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(54) **Self-cleaning system for air filter in dry-cleaning machines.**

(57) It foresees the use, into the machine suction duct, of a rotating filter (1) driving by a motor reducer (2) which keeps the suspended impurities. By means of a turbine (3), the nap deposited on filter (1) is sucked by an intake spout (4) which, through a piping (5), puts into a cyclone (6) in which is actuated the separation between air and nap and, while said nap is keeping, the air through a piping (7) is putting again in circulation for its reuse. Said self-cleaning effect is constantly actuated during the drying phase. When it is necessary, by closing the two valves (8 and 9) on the two pipings (5 and 7), the cyclone (6) is insulated from machine so to permit the extraction of the containment part (10) for emptying of nap dry sludge which being dry does not pollute the surrounding.

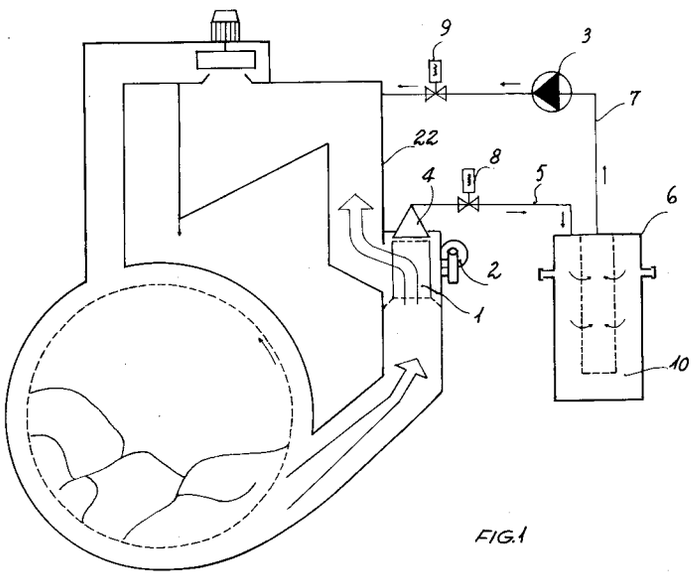

FIG.1

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The invention refers to a self-cleaning system for air filter in dry-cleaning machines acting constantly during the machine operation. In said machines the air flow which arrives into the suction duct from the rotating basket, where is clothing to dry, crosses a filter unit which keeps the impurities, made of nap and other, while air reaches into the drum condensation hollow and then into the force main for its re-employment. Actually, for cleaning said filter unit, it is necessary periodically to intervene as a first step taking out said unit from machine beforehand opening of special handole; the same filter unit must be then cleaning with conventional means and then brought back in its position inside the machine. But acting in this way it is putting in connection the machine inside system, where are present toxic agents, with the working environment so determining an air pollution and a big inconvenience for the operator during the withdrawal and resetting phases and also during filter cleaning.

The invention avoids the above indicated disadvantages by adopting a new concept system acting with integrated self-cleaning effect which, with machine in operation, acting constantly the filter unit cleaning. Substantially the system foresees the use, into the machine suction duct, of a rotating filter 1 driving by a motor reducer 2 which keeps the suspended impurities. By means of a turbine 3, the nap deposited on filter 1 is sucked by an intake spout 4 which, through the piping 5, puts into a cyclone 6 in which is actuated the separation between air and nap and, while said nap is keeping, the air through piping 7 is putting again in circulation for its reuse. Said self-cleaning effect is constantly actuated during the machine operating. When it is necessary, by closing the valves 8 and 9 on pipings 5 and 7, the cyclone 6 is insulated from machine so to permit the extraction of the containment part 10 for emptying of nap dry sludge which being dry does not pollute the surrounding. In an embodiment the self-cleaning filter may precede, into the suction loop, a second conventional filter so that, being not said second filter subjected to dirty oneself during the right machine operation, it can perform to a reserve filter action for safety condition. In embodiment it is foreseen use of a filter, moved by a motor reducer 11 with shaft 12 passing into the coaxial support 13 fixed to cover 14 for frame 15 rotation, with wire cloth 16. Said filter permits moreover a frontal seal by means of crawling gaskets 17 and 18. Further, on shaft 12 in seat 19 of metal tube 20 of frame 15, is laid on a thrust coil spring 21 which operates as retaining so to maintain the rotating part 15 against the machine hose 22.

A preferred embodiment is showed in drawings of sheets 1 and 2. In sheet 1 fig. 1 is schematic view of the machine. In sheet 2 fig. 2 is section view of the rotating filter.

The different elements of the machine and any other details may be different realized and coupled with other known elements on the base of particular structural requests.

Claims

1. Self-cleaning system for air filter in dry-cleaning machines, characterized by the fact that foresees the use, into the machine suction duct, of a rotating filter (1) driving by a motor reducer (2) which keeps the suspended impurities. By means of a turbine (3), the nap deposited on filter (1) is sucked by an intake spout (4) which, through a piping (5), puts into a cyclone (6) in which is actuated the separation between air and nap and, while said nap is keeping, the air through a piping (7) is putting again in circulation for its reuse. Said self-cleaning effect is constantly actuated during the drying phase. When it is necessary, by closing the two valves (8 and 9) on the two pipings (5 and 7), the cyclone (6) is insulated from machine so to permit the extraction of the containment part (10) for emptying of nap dry sludge which being dry does not pollute the surrounding.

2. Self-cleaning system for air filter in dry-cleaning machines, as in claim 1), characterized by the fact that the self-cleaning filter may precede, into the suction loop, a second conventional filter so that, being not said second filter subjected to dirty oneself during the right machine operation, it can perform as a reserve filter action for safety condition.

3. Self-cleaning system for air filter in dry-cleaning machines, characterized by the fact that an embodiment foresees use of a filter, moved by a motor reducer (11) with shaft (12) passing into the coaxial support (13) fixed to a cover (14) for frame (15) rotation, with wire cloth (16). Said filter permits moreover a frontal seal by means of two crawling gaskets (17 and 18).

4. Self-cleaning system for air filter in dry-cleaning machines, as in claim 1), characterized by the fact that on shaft (12) in seat (19) of metal tube (20) of frame (15), is laid on a thrust coil spring (21) which operates as retaining so to maintain the rotating part (15) against the machine hose (22).

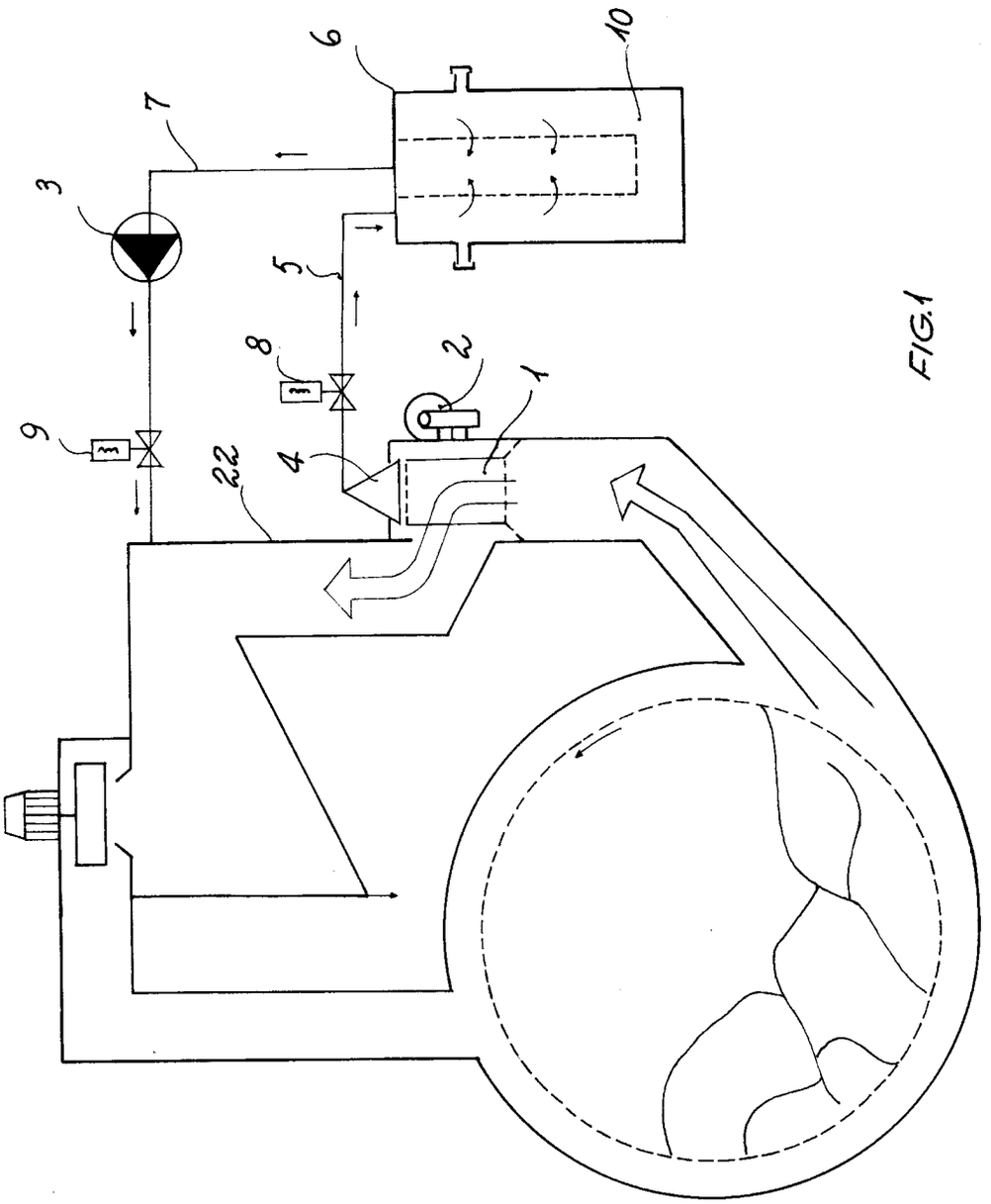

FIG.1

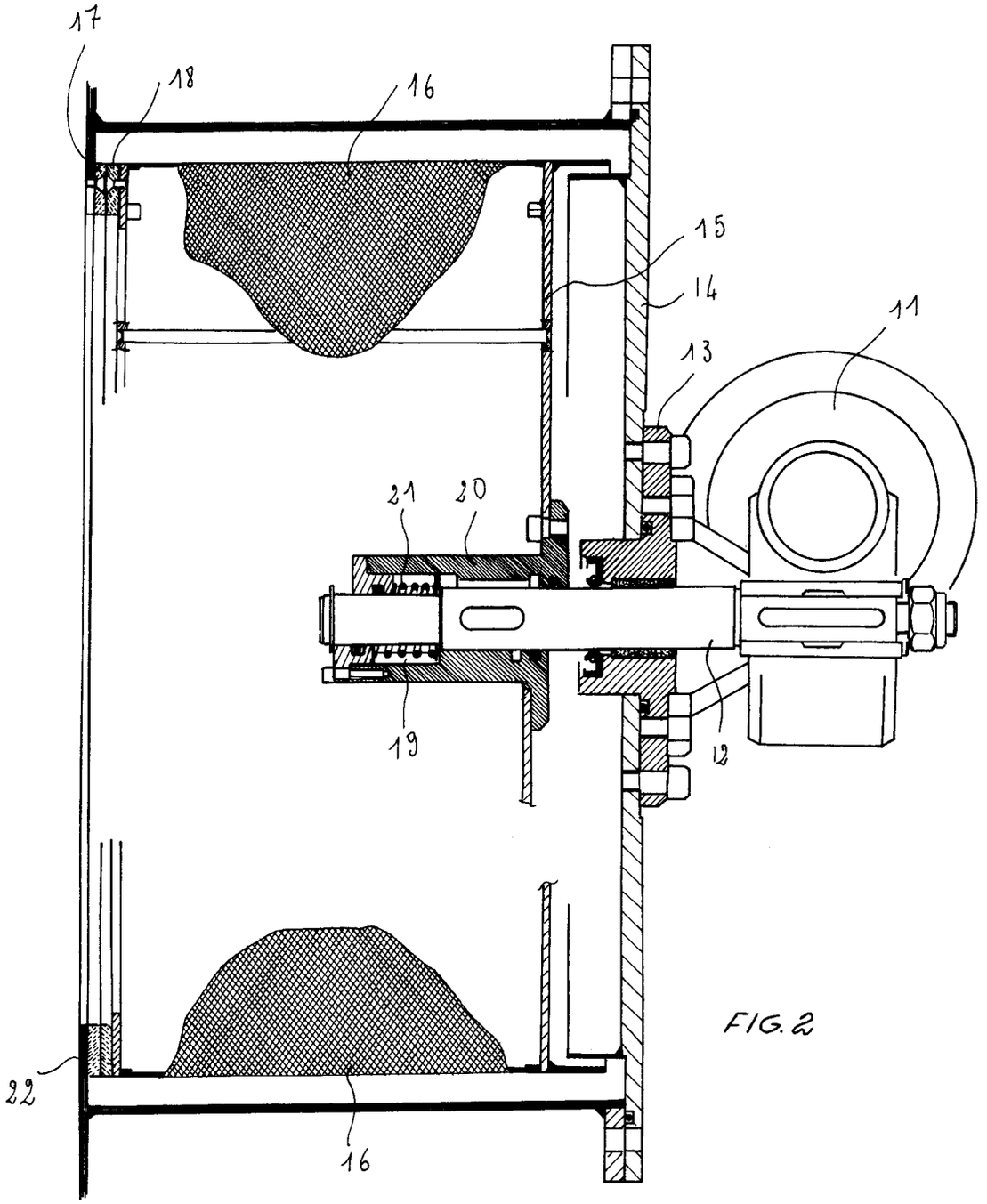

FIG. 2

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EUROPEAN SEARCH REPORT

Application Number

EP 91 83 0329

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	DE-A-2 141 070 (BÖWE BÖHLER & WEBER KG MASCHINENFABRIK)	1,3	D06F43/08
A	* the whole document *	4	
A	US-A-3 212 239 (G. MAESTRELLI) * the whole document *	1,3,4	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

D06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	19 FEBRUARY 1992	COURRIER G.L.A.

CATEGORY OF CITED DOCUMENTS

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