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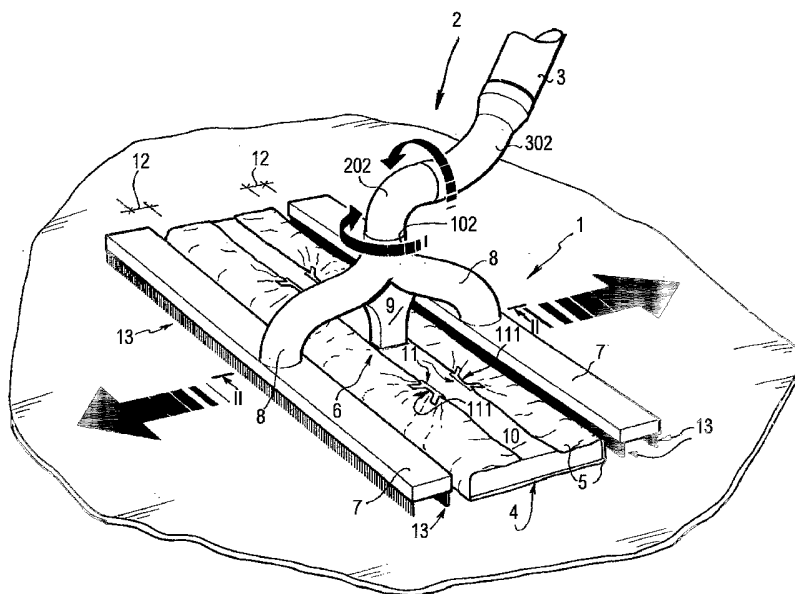
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(54) Title: ACCESSORY FOR VACUUM-CLEANER HOUSEHOLD APPLIANCES



(57) Abstract: The multifunction cleaner accessory (1) for vacuum cleaner household appliances comprises a pipe union (2) for engaging with the end of a conventional suction hose (3) normally supplied with vacuum-cleaner household appliances, a central element (4) holding dust-capturing cloth (5), the clothes (5) being fittable thereto in a removable manner, the central element (4) being integrally fixed to said pipe union (2) by fixing means (6), at least one pair of suction mouths means (7) parallel supported by opposite sides in relation to said central element (4), a pair of pipe trunks (8) for connecting and supporting said suction mouths means (7) on said engaging pipe union (2).

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ACCESSORY FOR VACUUM-CLEANER HOUSEHOLD APPLIANCES

This invention relates to a cleaner accessory for vacuum-cleaner household appliances.

Have been known for some time vacuum-cleaner household
5 appliances that, in order to perform their function better, are equipped by the manufacturers with accessories to be applied to the ends of the pipes that usually protrude from the body of the household appliance and that are usually connected with the suction motor unit thereof.

10 The above-said accessories comprise nozzles with more or less wide openings, brushes with different shapes and dimensions, rigid and flexible mouths and other things.

One of the problems that is most keenly felt by users is that even using particularly high-performance vacuum-
15 cleaner household appliances, the dust is not completely sucked because a certain quantity of dust is raised into the air by the action of contact of the accessory with the surface to be cleaned and then falls again when this action ceases.

20 Furthermore, a certain quantity of air is ejected from the body of the vacuum-cleaner, which contributes to create whirls in the environment, which tend to raise the dust. It is, therefore, necessary to improve prior-art cleaning systems.

25 One technical aim of the present invention is to eliminate the drawbacks of the prior art.

In particular, it would be desirable to limit the raising of dust from the surface to be cleaned.

30 One object of the invention is to find a cleaning accessory for vacuum-cleaner household appliances that enables a more complete cleaning action to be performed.

This aim and these objectives are all achieved by this cleaner accessory for vacuum-cleaner household appliances as defined in the claims.

CONFIRMATION COPY

The invention may be better understood and implemented with reference to the attached drawings, which illustrate a non-limiting example of implementation of the invention, wherein:

5 Figure 1 is a perspective view of the cleaning accessory for vacuum-cleaner household appliances;

Figure 2 is a partially sectioned view, taken along a plane II-II of Figure 1.

With particular reference to the above-said figures, a
10 cleaner accessory 1 comprises a pipe union 2 for engaging the cleaner accessory 1 with the end of a conventional suction pipe 3 with which vacuum-cleaner household appliances are provided, a central support element 4 for supporting a disposable cloth 5 that can be removably
15 fitted to the central element 4 and that can be integrally fixed to the above said engaging pipe union 2 by fixing means 6.

The disposable cloth 5 is of the prior-art type and made of fabrics in synthetic-paper fibre (so-called TNT
20 fabrics) and it may be dry or dampened, in such a way as to be able to also perform washing action during removal of the dust.

The particular structure of disposable clothes of this type causes the dust attraction, which is in this way
25 significantly removed without being dispersed in the air.

Together with this central support element 4, are provided at least one pair of suction mouths 7 parallel supported on the above-said pipe union 2 at opposite sides in relation with the central element 4; the suction mouths 7
30 are supported by and connected to the pipe union 2 by a pair of connecting pipe elements 8 that are elbow-shaped.

The fixing means 6 comprises at least a shank 9 that is rigidly interposed between the pipe union 2 and the central support element 4.

The pipe union 2 comprises a first pipe segment 102, a second pipe segment 202, a third pipe segment 302 that are all consecutive to one another and are interconnected to one another in a flexible manner; the first segment 102
5 rotationally receives the second segment 202. The third segment 302 is received in a rotational manner in the second segment 202. The configuration of the segments is such that the first segment 102 is substantially at right angles to a surface to be cleaned.

10 The central element 4 comprises a flattened plate 10 whereupon the disposable cloths 5 can be wrapped up and fixed in a removable manner by relative attaching means 11 located at least on the top face of the flattened plate 10.

15 The attaching means 11 comprises a series of recesses 111 provided at their respective inlets with elastically forcible tongues (non visible in the drawings because of the particular perspective) for the pressure insertion and the retention of the edges of the disposable cloths 5.

20 In a second possible embodiment, the attaching means 11 can comprise a plurality of small tabs in a material having an adhesive contact and a pull-away removal with the edges of the disposable cloths 5, of the type known as Velcro ®.

25 In a further third possible embodiment of the invention, the attaching means 11 may comprise a plurality of pliers elements for fastening the edges of the disposable cloths 5.

30 Between the flattened plate 10 and the suction mouths 7 slits or interstices 12 are defined for the passage of the edges of the disposable cloths 5 that are wrapped around the flattened plate 10 for using the disposable cloths 5. Both the flattened plate 10 and the suction mouths 7 have a rectangular shape with the longer sides parallel to one

another, and each one of them is provided with means 13 for sliding contact with the surface to be cleaned.

Furthermore, the bottom faces of the suction mouths 7 and of the flattened plate 10 are substantially on the same
5 plane as one another.

The operation of the invention is intuitively deductible from the above disclosure and is as follows: the user engages the pipe union 2 with a conventional sucking hose of a vacuum-cleaner household appliance and applies to the
10 flattened plate 10 a disposable cloth 5 of the type that is usually commercially available, forcibly inserting the edges of the disposable cloth 5 into the recesses 11 provided for the purpose on the top face of the flattened plate 10 that is thus wrapped by the cloth 5 itself.

15 For the insertion, the edges of the disposable cloth are passed through the slits or interstices 12 defined for this purpose between the larger parallel and mutually facing sides of the suction mouths 7 and of the flattened plate 10.

20 The user then activates the motor of the vacuum-cleaner household appliance and simultaneously rubs the surface to be cleaned with the cleaner accessory 1, thereby obtaining two actions practically simultaneous: a first dust removing action with the disposable cloth 5, a second
25 suction action of any dust that has been raised. It should be noted that the double rotating articulated joint provided between the sections 102 and 202 enables the user to rotate the cleaning accessory 1 in any direction in relation to the end of the suction hose 3 that is normally
30 furnished with a conventional vacuum-cleaner household appliance, and thus to reach with the cleaning accessory 1 even the most hidden areas of the surfaces to be cleaned. It has been established that the disclosed invention achieves the proposed objects.

The device thus conceived can be modified and varied in numerous ways that all fall within the protective scope defined by the claims.

Furthermore, all the details are replaceable by other
5 technically equivalent details.

In practice, the materials used and the shapes and dimensions can be of any type according to need without thereby falling outside the protective scope of the present invention.

10 It is also pointed out that according to the state of the art, to have a similar cleaning result, there is provided only to use on the surface to be cleaned a vacuum cleaner with which is performed a first stage of suction of substantially rough and subsequently a brush for the
15 finishing operations.

Such a manner of proceeding is extremely long and tiresome in addition to requiring both the vacuum cleaner and the brush.

By contrast, according to the invention, both the rough
20 cleaning and finishing cleaning actions are obtained with a sole tool at one stroke.

CLAIMS

1. Accessory for vacuum-cleaner household appliances, comprising suction mouths means (7) for sucking particles to be removed from a surface to be cleaned by making said particles to travel through conduit means (2) communicating with said suction mouth means (7), characterised in that it further comprises, in an outer position with respect to said suction mouth means (7), removable capturing means (4, 5) for capturing further particles that have to be removed from said surface.
2. Accessory according to claim 1, wherein said capturing means comprises a support element (4) provided with attaching means (11) by which a capturing organ (5) can be assembled on/disassembled from said support element (4).
3. Accessory according to claim 2, wherein said capturing organ comprises a cloth (5).
4. Accessory according to claim 2, or 3, wherein said support element (4) has rib means (9) that interconnects said support element (4) with said conduit means (2).
5. Accessory according to any one of claims 2 to 4, wherein said suction mouth means comprises at least two suction mouths (7) parallel supported by opposite parts to said support element (4).
6. Accessory according to claim 5, wherein said conduit means (2) comprises at least two conduit segments (8), each conduit segment (8) leading to a respective suction mouth (7).
7. Accessory according to any one of claims 2 to 6, wherein said attaching means (11) comprises a plurality of recesses (111) provided at their respective inlets with elastically forcible tongues

for the pressure insertion and retention of edges of said capturing organ (5).

- 5 8. Accessory according to any one of claims 2 to 7, wherein said attaching means (11) comprises a plurality of small tabs of a material having an adhesive contact with the edges of said capturing organ (5) that are removable by pulling.
- 10 9. Accessory according to any one of claims 2 to 8, wherein said attaching means (11) comprises a plurality of pliers elements for fastening the edges of said capturing organ (5).
- 15 10. Accessory according to any one of claims 2 to 9, wherein between said support element (4) and said suction mouth means (7) interstices (12) are defined that are large enough to permit the passage of edges of said capturing organ (5).
- 20 11. Accessory according to any one of claims 2 to 10, wherein said support element (4) and said suction mouth means (7) have a rectangular plan shape with sides that are parallel to one another.
- 25 12. Accessory according to claim 11, wherein said suction mouth means (7), are supported in such a way as to offer their own greater side arranged parallel to the greater side of said support element (4).
13. Accessory according to claim 11, wherein suction mouth means (7), and said support element (4) have at least bottom sides that are substantially on the same plane as one another.

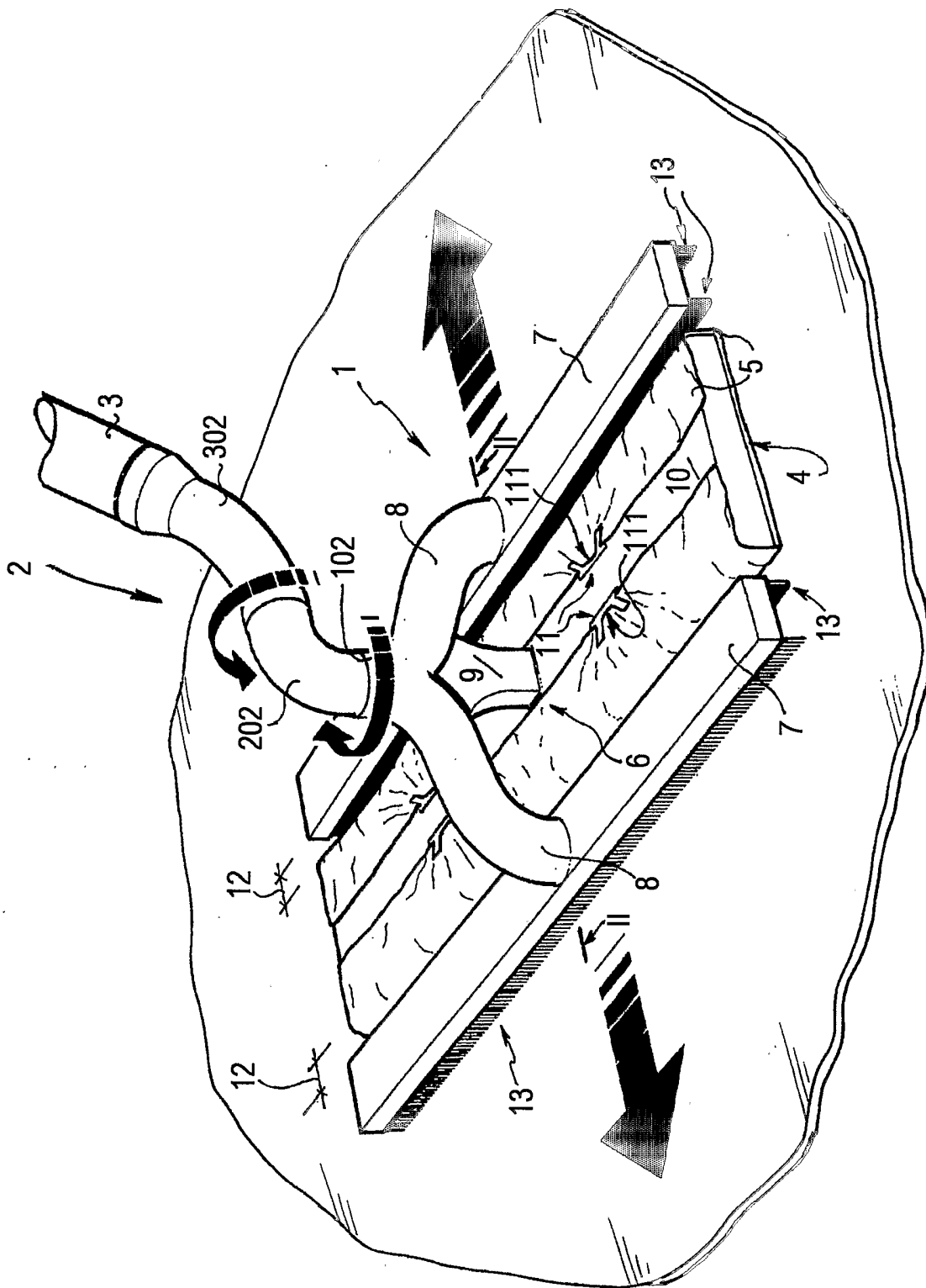


Fig. 1

