



Europäisches Patentamt
European Patent Office
Office européen des brevets



Publication number : **0 434 907 A2**

12

EUROPEAN PATENT APPLICATION

21 Application number : **90117292.4**

51 Int. Cl.⁵ : **A47L 11/30**

22 Date of filing : **07.09.90**

The title of the invention has been amended (Guidelines for Examination in the EPO, A-III, 7.3).

The application is published incomplete as filed (Article 93 (2) EPC). The point in the description or the claim(s) at which the omission obviously occurs has been left blank.

30 Priority : **07.09.89 IT 8363889**

43 Date of publication of application :
03.07.91 Bulletin 91/27

84 Designated Contracting States :
DE FR IT

71 Applicant : **GISOWATT S.P.A. INDUSTRIA
ELETTRODOMESTICI**
Via A.Colombo 223
I-21055 Gorla Minore (Varese) (IT)

72 Inventor : **Sozzi, Validio**
Via A. Colombo 223
I-21055 Gorla Minore (Varese) (IT)

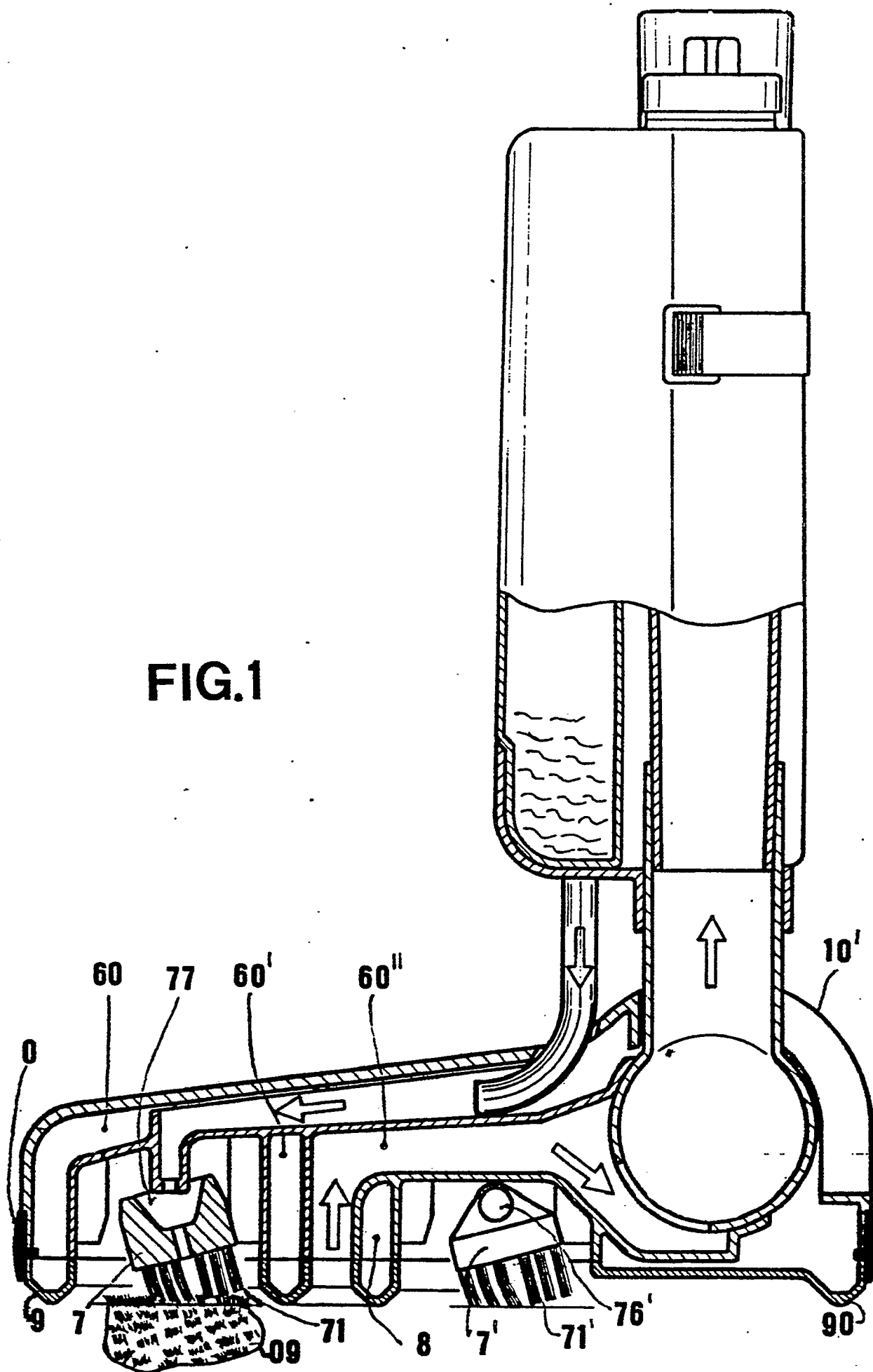
74 Representative : **Sassi, Romano**
UFFICIO BREVETTI VARESINO Viale Belforte
89
I-21100 Varese (IT)

54 **Floor-scrubbing machine.**

57 The device, has housebrush-like shape, and is used for washing carpeted floors and the like. It includes at least a gravitational liquid delivering system, at least an oscillating brush, particularly adapted to distribute the washing liquid and at least an intaking slit, wherein said system and slit are respectively connected to liquid and depression suppliers, wherein the oscillating motion of the brush are provided contextually by to and fro motion of the housebrush on the floor provided with carpet, tufted fabric or the like.

EP 0 434 907 A2

FIG.1



House-brush device, for washing floors covered with carpets, tufted fabric and the like, embodying at least a liquid delivering system, at least an oscillating brush, particularly adapted to distribute the washing liquid and at least an intaking slit, wherein said system and slit are respectively connected to liquid and depression suppliers.

The present invention relates to a device, having consistency and functionality of housebrush, for washing carpeted floors, moquette and the like, embodying, in its chest, at least a washing liquid delivering system, at least an oscillating brush, particularly adapted to distribute the washing liquid, as well as at least an intaking slit, for dirt liquid recovery, wherein said delivering system of the washing liquid and said intaking slit are connected, respectively, to a supply of washing liquid, such as a tank or the like and to an aspirator, particularly adapted to intake and receive the dirty liquid.

One way of carrying out the invention is described in detail below with reference to drawings which illustrate only one specific embodiment, in which :

Figure 1 is vertical schematic cross section of a device, in accordance with the present invention, substantially in operation and in the attitude of washing and contextually intaking the dirty liquid from a carpet or the like.

Figure 2 is a schematic perspective plane view of a device including its additional parts ; the covering being broken off to show at different levels the otherwise hidden particulars.

Figure 3 is substantially a repetition of figure 2 but shown from the bottom side.

Figure 4 is a perspective view of a water distributing brush broken at one end to show, at different levels, the detail otherwise hidden.

Figure 5 is a perspective view of a drying brush for the device in accordance with the present invention.

Referring now to the figures of the drawings, an housebrush-like device, for washing carpeted floors and the like, comprising a substantially effective base body 1 has an handling stick 2 connected thereto, whereon a tank 3 is provided. The base body 1, is substantially in the form of a big shell 10 with a base surface, relatively flat and a central opening 11, provided in the rear upper section, adjacent to corner rounding 10'. Shell 10 comprises the main structure of the device, and to it and in its chest are mounted substantially all the other members. In such members are included two stationary support halves 12, 12', each of them provided, at each end of opening 11, performing the task of saddles to receive the air intaking member 4, having consistency of substantially tubular member in the form of "T", cylindrical, the bipolar branch 40 has a bigger diameter and includes, in a position counterposed to the joint of single branch 41,

a pair of longitudinally aligned slits 42 and 43, comprising an outlet supplier otherwise dead, since opened only in correspondence of the branch 41. On the same, as will be explained later on, an intaking pipe, not shown, will be connected. The stationary support halves 12, 12' receiving, in respective saddles, the ends of branch 40, of supplier 4, provide a supporting function in all directions with the collaboration of removable counter support halves 13, 13', as well as of two pairs of screws 14, 14'. Another important structure is provided by shell 6, operating as water supplier a caditoia and providing, substantially, two depressions, 60, 60', as well as a third central one 60", not directly operative. The two depressions, 60, 60' receive, in their chest, each, a brush 7, 7'. In fact, each of them includes, at its ends, a support 67, 67' ; 67', 67' acting as a fulcrum for the pivots 76, 76' ; 76', 76' of respective brush 7, 7'. In particular the forward cavity 60 is subjacent to the water supply and thus receives and control the liquid to the wet brush 7 to which delivers the washing water to be supplied, while la cavity 60' receives the brush 7' performing functions complementary to that of the brush 7 since the former distribute the soaped water and the latter intakes the possibly dirty liquid reflow resulting from carpeted floor washing as it will be described in the following. Further structure member is the dispenser 8 of intaking flow that, at downstream pole, provides a slit in cooperation with the wall of cavity 60' and at the upstream end distributes the wet recovery from the slit in equal parts to the two slits 42, 43. Of course, each of parts of structure is provided with means for receiving the connecting members, for assembling of various levels of the device. As a lid and contacting member of the device a frame 9 is provided which is provided with opening corresponding to the cavities 60, 60' for leaving the brushes 7, 7' to operate, as well as a slit 60" and on the other side provides projections 90 a shifting skate to keep the device detached from the carpet 09. The device embodied by base 1, is completed by a rounding rim 0, the brushes 7, 7', that are received respectively in the cavities 60, 60' and pivoted by supports 67, 67' ; 76, 76'. In accordance with a preferred embodiment of the present invention brushes 7, 7' are connected to supports 67, 67' ; 76, 76' in releasable fashion, so that they may be substituted and changed in accordance with the need. It will be appreciated that the tank 3 is substantially made in the form of pack saddle so that it embodies the pipe 2. The same tank 3 includes, in its upper section a loading plug for the soaped, as well as a knob 31 for controlling say remote controlling a bottom capillary valve 30 connected to the small hose 36. The water supplier 6 conveys the latter in substantially equal quantities in the holes 66 and from here drops into the pool 77 of the oscillating brush 7, having the task to distribute 71 the liquid on the tuft of the carpet 09 or the like covering the floor. The intaking channel 60" is

activated by an aspirator, not shown, that depresses the "T" shaped manifold 4 by the pipe 2.

Referring now to the figures of the drawings, the brushes in accordance with the present invention include the wet brush 7, and the drying brush 7'. Each of brushes 7, 7' is provided at each end, with a pivot 9 having a diameter slightly smaller than the substantially cylindrical seat of support and slightly bigger than the opening of said substantially cylindrical seat. The brush tufts, vertically considered, are distributed on alternated columns and lines respectively having for tuft and six tuft, wherein the six tuft of each tern of lines of tufts are placed as the corners of a regular hexagon whose centre determine the position of through holes 8 to supply the soaped water.

From what explained heretofore the operation device should be evident. However a short description of it will be given hereafter. The device is simple and cheap, it does not include own electric parts, but it operates in combination with an aspirator, not shown, electrical household appliance, generally already owned by users or that, even if purposed bought, can be otherwise and conventionally used. It is housebrush-like and embodies, in its chest a liquid delivering system, that starting from the tank 3 or better from its valve 30 supplies by means of a small hose 36, the water manifold 6 that conveys substantially equal quantities of water flow in the holes 66 which from here drops into the pool 77 of the oscillating brush 7, that has the task to distribute even through its tufts 71 the liquid on the tufts of carpet 09 or the like covering the floor. Adjacent to the line of action of the brush is provided the intaking channel 60 that is activated by an aspirator, not shown, that provide a depression with a "T" shaped manifold by the pipe 2. In short, the water, generally soaped or added with detergent, brushes the carpet 09 and the brush 7 in presence of to and fro motion thereof, brushes efficiently the carpet tufts. However, on forward motion of device, the intaking slit 60" run over the already washed and brushed carpet tufts. At any rate the device is also provided with a second brush 7' which performs a complementary task both regarding that of intaking, during forward motions and of washing, during backward motions

Claims

1. Housebrush-like device, for washing carpeted floors and the like, characterized in that it comprises at least a gravitational liquid delivering system, at least an oscillating brush, particularly adapted to distribute the washing liquid and at least an intaking slit, wherein said system and slit are respectively connected to liquid and depression suppliers, wherein the oscillating motions of the brush are provided contextually by to and fro motion of the housebrush on the

floor provided with carpet, tufted fabric or the like.

2. Housebrush-like device, for washing carpeted floors and the like, as claimed in claim 1, characterized in that it includes two oscillating brushes, whereby the second thereof is a drying operating brush being placed in the rear side of the liquid supplied brush, whereby the intaking slit 60" is placed between said brushes and parallel to same.

3. Housebrush-like device, for washing carpeted floors and the like, as claimed in claims 1 and 2, characterized in that shell (10) the main structure, member and to it and in its chest are mounted the other members, comprised by two stationary support halves (12, 12'), aside of the opening (11), providing saddles for receiving the air supplier (4), having consistency of substantially tubular component, in the form of "T", cylindrical, whose bipolar branch (40) has a bigger diameter and includes, in a position counterposed to the joint of single branch (41), a pair of longitudinal slits (42 and 43), in line, comprising outlet of supplier (4) otherwise dead, since opened only in correspondence of branch (41), wherein, on the same, is connected an intaking pipe, stationary support halves (12, 12'), receive, in their saddles, the ends of branch (40), of supplier 4, and provide their function of support in all directions with collaboration of movable support halves (13, 13'), and of two pairs of screws (14, 14').

4. Housebrush-like device, for washing carpeted floors and the like, as claimed in claim 1, characterized by a shell (6), operating as water supplier a caditoia and providing, substantially, two hollows (60, 60'), as well as a central third one (60"), not directly funtional, wherein the two functional depressions (60, 60') receive, in their chest, each, a brush (7, 7'), since each of them includes, at each of its ends, a support (67, 67' ; 67', 67') providing a fulcrum for the pivots (76, 76 ; 76', 76') of respective brush (7, 7').

5. Housebrush-like device, for washing carpeted floors and the like, as claimed in claim 4, characterized in that forward cavity (60) is subjected to water supply and to water dropping, whereby receives and join the wet brush (7) to which delivers the washing water to be supplied, while the cavity (60') receives the brush (7') that performs functions complementary to that of the brush (7) since that get off and this takes and receives the liquid reflow of washing.

5. Housebrush-like device, for washing carpeted floors and the like, as claimed in claim 4, characterized by a conveyer (8) of intaking flow that, in correspondence of downstream end, provides a slit 60" in cooperation with the wall of the cavity (60') and in correspondence of the upstream end distributes the wet recovery from the slit in equal quantities to the slits (42, 43).

6. Housebrush-like device, for wasing carpeted floors and the like, as claimed in preceding claims, characterized by a contacting member, providing a lid

for the device including a frame (9) which is provided with opening corresponding to cavities (60, 60') for leaving the brushes (7, 7') to operate, as well as a slit (60'') and on the other side provides (90) a shifting skate for interspaced motion of device on the carpet (09). 5

7. Housebrush-like device, for washing carpeted floors and the like, as claimed in preceding claims, characterized in that the brushes (7, 7') are connected to supports (67, 67') in releasable fashion, so that they may be substituted and changed in accordance with the need. 10

8. Housebrush-like device, for washing carpeted floors and the like, as claimed in preceding claims, characterized in that the brushes are provided at each end with a pivot having a diameter slightly smaller than the substantially cylindrical seat of support and slightly bigger than the opening of said substantially cylindrical seat. 15

9. Housebrush-like device, for washing carpeted floors and the like, as claimed in preceding claims, characterized in that the brush tufts, vertically considered, are distributed on alternated columns and lines respectively having for tuft and six tuft, wherein the six tuft of each tern of lines of tufts are placed as the corners of a regular hexagon whose centre determine the position of through holes (8) to supply the soaped water. 20 25

10. Housebrush-like device, for washing carpeted floors and the like, as claimed in preceding claims, characterized in that tank (3) is substantially made in the form of pack saddle whereby to embody (2), wherein said tank (3) includes, in the upper section, a plug (33) for soaped water filling, as well as a knob (31) to control, better remote control a bottom capillary valve (30) whose outlet is connected to a small hose (36), whereby the water supplier (6) conveys the same in substantially equal quantities into the holes (66) and from here it drops into the pool (77) of the oscillating brush (7), which has the task to distribute even through its tuft the liquid on the carpet (09) or the like. 30 35 40

45

50

55

FIG.1

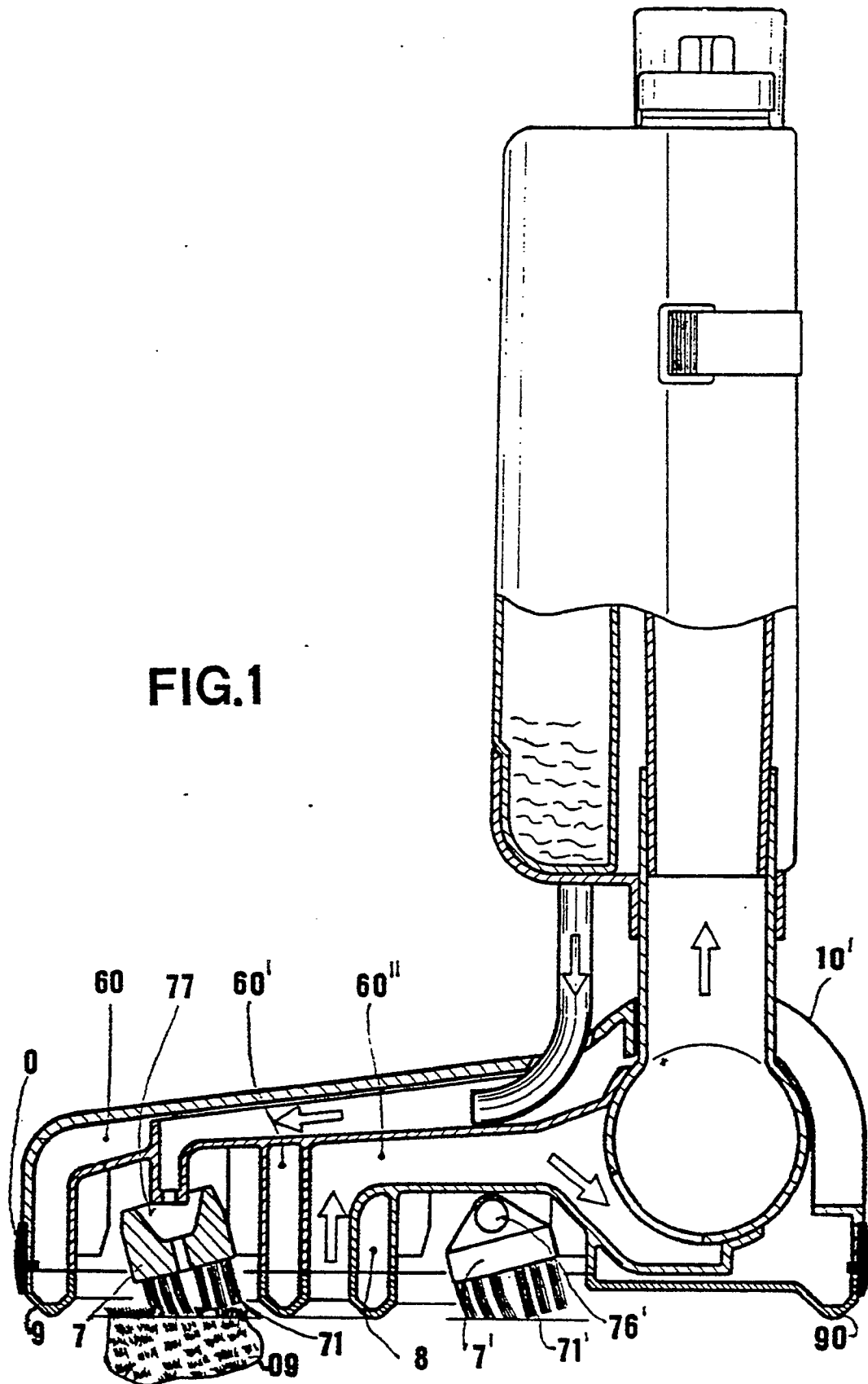
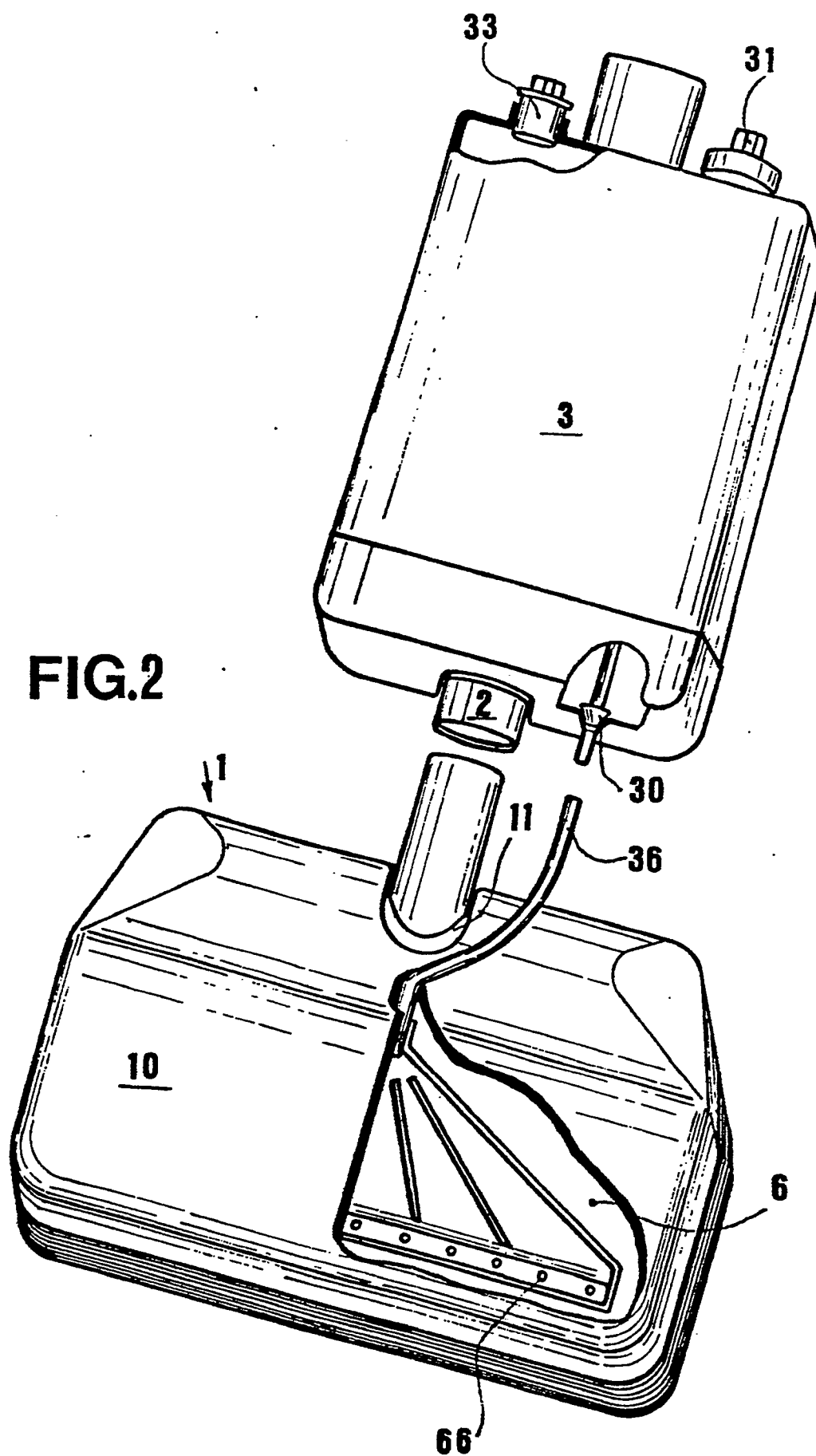


FIG.2



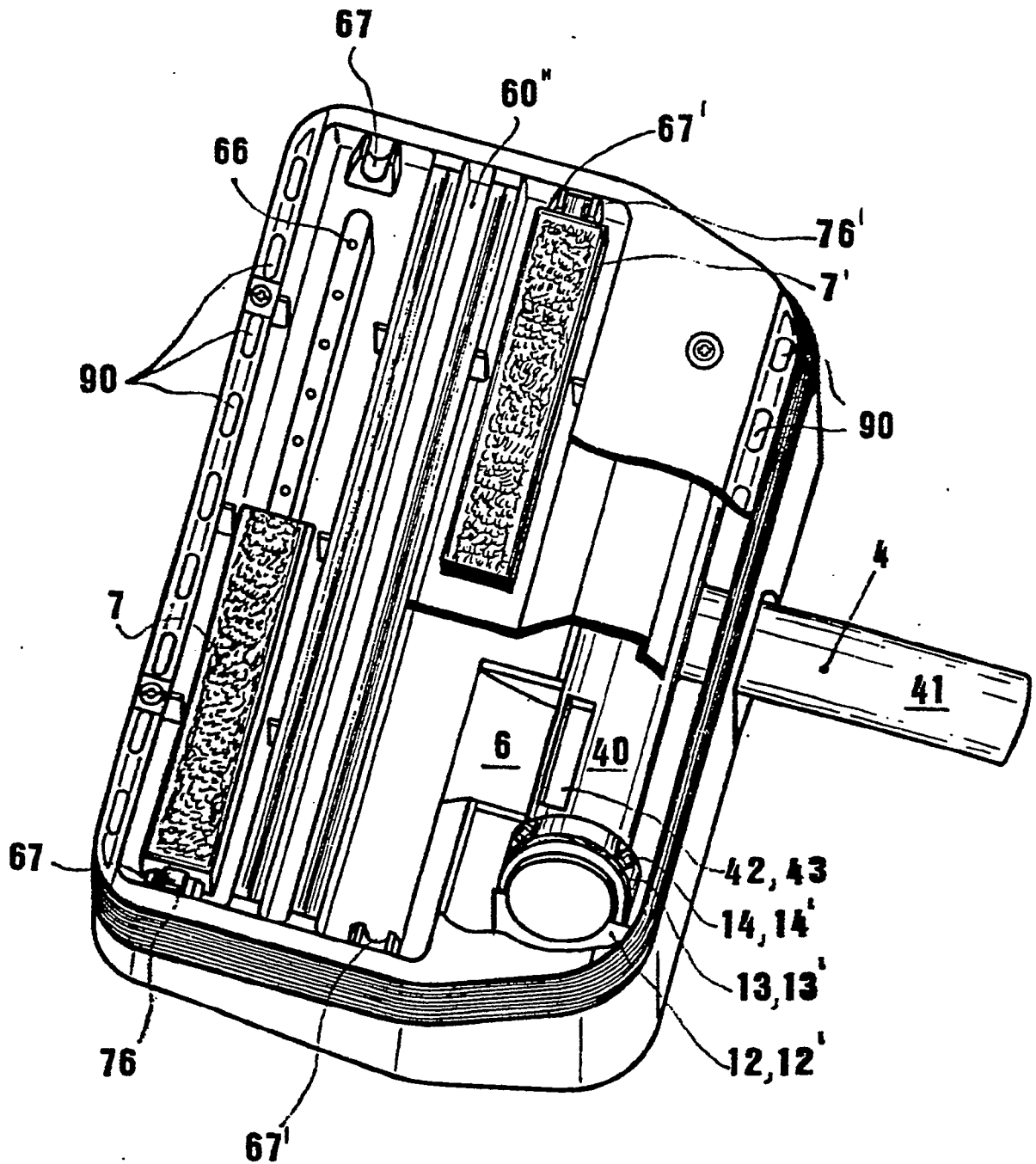


FIG.3

