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(54) **Dust container for a vacuum cleaner**

Staubbeutel für Staubsauger

Sac à poussières pour aspirateur

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Description

[0001] This invention relates to a dust container comprising a bag of air pervious material, the opening of the container being covered by a plate of comparatively stiff material the plate having an inlet opening which is connectable to an air inlet sleeve of a vacuum cleaner, the inlet opening being provided with a first and a second elastic membrane each having an opening for taking up the inlet sleeve, first and second opposite flaps of comparatively stiff material being arranged between the membranes so that they at least partly cover the openings of the membranes.

[0002] Dust containers of the type mentioned above are previously known, see for instance US 5039324. The purpose of the flaps is that they shall close the openings of the membranes when the sleeve is pulled out from the container and hence prevent dust from leaving the container when it is removed from the vacuum cleaner and during further handling. The flaps become closed because the membrane facing the bag by its elasticity moves the flaps back to their original positions in which they are in the same plane as the plate.

[0003] It has however proved that dust despite the existence of the flaps disappear from the outlet opening when the container has been removed which depends on that the flaps move with respect to each other thereby forming a slot through which dust can blow out.

[0004] The purpose of this invention is to achieve a sealing arrangement for the inlet opening which gives a far better sealing than previously known arrangements thereby making the handling of the filled dust container more hygienic than before. This is achieved by means of a device having the characteristics specified in independent claim 1.

[0005] The dependent claims specify preferred embodiments of the container of claim 1.

[0006] An embodiment of the invention will now be described with reference to the accompanying drawing on which Fig. 1 in a perspective view shows the entire vacuum cleaner, Fig. 2 is an elevation view of the plate belonging to the dust container before it is used, Fig. 3 is a view from the middle part of the rear side of the plate before the dust container is used, Fig. 4 is a partly exploded perspective view showing the central part of the plate before it has been used, Fig. 5 shows the same view when the dust container has been used whereas Fig. 6 is a section on the central part of the plate when the vacuum cleaner has been used i.e. when the sleeve belonging to the cover of the vacuum cleaner is swung out from the dust container.

[0007] As appears from the figures the dust container 10 comprises a bag 11 of air pervious material such as filterpaper whose opening is covered by a plate 12 of comparatively stiff material for instance cardboard or plastic. The plate 12 comprises an upper and a lower layer 12a and 12b which are fixed to each other preferably by glueing. The two layers 12a and 12b each have

an inlet opening 13a and 13b which are coaxial with each other. The inlet openings 13a, 13b are partly covered by two flexible membranes 14, 15 each having a central circular opening 14a, 15a the first membrane being fastened and clamped between the two layers 12a and 12b at an area around the inlet openings 13a, 13b. The second membrane 15 is fixed at the lower side of the plate so that the central membrane openings 14a, 15a are aligned thereby allowing an inlet sleeve belonging to the vacuum cleaner to be inserted into and sealed from the openings.

[0008] From the lower layer 12b facing the inner side of the bag two opposite tongues being shaped as flaps 16a and 16b resp. extend between the membranes 14, 15 towards the middle part of the inlet openings. The outer end of the first flap 16a has a U-shaped recess whereas the outer end of the second flap 16b is shaped as a complementary U-shaped part so that the ends of the two flaps together form a mainly circular area which is somewhat larger than the membrane openings 14a, 15a.

[0009] The first flap 16a further has a third membrane 17 which is placed on the side facing the bag 11 this membrane preferably comprising the part which is stamped out from the membrane 14 or 15 to create the membrane openings 14a, 15a. The third membrane which is preferably glued on the first flap 16a will thus overbridge the open part of the end of the first flap and serve as a support for the end of the second flap 16b before the dust container is inserted into the vacuum cleaner.

[0010] The device operates in the following manner. The dust container is in the usual way inserted into a space used for this purpose in a vacuum cleaner after which the associated cover, which is pivotally arranged in the vacuum cleaner and which is provided with an inlet sleeve 18 extending into the space, is closed. This means that the sleeve is inserted through the membrane opening 14a, 15a so that the membrane will surround the sleeve and seal against it. During this movement the sleeve will also move the two flaps 16a and 16b and the third membrane from a position where they are mainly placed in the same plane, that is the position shown in Fig. 4, to withdrawn positions on each side of the sleeve.

[0011] When the cover is opened in order to take out the dust container 10 the sleeve will be withdrawn from the inlet openings 13a, 13b thereby bringing with it the parts of the two membranes 14, 15 which are positioned closest to the openings 14a, 15a. Thus the two flaps 16a, 16b will be moved outwardly by the second membrane 15. When the part of the sleeve which in Fig. 6 is placed at the top is free from the flap 16a the flap will together with the membrane 17 fall back to their original positions, that is in the same plane as the plate 12, whereas the flap 16b is still in touch with the lower part of the sleeve and thus is directed inwardly towards the dust bag. When the sleeve 18 then is completely withdrawn from the dust container the flap 16b will follow

and by means of the membrane 15 be pressed towards the lower side of the membrane 17. This means that the third membrane 17 will serve as a sealing preventing the two flaps 16a, 16b from separating when the bag is exposed for an inner overpressure during handling. In other words an almost complete closure of the bag is achieved which makes the handling of the container more hygienic than before.

[0012] It should be mentioned that it of course is possible to vary the geometry of the two flaps and the membrane in a suitable way so that the desired function is achieved.

Claims

1. Dust container comprising a bag (11) of air pervious material the opening of the bag being covered by a plate (12) of comparatively stiff material, the plate having an inlet opening (13a, 13b) which is connectable to an air inlet sleeve of a vacuum cleaner, the inlet opening being provided with a first and a second elastic membrane (14, 15) each having an opening (14a, 15a) for taking up the inlet sleeve, first and second opposite flaps of comparativeley stiff material being arranged between the membranes (14, 15) so that they at least partly cover the openings (14a, 15a) of the membranes, **characterized in** that one side of the first flap (16a) is provided with a third elastic membrane (17) which, when the container is not used, at least partly overlaps or is overlapped by the second flap (16b).
2. Dust bag according to claim 1, **characterized in** that the third membrane (17) is arranged at the side of the first flap (16a) facing the inside of the bag.
3. Dust bag according to claim 1 or 2, **characterized in** that the third membrane (17) has a shape corresponding to the opening (14a, 15a) of the first or second membrane (14, 15).
4. Dust bag according to any of the previous claims, **characterized in** that the two flaps (16a, 16b) are shaped as two opposite tongues extending from the plate (12).
5. Dust bag according to any of claims 1-4, **characterized in** that the two flaps (16a, 16b) together form a plate which at least covers one of the two membrane openings (14a, 15a).
6. Dust bag according to claim 4, **characterized in** that the plate has a mainly circular shape.
7. Dust bag according to claim 5, **characterized in** that the area of the first flap (16a) which at least partly covers the membrane opening has a mainly U-

shaped recess whereas the second flap (16b) has a corresponding shape.

Patentansprüche

1. Staubbehälter, welcher einen Beutel (11) von luftdurchlässigem Material umfaßt, wobei die Öffnung des Beutels durch eine Platte (12) aus vergleichsweise steifem Material abgedeckt ist, und die Platte eine Einlaßöffnung (13a, 13b) aufweist, welche mit einem Lufteinlaßrohr eines Staubsaugers verbindbar ist, und die Einlaßöffnung mit einer ersten und einer zweiten elastischen Membran (14, 15) versehen ist, von denen jede eine Öffnung (14a, 15a) zur Aufnahme des Einlaßrohres, sowie erste und zweite sich gegenüberliegende Klappen aus vergleichsweise steifem Material aufweisen, welche zwischen den Membranen (14, 15) so angeordnet sind, daß sie zumindest teilweise die Öffnungen (14a, 15a) der Membranen abdecken, **dadurch gekennzeichnet, daß** eine Seite der ersten Klappe (16a) mit einer dritten elastischen Membran (17) versehen ist, welche, wenn der Behälter sich nicht in Gebrauch befindet, zumindest teilweise die zweite Klappe (16b) überlappt oder durch diese überlappt wird.
2. Staubbehälter nach Anspruch 1, **dadurch gekennzeichnet, daß** die dritte Membran (17) an der Seite der ersten Klappe (16a) angeordnet ist und zur Innenseite des Beutels weist.
3. Staubbehälter nach Anspruch 1 oder 2, **dadurch gekennzeichnet, daß** die dritte Membran (17) eine Form aufweist, die der Öffnung (14a, 15a) der ersten oder zweiten Membran (14, 15) entspricht.
4. Staubbehälter nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, daß** die beiden Klappen (16a, 16b) wie zwei sich gegenüberliegende Zungen, die von der Platte (12) ausgehen, geformt sind.
5. Staubbehälter nach einem oder mehreren der Ansprüche 1 bis 4, **dadurch gekennzeichnet, daß** die beiden Klappen (16a, 16b) zusammen eine Platte bilden, welche zumindest eine der beiden Membranöffnungen (14a, 15a) abdeckt.
6. Staubbehälter nach Anspruch 4, **dadurch gekennzeichnet, daß** die Platte eine im wesentlichen kreisrunde Form aufweist.
7. Staubbehälter nach Anspruch 5, **dadurch gekennzeichnet, daß** die Fläche der ersten Klappe (16a), welche zumindest teilweise die Membranöffnung abdeckt, eine im wesentlichen U-förmige Ausneh-

mung aufweist, während die zweite Klappe (16b) eine korrespondierende Form besitzt.

Revendications

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1. Récipient à poussière comprenant un sac (11) composé d'une matière perméable à l'air, l'ouverture du sac étant recouverte d'une plaque (12) de matière relativement rigide, la plaque ayant une ouverture d'entrée (13a, 13b) susceptible d'être reliée à un manchon d'arrivée d'air d'un aspirateur, l'ouverture d'entrée étant munie d'une première et d'une deuxième membrane élastique (14, 15), chacune comprenant une ouverture (14a, 15a) pour accueillir le manchon d'arrivée d'air, des premier et deuxième rabats opposés de matière relativement rigide étant disposés entre les membranes (14, 15) de manière à recouvrir au moins partiellement les ouvertures (14a, 15a) des membranes, caractérisé en ce qu'un côté du premier rabat (16a) est muni d'une troisième membrane élastique (17) qui, lorsque le récipient n'est pas utilisé, recouvre au moins partiellement le deuxième rabat (16b) ou est recouverte par lui. 10 15 20 25
2. Sac à poussière selon la revendication 1, caractérisé en ce que la troisième membrane (17) est disposée du côté du premier rabat (16a) faisant face à l'intérieur du sac. 30
3. Sac à poussière selon la revendication 1 ou 2, caractérisé en ce que la troisième membrane (17) a une forme correspondant à l'ouverture (14a, 15a) de la première ou deuxième membrane (14, 15). 35
4. Sac à poussière selon l'une quelconque des revendications précédentes, caractérisé en ce que les deux rabats (16a, 16b) ont la forme de deux languettes opposées s'étendant depuis la plaque (12). 40
5. Sac à poussière selon l'une quelconque des revendications 1 à 4, caractérisé en ce que les deux rabats (16a, 16b) forment ensemble une plaque qui recouvre au moins une des deux ouvertures de membrane (14a, 15a). 45
6. Sac à poussière selon la revendication 4, caractérisé en ce que la plaque a une forme globalement circulaire. 50
7. Sac à poussière selon la revendication 5, caractérisé en ce que la zone du premier rabat (16a) qui recouvre au moins partiellement l'ouverture de membrane comporte un renforcement globalement en forme de U tandis que le deuxième rabat (16b) a une forme correspondante. 55

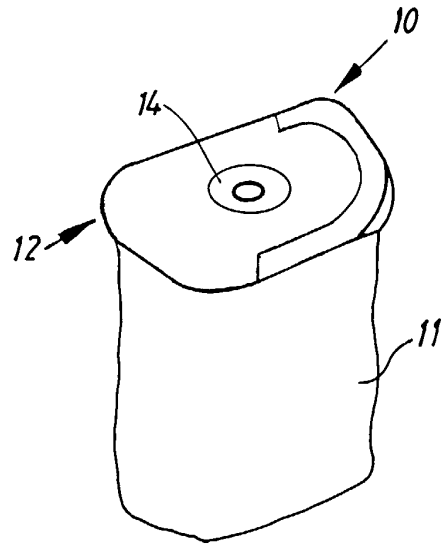


Fig.1

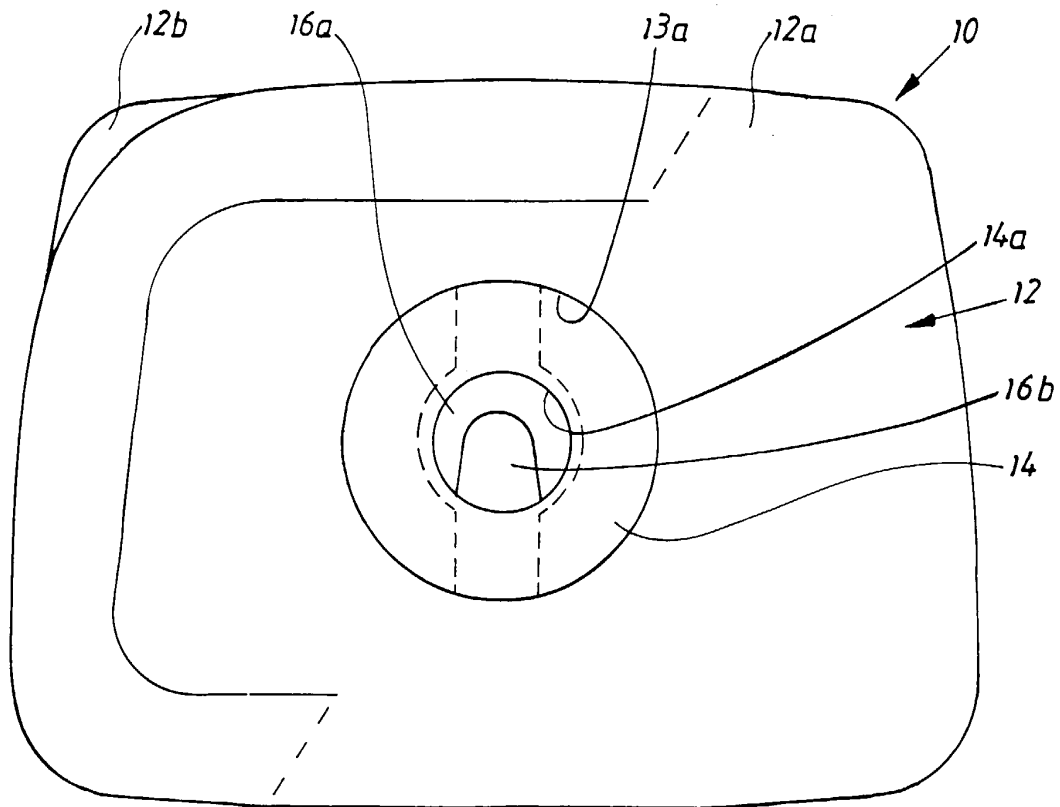


Fig.2

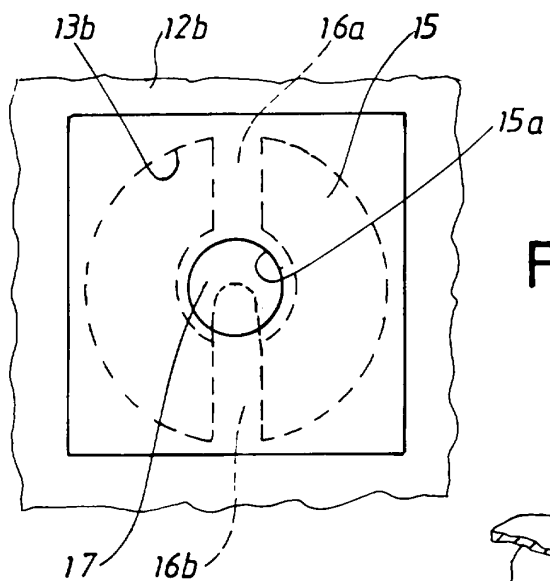


Fig. 3

Fig. 4

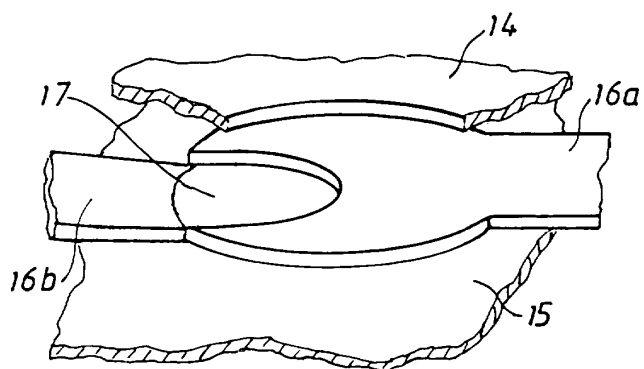
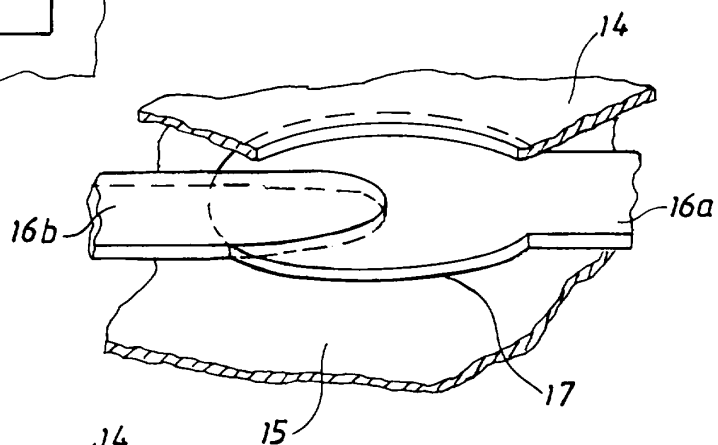


Fig. 5

Fig. 6

