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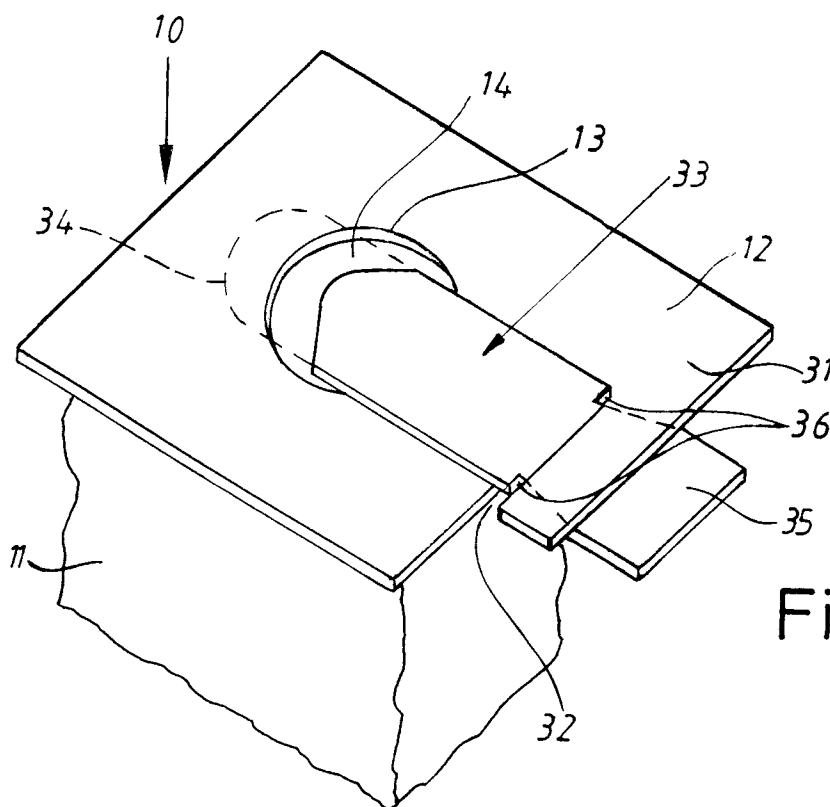
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### (54) Closure device for a vacuum cleaner dust bag

(57) This invention relates to a closure device for a vacuum cleaner dust bag (10) comprising a container (11) of air pervious material being secured to a collar (12) of comparatively stiff material. The collar is provided

with an inlet opening (13) through which dust laden air flows into the bag. The device also comprises a separate cover plate (33) closing the inlet opening (13) and being provided with an area (35) operating as a handle when the bag is removed from the vacuum cleaner



**Fig. 3**

## Description

This invention relates to a closure device for a vacuum cleaner dust bag comprising a container of air pervious material being secured to a collar of comparatively stiff material the collar being provided with an inlet opening through which dust laden air flows into the bag.

Closure devices for vacuum cleaner dust bags are previously known. These closures for instance comprise different types of elements shaped as curtains which are manually acted on to cover the opening when the bag is removed from the vacuum cleaner. It is also previously known to provide the collar with a tongue having such dimensions that it can be folded and inserted into the inlet opening thereby covering it or to use an adhering tongue being larger than the opening and when being folded towards the plate covers the opening.

Even if these devices cover the inlet opening thereby preventing dust from escaping when handling the vacuum cleaner dust bags they are still not completely hygienic since the dust bags with handle, if any, are placed in a chamber which is passed by the air to the fan unit. Although this air has been filtered by flowing through the filter layers of the vacuum cleaner dust bag it contains smaller particles which are deposited on all parts of the bag and also on the parts which are gripped when the bag is removed from the chamber.

The purpose of this invention is to achieve a simple closure means and handle arrangement which is not a part of the bag but which is stored outside the vacuum cleaner until it is used and which hence admits a completely hygienic handling of the vacuum cleaner dust bag. This is achieved by means of a device having the characteristics mentioned in the claims.

Three embodiments of the invention will now be described with reference to the accompanying drawing on which Fig. 1 in a partly broken perspective view shows a first embodiment of the invention whereas Fig. 2 - 3 in the same view shows two additional embodiments of the invention.

As appears from Fig. 1 the vacuum cleaner dust bag 10 comprises a container 11 of air pervious material which is secured on a comparatively stiff collar 12 preferably of cardboard or plastic. This collar has an inlet opening 13 for dust laden air, the opening preferably being provided with a rubber membrane 14 with a central hole. The membrane partly covers the inlet opening 13 and serves in a conventional way as a sealing against a sleeve, not shown, through which the air flows into the dust container. The collar 12 also has four elongated through holes 15 whose purpose will be described below.

A flat cover plate 16 of comparatively stiff material such as cardboard or plastic belongs to the vacuum cleaner dust bag and the cover plate has a handle 17 and several clamping means such as hooks 18. Each hook is L-shaped and has a leg which is mainly parallel with the plane of the cover plate. This leg is arranged at

such a distance from the surface of the cover plate that the collar 12 can be inserted between the leg and said surface. The hooks are placed in a corresponding way as the holes 15 such that the hooks can be inserted through the holes and by moving the cover plate parallel to the plane of the collar lock the cover plate to the collar by means of clamping action. In such a way the opening is closed and the bag is removed from the vacuum cleaner by means of the handle 17.

In the embodiment shown in Fig. 2 the cover plate 24 comprises a first mainly flat part 25 and a second flat part 26 the lastmentioned part being angularly displaced with respect to the plane of the first part in order to form a handle. On the lower side of the part 25 there is a L-shaped hook 27 which via a first leg 28 is fastened to the plate. The second leg 29 of the hook is inclined with respect to the first leg and directed somewhat inwards towards the lower surface of the plate and has at its outer end a portion 30 which extends outwardly from the plane of the plate. The shortest distance between the second leg 29 and the part 25 is somewhat less than the thickness of the collar 12.

When removing a vacuum cleaner dust bag the cover plate 24 is placed on the collar 12 by means of the second part 26 serving as a handle so that the hook 27 enters into the opening 13 after which the cover plate is moved parallel to the plane of the collar which is obliquely downwards to the right in the figure. Thus the collar 12 will be clamped between the leg 29 and the downwardly facing surface of the cover plate 24 and the complete bag can be removed from the vacuum cleaner by holding the second part 26. The cover plate might be removed from the collar when the bag is thrown away and be used again. According to this embodiment the cover plate is preferably made of plastic or metal.

According to the embodiment shown in Fig. 3 the collar 12 is provided with a L-shaped extending portion 31 so that a slot 32 which is open sideways is formed between one edge of the plate and the extending portion. The cover plate 33 which in this case preferably is made of cardboard or plastic has an elongated shape with one end 34 being rounded. The other end 35 of the cover plate serves as a handle and is provided with a recess 36 at each side edge serving as an abutting surface.

The cover plate 33, which is preferably delivered together with the vacuum cleaner dust bags and might be a tear-off portion of the bag, is inserted with its rounded end 34 through the opening 13 and the opening of the rubber membrane 14 so that the rubber membrane is tensioned towards the cover plate. Then the cover plate is inserted sideways into the slot 32 so that the other end is placed on the lower side of the extending portion 31. The recess 36 forming the abutting surface can thus be moved to join the upper part of the extending portion 31 which means that movement of the cover plate with respect to the collar 12 in the direction obliquely downwards to the right in the figure is prevented. The bag can

then be removed from the vacuum cleaner by using the second part 35 as a handle. Preferably the cover plate is made of cardboard and is thrown away together with the vacuum cleaner dust bag.

It should be mentioned that the cover plate is preferably delivered together with the vacuum cleaner dust bag. When the bag is removed and a new bag is inserted into the vacuum cleaner the cover plate is taken from the new bag and is used to close the old bag.

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## Claims

1. Closure device for a vacuum cleaner dust bag (10) comprising a container (11) of air pervious material being secured to a collar (12) of comparatively stiff material the plate being provided with an inlet opening (13) through which dust laden air flows into the bag, **characterized in** that it also comprises a separate cover plate (16,24,33) closing the inlet opening (13) and being provided with an area (17,26,35) operating as a handle when the bag is removed from the vacuum cleaner. 15
2. Device according to claim 1, **characterized in** that the cover plate is provided with one or several hooks (18,27) which are inserted through the inlet opening (13) of the collar (12) and/or through holes (15) arranged in the collar. 20
3. Device according to any of the preceding claims, **characterized in** that the cover plate (16,24) is fixed to the collar (12) by clamping action. 25
4. Device according to claim 1, **characterized in** that the cover plate has a first end (34) which is inserted through the inlet opening (13) and a second end (35) which is removably secured to the collar (12). 30
5. Device according to claim 4, **characterized in** that the cover plate has a slot (32) which is open sideways and through which the second end (35) can be inserted so that an area of the cover plate situated between the ends rests against the surface of the collar facing outwards. 35
6. Device according to any of the preceding claims, **characterized in** that the cover plate is a part which is separable from the bag. 40

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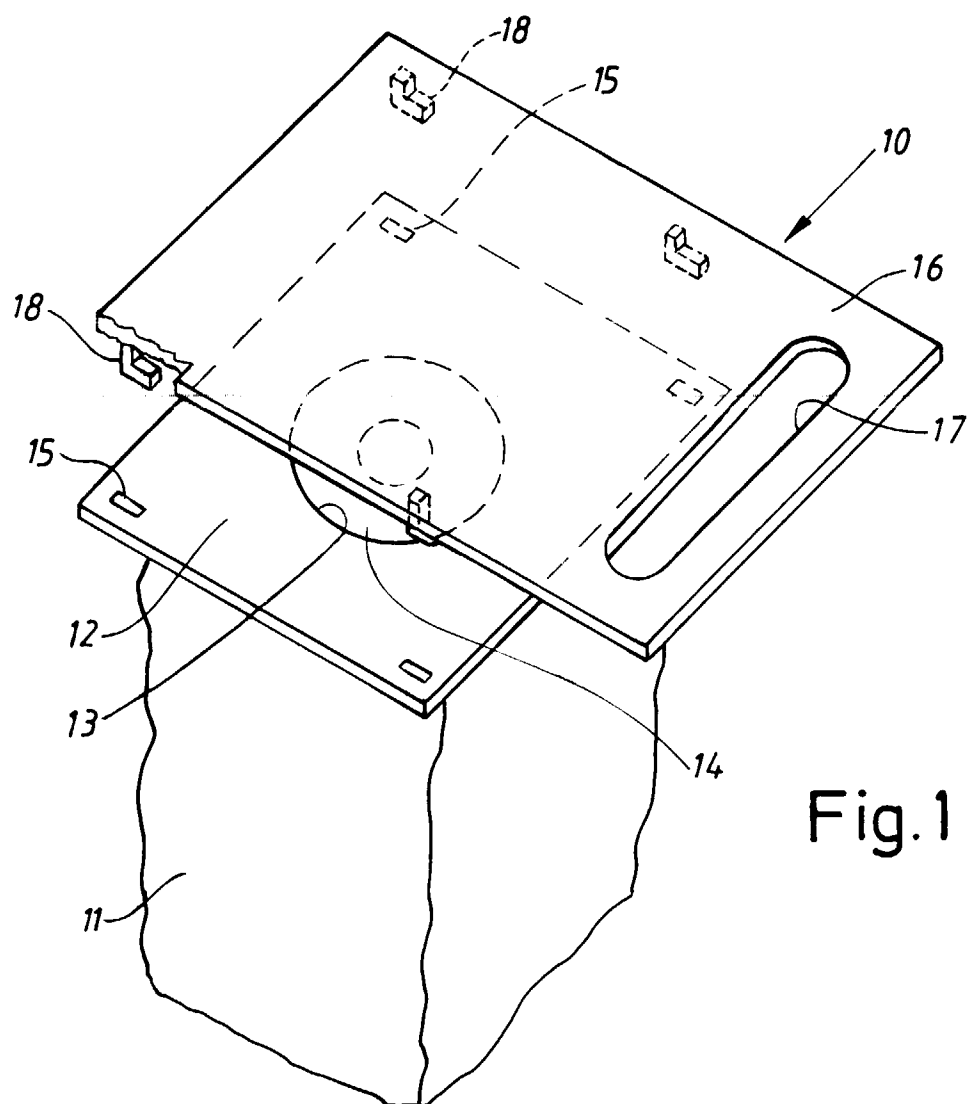


Fig.1

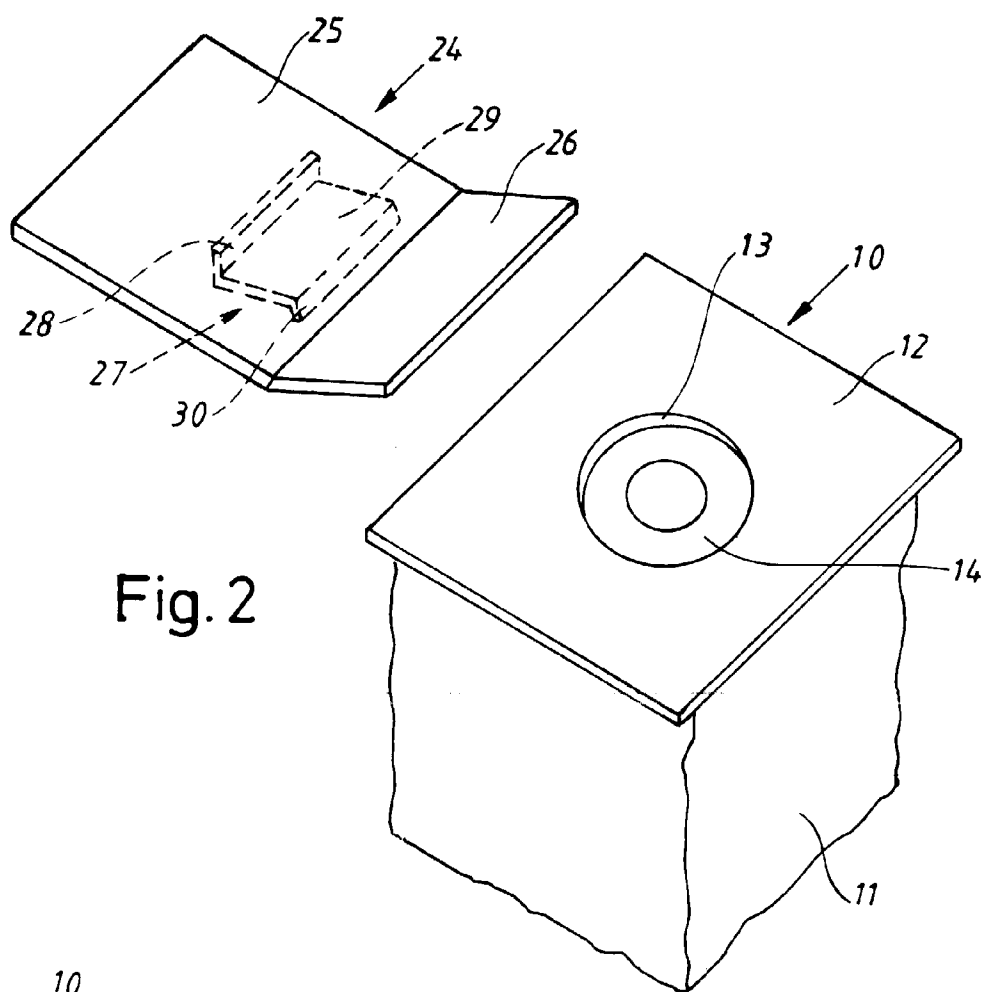


Fig. 2

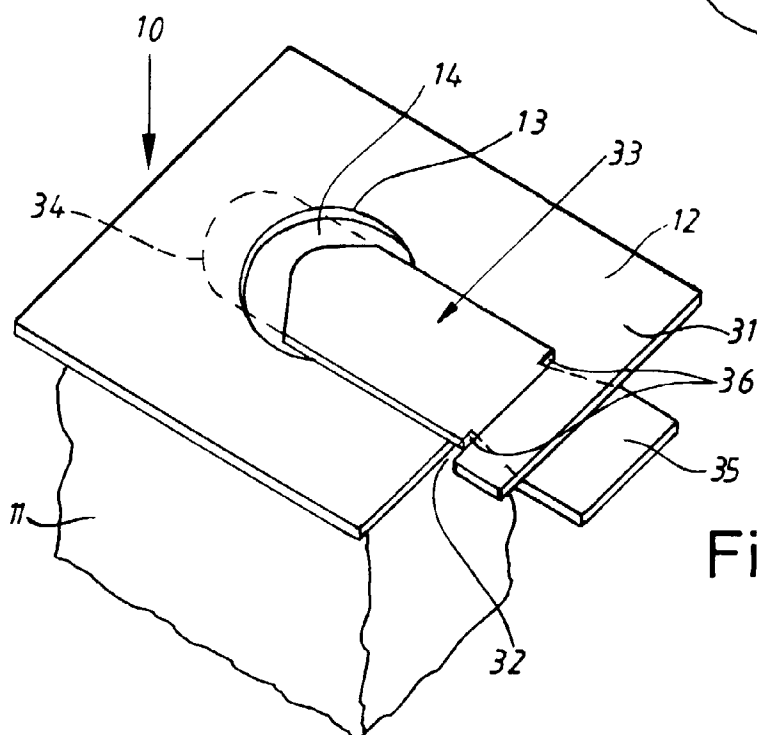


Fig. 3