 2—2, 3—3, 4—4, 5—5, and 9—9 respectively of Fig. 1;

Fig. 6 is a perspective view of the bag on a reduced scale;

Fig. 7 is a plan view illustrating the bag spreader which is arranged at the dirt discharge mouth of the bag;

Fig. 8 is a pattern of the cloth or material out of which the bag is made with the folds and seams indicated thereon;

Fig. 10 is an elevational view of a modified form of the invention;

Figs. 11, 12, 13, and 14 are sectional views of Fig. 10 taken along the lines 11—11, 12—12, 13—13, and 14—14 respectively thereof;

Fig. 15 is a view of the bag spreader; and

Fig. 16 is a pattern of the piece of material out of which the bag illustrated in Fig. 10 is made, with the fold and seam lines indicated thereon.

In Fig. 1 there is illustrated a vacuum cleaner bag 20 comprising a dirt collecting receptacle and have an inlet 22 provided by a coupling 24 which is adapted to be detachably connected to the discharge outlet of a vacuum cleaner of the floor type. The bag may be constructed of any suitable air porous material which will pass the air while filtering substantially all of the dirt therefrom.

The inlet 22 of the bag is formed at one end

of a chimney 26, the upper end of the chimney having a lateral opening 28 into dirt collecting pockets 30 at the front thereof. The upper ends of the dirt collecting pockets 30 form a dirt discharge mouth which has the bag spreader 32 associated therewith. The bag spreader consists of a series of articulated links 34 of spring metal which, when the bag discharge mouth is closed, are positioned generally as illustrated in full lines in Fig. 7 but with the links 34 side by side. However, when the dirt discharge mouth of the bag is open, the inside links 34 will assume the position shown in dotted lines in Fig. 7 so as to facilitate emptying dirt from the bag. A U-shaped bag clamp 35 straddles the bag spreader as indicated in Fig. 9 for closing the discharge mouth of the dirt collecting pockets 30 of the bag. When it is desired to empty the bag the clamp 36 can be removed from the end of the bag which forms the dirt discharge mouth so as to permit the same to be opened.

The bag, as illustrated in Fig. 1, may be made out of a piece of cloth or other suitable material cut to the pattern illustrated in Fig. 8. The seams and folds of the bag as indicated on this piece of material by dotted lines and are as follows:

The dotted line 40 is a fold which defines the front vertical edge of the bag. The bag generally is arranged with the inlet 22 at the lower end thereof and the bag extends in a generally upright direction therefrom, depending upon the manner in which the upper end of the bag is fastened to the handle of the cleaner, as well as the position of the handle of the cleaner.

The dotted lines 42 define the rear vertical edges of the dirt collecting pockets. At their lower ends the rear edges of the dirt collecting pockets are curved in toward the inlet 22 and are sewed together as indicated by seam C.

The piece of material is divided by the folds into what may be designated as a number of plies which have been identified by the reference characters 44, 46, 48 and 50. The four plies are secured together by seam C as is indicated in Figs. 1 and 3. Seam A joins the lower part of the vertical edges of plies 44 and 50, while seam B extends upwardly from the lower end of seam C parallel to but in spaced relation with seam A and joins plies 44 and 50 so as to define the chimney 26. Seam B runs out to the vertical edges of the plies 44 and 50 and thereby cooperates with seam A to define the lateral opening 28 between the chimney 26 and the dirt collecting pockets 30.

In making the bag, the vertical edges of plies 44 and 50 would be aligned with one of the plies

overlying the other. Seams A and B then would be formed. The material should be turned with the outside faces together before the seams A and B are formed. Thereafter the material can be turned outside out. Thereafter the seam C can be made by joining the curved edges of plies 44, 46, 48 and 50 together. This would close the bottom end of the dirt pockets 30. The dotted line 52 indicates the line on which the material is folded so as to enclose the bag spreader 32, while the dotted line 54 indicates the seam that is formed by joining the top edges of the plies with the plies around the bag spreader for enclosing the same. If the bag spreader 32 is preassembled, the same can be sewed into the hem formed at the top of the bag after the seams A, B and C have been completed.

The coupling 24 includes a tubular part which fits within the bottom end of the chimney 26, and suitable means may be employed for connecting the coupling to the bag material so as to prevent accidental separation thereof.

It will be observed that the bag provides two dirt pockets 30 of approximately the same size and shape and that each dirt pocket has an exterior wall on each side thereof. In one case the plies 44 and 46 form one of the dirt pockets, while in the other case the plies 48 and 50 form the other dirt pocket. As the rear edges of the plies are not joined above the seam C, the inner plies 44 and 50 are exposed so as to permit the escape of air therethrough.

In the embodiment illustrated in Figs. 10 to 16, a bag of the type intended for use in a vacuum cleaner having the exhaust to the rear thereof is illustrated. This type of bag is adapted to hang under the handle with its flat side forward or up, depending upon the position of the handle. This bag is similarly made from a single piece of suitable material which is folded and sewed so as to provide a double bag. This bag 60 includes a coupling 62 adapted to be attached to the discharge end of a cleaner and providing a dirt and air inlet 64 which is arranged at one end of a chimney 66. The upper end of the chimney opens laterally into one of the dirt collecting pockets 68 which at both sides of the chimney is in communication with the other dirt collecting pocket 70. On the sheet of material cut to the pattern, as illustrated in Fig. 16, the fold and seam lines are indicated in dotted lines and are as follows:

Fold lines 72 define the vertical edges of the front ply 76. Plies 74 are folded back upon ply 76 along the fold lines 72, while plies 78 are folded back along the plies 74 along fold lines 80. Plies 82 are folded back upon the plies 78 along fold lines 84, and the edges of plies 82 are joined together along seam D. Plies 86 which are arranged at each end of the piece of material are defined by the right and left hand vertical edges of the piece of material, as well as by the seam D. The lower portions of the plies 86 are joined by seam E which cooperates with seam D to define the chimney 66. The seam E extends vertically upwardly from the bottom edge of the material only a relatively short distance, and thereabove the vertical edges 90 are left unjoined so as to define the opening between the upper end of the chimney 66 and the dirt pockets 68, as illustrated in Fig. 14. This opening is indicated by the dotted lines 92 in Fig. 10 which indicate the unjoined edges of the material.

The lower end of the chimney 66 is suitably connected to a tubular part of the coupling 62 in any suitable manner. The notched out por-

tions along the lower edge of the piece of material, as indicated in Fig. 16, are connected by the seams F and G so as to close the lower ends of the dirt collecting pockets 68 and 70. The upper end of the bag may have a spreader 100 of the type illustrated in Fig. 15 affixed thereto in a manner similar to that in which the spreader 32 is joined to the bag illustrated in the preceding modification. The shape of the spreader 100, however, is specifically different from that of the spreader 32, and in Fig. 15 the positions of the links of the spreader are indicated in full lines in the position they would assume with the bag clamp 102 off. However, when bag clamp 102 is fitted over the bag spreader, the links thereof would be arranged side by side and the dirt discharge mouth formed thereby is closed. The inside links 104 may be moved to the dotted line positions illustrated in Fig. 15 so as to open the dirt discharge mouths of the pockets 68 and 70 for the purpose of emptying dirt therefrom. When the spreader 100 is arranged as illustrated in Fig. 15, the bag clamp 102, similar to the bag clamp 36, may be arranged thereon so as to close the dirt discharge mouth of the receptacle.

While the invention has been described with some detail, it is to be understood that the description is for the purpose of illustration only and is not definitive of the limits of the inventive idea. The right is reserved to make such changes in the details of construction and arrangement of parts as will fall within the purview of the attached claims.

I claim:

1. A vacuum cleaner bag comprising a pair of dirt collecting pockets formed of a piece of air filtering material, a chimney between said pockets and having an inlet at one end of the bag adapted to be connected to the discharge outlet of a vacuum cleaner, the other end of said chimney forming an outlet through which dirt laden air is discharged into said pockets, each of said pockets having the opposite walls thereof exposed so as to permit the escape of air therethrough to the atmosphere, said pockets at the other end of said bag being provided with a normally closed dirt discharge outlet.

2. A vacuum cleaner bag comprising a pair of dirt collecting pockets formed of a single piece of air filtering material, a chimney between said pockets and having an inlet at one end of the bag adapted to be connected to the discharge outlet of a vacuum cleaner, the other end of said chimney forming an outlet through which dirt laden air is discharged into said pockets, each of said pockets having the opposite walls thereof exposed so as to permit the escape of air therethrough to the atmosphere, said pockets at the other end of said bag being provided with a normally closed dirt discharge outlet, said chimney being formed by the end portions of said piece.

3. A vacuum cleaner bag comprising a pair of dirt collecting pockets formed of a piece of air filtering material, a chimney between said pockets and having an inlet at one end of the bag adapted to be connected to the discharge outlet of a vacuum cleaner, the other end of said chimney being provided with a lateral outlet intermediate the ends of said pockets through which dirt laden air flows into said pockets, each of said pockets having opposite walls thereof exposed so as to permit the escape of air therethrough to the atmosphere, said pockets being provided with a common normally closed dirt discharge outlet.

4. A vacuum cleaner bag comprising a pair of

dirt collecting pockets formed of a single piece of air filtering material, a chimney between said pockets and having an inlet at one end of the bag adapted to be connected to the discharge outlet of a vacuum cleaner, the other end of said chimney forming an outlet through which dirt laden air is discharged into said pockets, each of said pockets having the opposite walls thereof exposed so as to permit the escape of air therethrough to the atmosphere, said pockets being provided with a common normally closed dirt discharge outlet.

5. A vacuum cleaner bag comprising a pair of dirt collecting pockets formed of a piece of air filtering material, said piece being folded to provide a plurality of plies, certain of said plies at the ends of said piece being joined so as to provide a chimney which at one end of the bag is adapted to be connected to the discharge outlet of a vacuum cleaner, said chimney being arranged between said pockets, the other end of said chimney having an outlet through which dirt laden air flows to said pockets, other plies of said material being folded and joined to form said pockets, each of said pockets having adjacent plies of said piece facing each other and exposed so as to permit the escape of air therethrough to atmosphere, said pockets being provided with a common normally closed dirt discharge outlet.

6. A vacuum cleaner bag comprising a plurality of dirt collecting pockets formed of a single piece of air filtering material, said piece being folded to provide a plurality of plies, said plies at the ends of said piece being joined so as to provide a chimney which at one end of the bag is adapted to be connected to the discharge outlet of a vacuum cleaner, said chimney being arranged between said pockets, the other end of said chimney having an outlet through which dirt laden air flows to said pockets, other plies of said material being folded and joined to form said pockets, each of said pockets having certain plies of said material facing each other and exposed so as to permit the escape of air therethrough to atmosphere, said pockets being provided with a common normally closed dirt discharge outlet.

phere, said pockets being provided with a common normally closed dirt discharge outlet.

7. A vacuum cleaner bag comprising a pair of dirt collecting pockets formed of a piece of air filtering material, said piece being folded to provide a plurality of plies, certain of said plies at the ends of said piece being joined so as to provide a chimney which at one end of the bag is adapted to be connected to the discharge outlet of a vacuum cleaner, said chimney being arranged between said pockets, the other end of said chimney having an outlet through which dirt laden air flows to said pockets, the plies of said material at one side of the center thereof being folded and joined to form said one of said pockets and the plies at the other side of the center thereof being folded and joined to form the other one of said pockets, each of said pockets having adjacent plies of said piece facing each other and exposed so as to permit the escape of air therethrough to atmosphere, said pockets being provided with a common normally closed dirt discharge outlet.

8. A vacuum cleaner bag comprising a pair of dirt collecting pockets formed of a piece of air filtering material, said piece being folded to provide a plurality of plies, certain of said plies at the ends of said piece being joined so as to provide a chimney which at one end of the bag is adapted to be connected to the discharge outlet of a vacuum cleaner, said chimney being arranged between said pockets, the other end of said chimney having an outlet through which dirt laden air flows to said pockets, the plies of said material at the center thereof being folded and joined to form said one of said pockets and the other plies between said center and end plies being folded and joined to form the other of said pockets, each of said pockets having adjacent plies facing each other and exposed so as to permit the escape of air therethrough to atmosphere, said pockets being provided with a common normally closed dirt discharge outlet.

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