Oct. 26, 1954 W. O. LANGILLE 2,692,781

CONNECTOR DEVICE FOR VACUUM CLEANER DUST BAGS

Filed Sept. 27, 1950

Fig. 1.

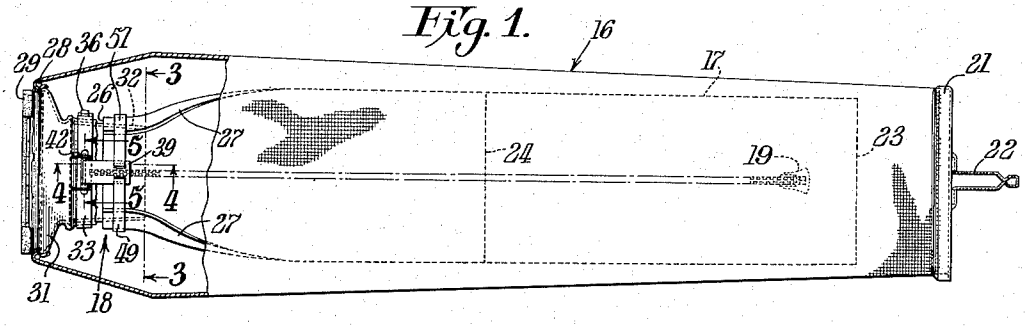


Fig. 2.

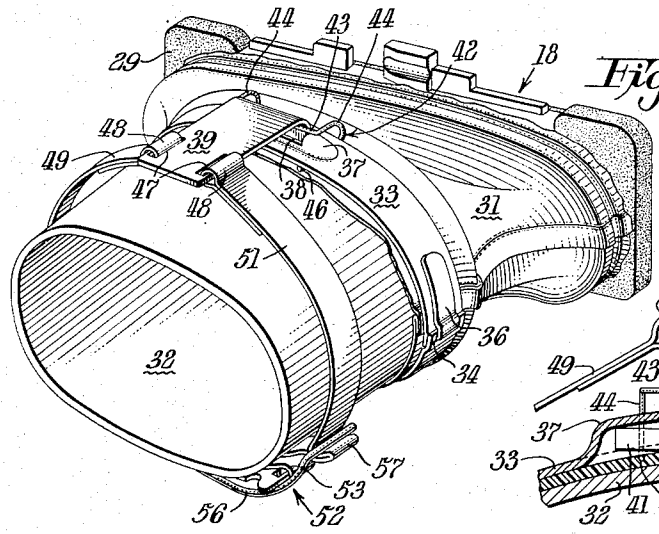
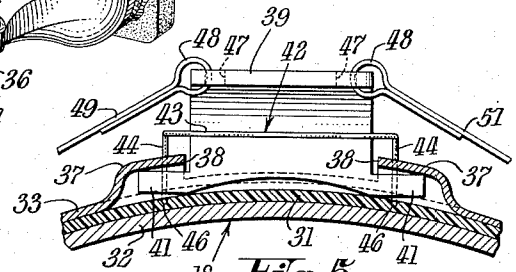


Fig. 5.



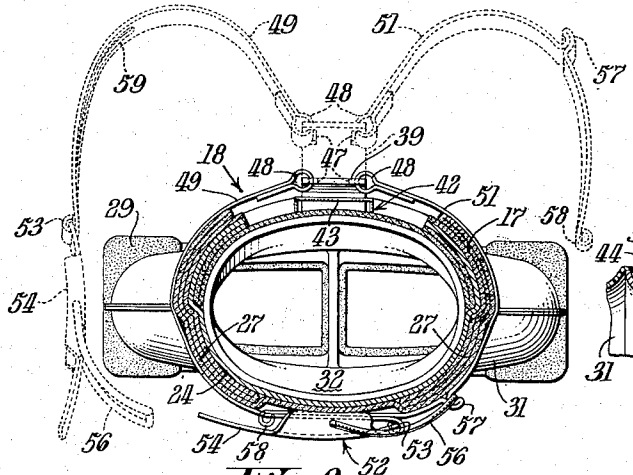


Fig. 3.

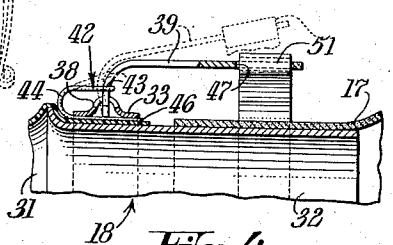


Fig. 4

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CONNECTOR DEVICE FOR VACUUM CLEANER DUST BAGS

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Application September 27, 1950, Serial No. 186,968

4 Claims. (Cl. 285—84)

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This invention relates to dust filtering bags for vacuum cleaners and more particularly to connector devices employed to connect and disconnect a disposable dust bag to the discharge duct of a vacuum cleaner, and one of the primary objects of the invention is to provide an improved and inexpensive device of this character.

Another object of the invention is to provide a vacuum-cleaner bag sleeve and associated clamp, that is not only designed for easy manipulation, but which is also adapted securely to hold the mouth of a dust bag to the exhaust duct of a vacuum cleaner.

A more specific object of the invention is to provide a vacuum cleaner bag clamp which, when unlatched, will automatically move away from the bag, thereby facilitating the removal of a filled dust bag and the installation of an empty replacement bag.

With the above and other objects in view, as will hereinafter appear, the invention comprises the devices, combinations, and arrangements of parts hereinafter set forth and illustrated in the accompanying drawings of a preferred embodiment of the invention, from which the several features of the invention and the advantages attained thereby will be readily understood by those skilled in the art.

In the drawings:

Fig. 1 is a top plan view of a vacuum cleaner dust bag, showing an inner disposable bag connected to an outer appearance bag by means of a connector sleeve and clamp embodying the present invention, portions of the outer bag being broken away to show internal details,

Fig. 2 is an enlarged perspective view of the connector sleeve and clamp shown in Fig. 1,

Fig. 3 is an enlarged sectional view taken on the line 3—3 of Fig. 1, and showing the disengaged position of the bag clamp in dotted lines,

Fig. 4 is an enlarged fragmentary sectional view along the line 4—4 of Fig. 1, and

Fig. 5 is an enlarged fragmentary sectional view along the line 5—5 of Fig. 1.

Referring more specifically to the drawings, the invention is disclosed as comprising a more or less conventional outer appearance bag 16, and an inner disposable bag 17, the lower or inlet ends of the two bags being designed to be connected by and held to the exhaust duct of a vacuum cleaner (not shown) by means of a connector sleeve and clamp arrangement, indicated generally by the numeral 18.

The outer appearance bag 16, preferably, is made from a single piece of loosely woven pervious material, are joined by a slide-fastener 19. The upper end of the outer bag 16 is engaged by a conventional clamp 21 that is connected, in a known manner, to a vacuum cleaner handle (not shown) by a bail 22.

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The inner disposable bag 17 forms the subject of a patent application, Serial No. 192,314, filed October 26, 1950, now Patent No. 2,637,409, and thus need not be herein described in detail. Suffice it to say, that the disposable bag 17 is formed of an inexpensive pervious material that may be thrown away when the bag is filled, and this inner bag 17 has a closed upper end 23, a cardboard trap 24 and an open mouth 26 longitudinally folded at 27.

The lower end of the outer appearance bag 16 is secured by a wire 28 to an apertured bag-connector plate 29, which may be a duplicate of the device described and claimed in Patent No. 2,523,739.

The same wire 28, that secures the outer bag 16 to the connector 29, also secures the lower divergent end of a substantially frusto-conical impervious flexible plastic tube 31 to the connector 29. The convergent or upper end of the tube 31 is secured to the lower flanged end of an oval or elliptical, preferably aluminum, tube or sleeve 32 by an encircling collar 33, of which one end has a hole 34 for receiving a tongue 36 of the collar 33. An intermediate portion of the collar 33 is raised as at 37—37 and slotted as at 38, for pivoting one end of an L-shaped lever or carrier-member 39 having a pair of hinge pins 41—41 entering the raised portions 37—37. A wire spring 42 for biasing the lever 39 has a straight portion 43 that is hooked around the inner surface of the L-shaped bracket 39 adjacent the knee thereof. At the two ends of the straight portion 43, the spring 42 bends at right angles and forms a pair of spaced U-shaped members 44—44. The ends 46—46 of these U-shaped members extent under the collar 33 and thus are clamped to the outer surface of the upper or convergent end of the flexible tube 31 by the same clamping force that clamps the upper end of the tube 31 to the lower flanged end of the aluminum sleeve 32.

The free end of the L-shaped bracket 39 is provided with a pair of longitudinally extending and laterally spaced slots 47—47 that provide means for pivotally mounting the eyed ends 48—48 of two clamping bands 49 and 51. The free ends of the clamping bands 49 and 51 are joined by a modified form of trunk type latch 52.

To form the trunk latch 52, the clamping band 49 is provided at one end with an eye 53, by means

of which one end of a channel shaped lever 54 is pivotally connected to the free end of the band 49. A wire-yoke 56 is pivotally mounted in holes formed in the side webs of the lever 54. The band 51, at a location intermediate its ends, is formed into a hook 57 for engagement by the yoke 56 and the free end of the band 51 terminates in a small turned-up lip or nib 58 that is designed to enter and be guided by a long slot 59 formed longitudinally of the band 49.

Assuming that the bags 16 and 17 are connected to the exhaust duct of a vacuum cleaner and that the disposable bag 17 is filled with dirt, the dirt-filled bag 17 is removed in the following manner. First, the runner of the slide-fastener 19 is moved from the top to the bottom of the bag 16. This exposes the inner bag 17 and the connector sleeve and clamp 18. Then the trunk latch 52 is opened by moving the lever 54 away from the position shown in solid lines in Fig. 3, thereby freeing the yoke 56 from the hook 57 and permitting relative movement of the bands 49, 51, to disengage the bag. As soon as the trunk latch has been fully opened, the biasing spring 42 moves the L-shaped bracket 39 from the position shown by solid lines in Fig. 3, to the position shown by dotted lines. This moves the bands 49 and 51 from the vicinity of the mouth of the bag 17 and thus makes removal of the full bag 17 an easy task. Then an empty disposable bag 17 may easily be slipped over the free upper end of the sleeve 32 and the bands 49—51 are securely fastened in place by the trunk latch 52. It should be noted that the bracket 39, the bands 49 and 51, and the trunk latch members 52 are biased away from the aluminum tube 32 by the spring 42. This makes it easy to connect the mouth 26 of the bag 17 to the tube 32.

Dotted line portions of Figs. 3 and 4 show that, when the trunk latch 52 is open, space in the vicinity of the free end of the aluminum sleeve 32 is unobstructed by bag clamping members. This advantageous result is obtained because the clamping bands 49 and 51 are hinged on the eyed ends 48—48 and because the L-shaped lever 39 is biased backwardly on its hinge-pins 41—41 by the spring 42.

Having thus set forth the nature of the invention, what I claim herein is:

1. A dust-bag connecting device for vacuum cleaner bags, comprising, an apertured connector plate, an impervious flexible tube of which one end is connected to said plate, a rigid hollow sleeve of which one end enters said flexible tube, a collar clamping said flexible tube to said rigid sleeve, an L-shaped lever hinged to said collar, a spring held in place by said collar and biasing said lever to a position remote from said rigid sleeve, two clamp member bands hinged to the free end of said L-shaped lever and embracing said rigid sleeve, and a trunk-latch connecting the free ends of said clamping bands.

2. A dust-bag connecting device for vacuum cleaner bags, comprising, an apertured connector plate, an impervious flexible tube of which one end is connected to said plate, a rigid hollow sleeve of which one end enters said flexible tube, a collar clamping said flexible tube to said rigid sleeve, an L-shaped lever having two legs of which one leg is hinged to said collar, a U-shaped spring having two U-shaped legs held between said collar and said sleeve, said spring biasing said lever to a position remote from said sleeve, two clamp members hinged to the free leg of said L-shaped lever and selectively arranged to embrace said sleeve and to be moved to a location remote from said sleeve when said spring moves said lever to a position remote from said sleeve, and a trunk-latch selectively connecting or disconnecting the free ends of said clamp members.

3. A connecting device for vacuum cleaner dust bags, comprising, means for connecting said device to a vacuum cleaner, a flexible tube of which one end is connected to said last named means, a rigid hollow sleeve of which one end enters said flexible tube, a clamping means for securing said flexible tube to said rigid sleeve, a two-ended lever of which one end is hinged to said clamping means, a spring biasing said lever to a position remote from said rigid sleeve, two clamp members hinged to the free end of said two-ended lever, said clamp members embracing said rigid sleeve, and a connecting mechanism releasably connecting the free ends of said clamping members.

4. A connecting device for vacuum cleaner dust bags, comprising, means for connecting said device to a vacuum cleaner, a flexible tube of which one end is connected to said last named means, a rigid hollow sleeve of which one end enters said flexible tube, a clamping means for securing said flexible tube to said rigid sleeve, a two-armed lever of which one arm is hinged to said clamping means, a U-shaped spring held between said clamping means and said sleeve, said spring biasing said lever to a position remote from said sleeve, two clamp members hinged to the free leg of said two-armed lever and selectively arranged to embrace said sleeve and to be moved to a location remote from said sleeve when said spring moves said lever to a position remote from said sleeve, and a connecting mechanism selectively connecting or disconnecting the free ends of said clamp members.

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