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(54) **DUST CONTAINER FOR A VACUUM CLEANER**

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Description

[0001] This invention relates to a dust container comprising a bag of air permeable, filtering material having an opening through which dust-laden air flows into the bag and a collar connected to the bag having a collar opening that is mainly coaxial with the bag opening. The collar generally has two opposite side edge parts, an upper edge part, and a lower edge part with the upper edge part having a handle portion by which the dust container is pulled out of the vacuum cleaner.

[0002] Dust containers of the type mentioned above are previously known, see for instance, EP 362624. The bags are usually made of paper whereas the collar is made of a comparatively stiff cardboard material. Traditionally, the design of a dust container has been based on the type of vacuum cleaner model. Thus, the shapes of dust containers change from one model to a later model. This has resulted in a rich variety and number of dust containers in which the shape and the size of the collar are designed differently depending on how the collar actuates different functions of the vacuum cleaner. This is very unsatisfactory for the consumers who have difficulties in finding the right dust container in a shop as well as for the retailers who are forced to store a large number of different dust containers. A further example of dust containers of the type mentioned above is disclosed in US 5 472 465, which describes a filter bag having a connection member with a fitting opening coaxial with the bag opening, and two mutually parallel side wall parts for insertion into the holding grooves of a vacuum cleaner.

[0003] This invention provides a dust container that can be used for several of the vacuum cleaner models that exist on the market and for new vacuum cleaner models that are produced. This is achieved by a dust container having a bag of filtering material connected to a collar, which has a collar opening mainly coaxial with the bag opening through which air flows into the bag. The collar has two opposite side edge parts, an upper edge part and a lower edge part with the upper edge part being provided with a handle portion by which the dust container is pulled out of the vacuum cleaner; and the collar close to the upper edge part has at least one tab extending sideways of the side edge parts and several recesses positioned at the upper or lower edge part.

[0004] An embodiment of the invention will now be described with reference to the accompanying figures in which:

FIG. 1 is a perspective view of a dust container according to an embodiment of the invention;

FIG. 2 is a plan view of a first layer of the collar that is a part of the dust container shown in FIG. 1;

FIG. 3 is a plan view of a second layer of the collar; and

FIG. 4 is a plan view of a third layer of the collar.

[0005] The dust container as shown in Figs. 1-4 comprises

a bag 10 of air permeable material whose opening is covered by a collar 11 of comparatively stiff material, for instance, cardboard or plastic. The collar 11 comprises three layers that are partly glued together. The first outer layer 12 is the outwardly facing side, the second layer 13 is an intermediate layer, and the third layer 14 is an inner layer to which the bag is fastened. The collar has an inlet opening 15 through which the dust-laden air flows into the dust container. The inlet opening is partly covered by a flexible membrane 16, which is placed between the second and third layers that are glued together.

[0006] Referring to Fig. 2, the first layer 12 is a mainly rectangular plate with a mainly oval opening 17 surrounded by several tongues 12a separated from the remaining part of the plate by a circular bending or tear off line 12b. The plate is provided with sideward and upwardly extending tabs 18 near the upper edge of the plate and on each side of a symmetry line S. The tabs 18 are connected to the plate by upper edge bending lines 19 and each tab 18 has a tab recess 18a. At the lower edge of the plate and on each side of the symmetry line S, there are also two lower edge recesses 20.

[0007] As shown in Fig. 3, the second layer 13 comprises a plate-shaped central or guillotine element 21 and two identical but mirror-inverted elongated edge portions 22 that are placed at each side and close to the central element 21. The central element has a circular opening 23 whose diameter mainly corresponds to the longest diameter of the opening 17 in the first layer. In the finished state of the collar, the central element 21 is not glued to the other layers.

[0008] An upper part 24 of the central element 21, serving as a handle or grip part, is provided with an opening 24a. The central element upper part 24 has a width that mainly over-bridges the distance between the upwardly extending tabs 18 of the first layer when the layers are placed on top of one another. The upper part 24 continues into lugs 25 that extend sideways at each side of the symmetry line S and into a main part 26, which is provided with the opening 23. The lower side ends of main part 26 have sideward extending tabs 27 on each side of the symmetry line S, which cooperate with the edge portions 22. Moreover, at the lower edge of the main part 26 and on each side of the symmetry line S, there are two main part recesses 28 that are placed such that they overlap the lower edge recesses 20 of the first layer when the layers are placed on top of one another.

[0009] The elongated edge portions 22 each comprise an upper portion 29, whose side edge serves as a guide for the main part 26 of the central element, and an L-shaped lower portion 30 that joins the main part recess 28. Thus, abutment portions 31 and 32 are formed for the sideward-extending tabs 27 of the central element. In the finished state of the collar, the elongated edge portions 22 are glued to the first and third layers.

[0010] The third layer 14, as shown in Fig. 4, comprises a mainly rectangular plate with a circular opening 33. The opening 33 has approximately the same shape and size

as the central element opening 23 of the second layer and is partly covered by the flexible membrane 16. The plate has two circular recesses or openings 34 arranged near its lower edge and at each side of the symmetry line S. These circular recesses 34 are placed such that when the collar is finished, they are situated below the lower edge recesses 20 of the first layer and main part recesses 28 of the second layer, respectively. Centrally located between these circular recesses 34, there is a center recess 35 extending from the lower edge of plate 41. In the finished state of the collar, the third layer 14 on the side provided with the flexible membrane 16 is glued to the edge portions 22 of the second layer, and the edge portions 22 are glued to the first layer 12.

[0011] The dust container operates in the following manner. When the dust container is inserted into the vacuum cleaner, the collar slides into guides arranged in the dust container chamber in the vacuum cleaner. This movement may be limited in some vacuum cleaner models by the lower edge of the collar meeting an abutment surface at the lower portions of the guides or in other models by the outwardly extending tabs engaging the upper portions of the guides. Since the tabs are bendable, the collar fits in such vacuum cleaners where the cover for the space by the collar is normally prevented from closing the space. The upper and lower edge recesses 18a, 20, 28, 34, and 35 of the collar also allow the collar to be inserted in such vacuum cleaners where parts extending into the dust container chamber normally prevent containers without such recesses and openings from being used.

Claims

1. A dust container comprising: a bag (10) of filtering material having an opening through which air flows into the bag, the bag is connected to a collar (11) having a collar opening (17,23,33) coaxial with the bag opening, the collar is provided with two elongated, opposite, parallel outer side edge parts, an upper edge part and a lower edge part, the upper edge part is provided with a handle portion (24) by which the dust container is pulled out of the vacuum cleaner **characterized in that** the collar close to the upper edge part is provided with at least one tab (18) extending sideways of the side edge part and several recesses are positioned at the upper or lower edge part.
2. A dust container according to claim 1 **characterized in that** said tab (18) is connected to the collar by an upper edge bending line (19).
3. A dust container according to claim 1 or 2 **characterized in that** the collar opening is at least partly surrounded by at least one flexible tongue (12a).

4. A dust container according to claim 3 **characterized in that** the collar opening is mainly oval and that the flexible tongue (12a) is connected to the collar by a mainly circular bending line (12b).
5. A dust container according to any of the preceding claims **characterized in that** the collar comprises three layers (12, 13, 14) of comparatively stiff material, and a part of an intermediate layer (13) serving as a guillotine element (21) can be moved such that it closes the collar opening of the dust container, and the handle portion (24) is arranged at the guillotine element (21).
6. A dust container according to any of the preceding claims **characterized in that** the collar is provided with a symmetry line (S) and that the collar at the lower edge part and at said symmetry line (S) is provided with a first recess (35).
7. A dust container according to claim 5 **characterized in that** the handle part (24) in a non-blocking position of the guillotine element (21) is placed between the tabs (18).
8. A dust container according to claim 6 **characterized in that** the first recess (35) is arranged in an inner layer (14) to which the bag is fastened to the collar.
9. A dust container according to claim 6 **characterized in that** the collar is provided with a second recess and a third recess (20, 28, 34) each arranged at one side of the symmetry line (S) and at the lower edge part.
10. A dust container according to any of the preceding claims **characterized in that** at least one tab (18) is provided with a tab recess (18a).

Patentansprüche

1. Staubbehälter, umfassend: einen Beutel (10) aus Filtermaterial mit einer Öffnung, durch welche Luft in den Beutel strömt, wobei der Beutel mit einem Kranz (11) verbunden ist, der eine Kranzöffnung (17, 23, 33) aufweist, die koaxial mit der Beutelöffnung ist, der Kranz mit zwei länglichen, gegenüberliegenden, parallelen Außenseitenkantenteilen, einem Oberkantenteil und einem Unterkantenteil versehen ist, und der Oberkantenteil mit einem Griffabschnitt (24) versehen ist, durch welchen der Staubbehälter aus dem Staubsauger gezogen wird, **dadurch gekennzeichnet, dass** der Kranz in der Nähe des Oberkantenteils mit wenigstens einer Lasche (18) versehen ist, die sich seitlich des Seitenkantenteils erstreckt, und mehrere Aussparungen am Ober- oder Unterkantenteil positioniert sind.

2. Staubbehälter nach Anspruch 1, **dadurch gekennzeichnet, dass** die Lasche (18) mit dem Kranz durch eine Oberkantenbiegeline (19) verbunden ist.
3. Staubbehälter nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** die Kranzöffnung teilweise von wenigstens einer flexiblen Zunge (12a) umgeben ist. 5
4. Staubbehälter nach Anspruch 3, **dadurch gekennzeichnet, dass** die Kranzöffnung im Wesentlichen oval ist und dass die flexible Zunge (12a) mit dem Kranz durch eine im Wesentlichen kreisförmige Biegeline (12b) verbunden ist. 10
5. Staubbehälter nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der Kranz drei Schichten (12, 13, 14) aus vergleichsweise steifem Material umfasst, und ein Teil einer Zwischenschicht (13), der als Guillotineelement (21) dient, derart bewegt werden kann, dass er die Kranzöffnung des Staubbehälters schließt, und der Griffabschnitt (24) am Guillotineelement (21) angeordnet ist. 15
6. Staubbehälter nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der Kranz mit einer Symmetrielinie (S) versehen ist und dass der Kranz am Unterkantenteil und an der Symmetrielinie (S) mit einer ersten Aussparung (35) versehen ist. 20
7. Staubbehälter nach Anspruch 5, **dadurch gekennzeichnet, dass** der Griffteil (24) in einer nicht blockierenden Position des Guillotineelements (21) zwischen den Laschen (18) angeordnet ist. 25
8. Staubbehälter nach Anspruch 6, **dadurch gekennzeichnet, dass** die erste Aussparung (35) in einer Innenschicht (14) angeordnet ist, an welcher der Beutel am Kranz befestigt ist. 30
9. Staubbehälter nach Anspruch 6, **dadurch gekennzeichnet, dass** der Kranz mit einer zweiten Aussparung und einer dritten Aussparung (20, 28, 34) versehen ist, die jeweils auf einer Seite der Symmetrielinie (S) und am Unterkantenteil angeordnet sind. 35
10. Staubbehälter nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die wenigstens eine Lasche (18) mit einer Laschenaussparung (18a) versehen ist. 40

Revendications

1. Récipient à poussière comprenant : 45
 - un sac (10) en matériau de filtration ayant une

ouverture à travers laquelle l'air s'écoule pour entrer dans le sac, le sac est raccordé à un collier (11) ayant une ouverture de collier (17, 23, 33) coaxiale avec l'ouverture de sac, le collier est prévu avec deux parties de bord latéral externe parallèles opposées allongées, une partie de bord supérieur et une partie de bord inférieur, la partie de bord supérieur est prévue avec une partie de poignée (24) grâce à laquelle le récipient à poussière est retiré de l'aspirateur, **caractérisé en ce que** le collier à proximité de la partie de bord supérieur est prévu avec au moins une patte (18) s'étendant latéralement de la partie de bord latéral et plusieurs évidements sont positionnés au niveau de la partie de bord supérieur ou intérieur.

2. Récipient à poussière selon la revendication 1, **caractérisé en ce que** ladite patte (18) est raccordée au collier par une ligne de pliage de bord supérieur (19).
3. Récipient à poussière selon la revendication 1 ou 2, **caractérisé en ce que** l'ouverture de collier est au moins partiellement entourée par au moins une languette flexible (12a).
4. Récipient à poussière selon la revendication 3, **caractérisé en ce que** l'ouverture de collier est principalement ovale et **en ce que** la languette flexible (12a) est raccordée au collier par une ligne de pliage principalement circulaire (12b).
5. Récipient à poussière selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le collier comprend trois couches (12, 13, 14) de matériau relativement rigide, et une partie d'une couche intermédiaire (13) servant d'élément de guillotine (21) peut être déplacée de sorte qu'elle ferme l'ouverture de collier du récipient à poussière, et la partie de poignée (24) est agencée au niveau de l'élément de guillotine (21).
6. Récipient à poussière selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le collier est prévu avec une ligne de symétrie (S) et **en ce que** le collier au niveau de la partie de bord inférieur et au niveau de ladite ligne de symétrie (S) est prévu avec un premier évidement (35).
7. Récipient à poussière selon la revendication 5, **caractérisé en ce que** la partie de poignée (24) dans une position sans blocage de l'élément de guillotine (21) est placée entre les pattes (18).
8. Récipient à poussière selon la revendication 6, **caractérisé en ce que** le premier évidement (35) est agencé dans une couche interne (14) à laquelle le

sac est fixé au le collier.

9. Récipient à poussière selon la revendication 6, **caractérisé en ce que** le collier est prévu avec un deuxième évidement et un troisième évidement (20, 28, 34), chacun agencé d'un côté de la ligne de symétrie (S) et au niveau de la partie de bord inférieur. 5
10. Récipient à poussière selon l'une quelconque des revendications précédentes, **caractérisé en ce qu'**au moins une patte (18) est prévue avec un évidement de patte (18a). 10

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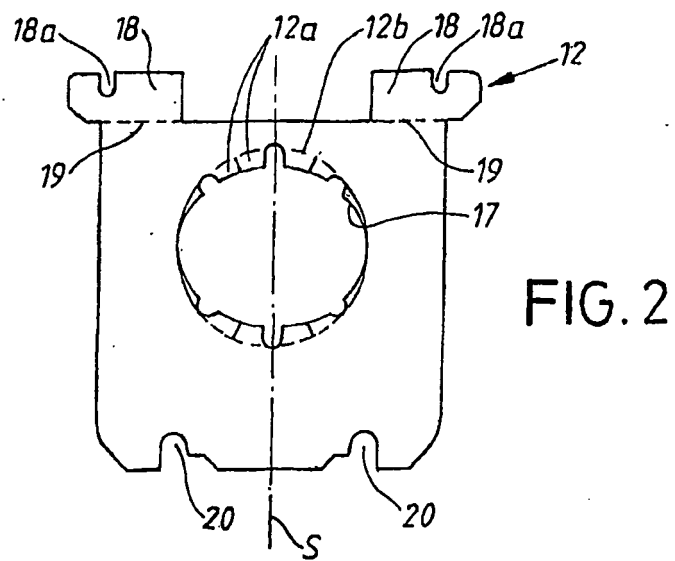
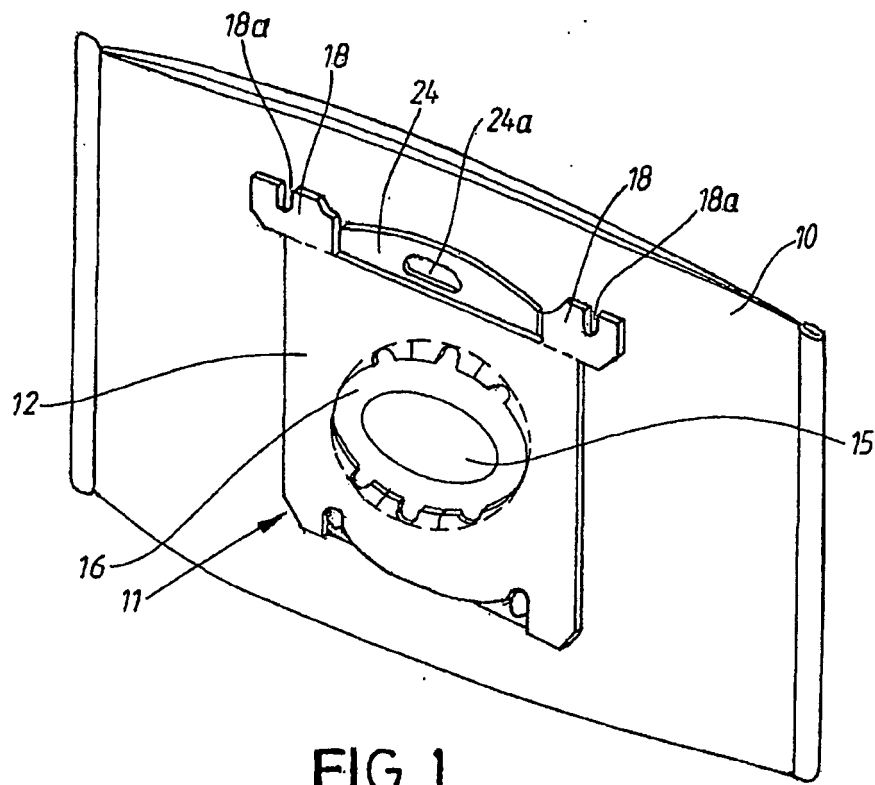
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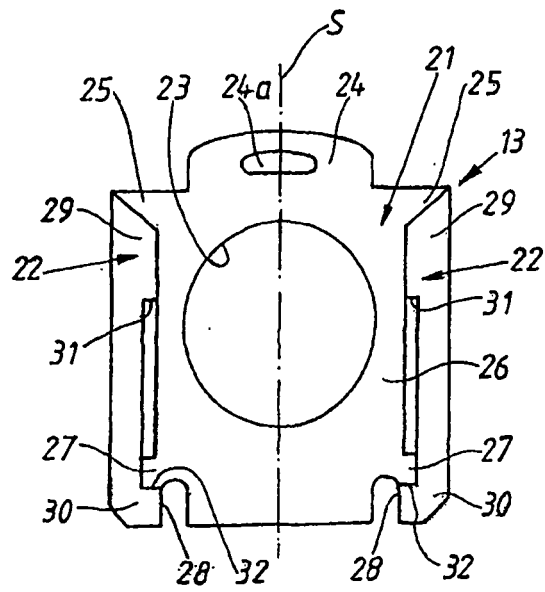


FIG. 3

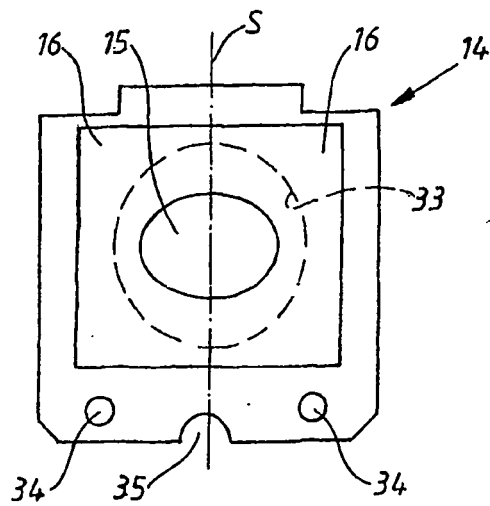


FIG. 4

REFERENCES CITED IN THE DESCRIPTION

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