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Datasheet for the decision of 28 May 2010

Case Number: T 2057/08 - 3.2.04

Application Number: 99830819.1

Publication Number: 1112712

IPC: A47L 9/18

Language of the proceedings: EN

Title of invention:
A vacuum cleaner

Patentee:
POLTI S.p.A.

Opponent:
Lavorwash S.p.A.
De'Longhi Appliances S.r.l.

Headword:
-

Relevant legal provisions:
EPC Art. 52(1), 56, 105
EPC R. 89

Relevant legal provisions (EPC 1973):
-

Keyword:
"Intervention of the assumed infringer"
"Inventive step (no) (all requests)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 2057/08 - 3.2.04

D E C I S I O N
of the Technical Board of Appeal 3.2.04
of 28 May 2010

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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 19 August 2008 rejecting the opposition filed against European patent No. 1112712 pursuant to Article 101(2) EPC.

Composition of the Board:

Chairman: M. Ceyte
Members: A. de Vries
C. Heath

Summary of Facts and Submissions

I. The Appellant (Opponent) lodged an appeal, received 15 October 2008, against the decision of the Opposition Division posted 19 August 2008 to reject the opposition, and simultaneously paid the appeal fee. The statement setting out the grounds was received 15 December 2008.

Opposition was filed against the patent as a whole and based on Article 100(a) together with Articles 52(1) and 56 EPC 1973, for lack of inventive step.

The Opposition Division held that the grounds for opposition under Article 100 EPC 1973 did not prejudice the maintenance of the patent as granted having regard in particular to the following documents:

D1: WO-A-89/00021
D2: US-A-2 272 995
D6: US-A-5 829 092

II. With letter of 27 April 2010 a third party filed a notice of intervention under Article 105 EPC, paying the required opposition fee and submitting the required reasoned statement.

III. The Appellant (Opponent) requests that the decision under appeal be set aside and the patent be revoked in its entirety.

The intervening party requests that the patent be revoked in its entirety.

The Respondent (Proprietor) requests as main request that the appeal be dismissed and the intervention be

rejected and that the patent be maintained as granted, or, in the alternative, that it be maintained in a form according to a first, second or third auxiliary request filed with letter of 27 April 2010.

IV. Oral proceedings were held before this Board on 28 May 2010.

V. The wording of claim 1 of the requests is as follows:

Main request (claim 1 as granted)

"A vacuum cleaner (1) comprising:
- a dust-collection reservoir (7) containing a fluid (8),
- at least one duct (11)for conveying an air-flow comprising the dust into the reservoir (7), the air-flow being mixed with the fluid (8) so as to generate a dynamic and turbulent mixture,
- the reservoir (7) comprising interception means (16, 17) for generating a swirling motion of the mixture inside the reservoir (7).
- the at least one duct (11) comprising an end portion (15) having an opening (22) for delivering the air-flow comprising the dust into the reservoir (7);
- said reservoir (7) comprising a base (13) from which the interception means (16, 17) extends, and
- a hollow filter-holder (9) fitted in the reservoir (7), characterized in that:
- the at least one suction duct (ii) extends coaxially through the filter-holder (9), and
- said opening (22) is disposed beneath the free surface of the fluid (8) in such a manner that the direction in which the air-flow comprising the dust is

delivered has a component substantially tangential to the support base (13), whereby continuously recirculating motion of the mixture is created in a region of the reservoir (7) delimited partially by said interception means (16, 17)."

First Auxiliary Request

Claim 1 is as in the main request but for amendment of the final feature to read (emphasis added by the Board indicates what is added or modified):

"-said opening (22) is disposed beneath the free surface of the fluid (8) in such a manner that the direction in which the air-flow comprising the dust is delivered has a component substantially tangential to the support base (13), **said interception means comprising a wall (16) and a baffle (17) and the wall (16) has a substantially concave profile, the wall (16) extends from the support base (13), an upper rim (14) is connected to the wall (16) and the baffle (17) extends from the upper rim (14) in the vicinity of the wall (16),** whereby continuously recirculating motion of the mixture is created in a region of the reservoir (7) delimited partially **by said wall (16) and said baffle (17), the air particles released during the atomization of the portion of the mixture intercepted by the baffle (17) are also forced to move downwards.**"

Second Auxiliary Request

Claim 1 is an in the first auxiliary request but for the insertion of the following feature as final feature of the pre-characterizing part:

"-a body (2) and a suction pump (33) housed inside the body (2), said suction pump (33) being driven by a motor in fluid communication with the hollow filter-holder (9) and with the reservoir (7) by means of a duct(36),".

Third Auxiliary Request

Claim 1 is as in the third auxiliary request but for the addition of the following feature as first feature in the pre-characterizing part (immediately after "A vacuum cleaner (1) comprising:"):

"- a body (2) having wheels (3,4) at the bottom and a carrying handle (5) at the top;".

VI. The Appellant argued as follows:

D6 shows all the features of granted claim 1 (main request) except for the coaxial duct and filter. This feature makes no clear technical contribution. In any case it is known from D2, which shows the two locations side by side as alternatives. For a more compact design only the passage of the duct through the filter is important; a coaxial or eccentric passage makes no difference. The feature then lies within the routine, ordinary skills of the skilled person.

The coaxial duct-and-filter is unrelated to the concave wall and baffle. The latter serve to improve cleaning efficiency. The two sets of features can thus be treated separately. In D6 separator 36 as a baffle defines an area 32 with intense turbulence, implying

atomization. D2 teaches an ellipsoid wall shape to promote swirling as well as a baffle in the form of damping grating.

The features added to the pre-characterizing part of claim 1 of the second auxiliary request are all known from D6. D6 also shows wheels (third auxiliary request) but not a handle, a common feature of vacuum cleaners.

VII. The intervening party agreed with the Appellant's arguments and added the following:

A baffle extending from the rim (first auxiliary request) is technically unrelated to the other features. It is a normal design option.

VIII. The Respondent argued as follows:

Vis-à-vis D6 as closest prior art, the coaxial duct-and-filter arrangement as sole difference provides a more compact design. This is implicit from specification paragraphs [0005], [0006] and [0010]. In D2 the coaxial arrangement serves a different function in ensuring a more homogenous, symmetrical delivery of air from a vertical duct into the filter. D2 lies in the completely different field of industrial purification. The skilled person would never consider this prior art for a more compact design. Even if he did combine their teachings he would arrive at an arrangement with an essentially vertical duct.

A concave wall (first auxiliary request) means protruding outwardly. Together with the baffle this feature improves circulation and filtration, see

specification paragraphs [0040] and [0043]. Neither feature is present in D6. Nor does D6 mention atomization. D2 on the other hand expressly avoids atomization, see page 2, left column, line 8 onwards. D1 may teach curved walls to promote swirling but it does not show a baffle; the combination of both is necessary to produce the desired atomization.

The features added to claim 1 according to the second and third auxiliary requests specify a vacuum cleaner. Per se they are not inventive but provide a context that gives the coaxial duct/filter, the concave wall and the baffle assembly special significance in relation to their overall arrangement in the cleaner.

Reasons for the Decision

1. The appeal is admissible.

2. *Admissibility of the Intervention*

The notice of intervention meets the requirements of Rule 89 in conjunction with Rules 76 and 77 EPC: it has been received together with payment of the opposition fee on 27 April 2010, that is within three months of an application for an interim injunction served by the proprietor respondent on the intervening party on 11 March 2010. It includes a written, reasoned statement setting out the case against the patent and the evidence relied on. Admissibility is not contested and the Board itself also sees no reason why the intervention might not be admissible. It therefore admits the intervention.

3. *Background*

The patent concerns a "wet" vacuum cleaner of the type that uses a liquid in a reservoir to wash out dust from air delivered into the liquid from a suction duct. According to claim 1 as granted the opening of the inlet duct is disposed beneath the liquid surface so that the direction of air flow delivery from the duct has a component substantially tangential to the reservoir support base. The air-liquid mixture continuously (re)circulates in a region defined by "interception means" extending from the base. A more effective separation results, see specification paragraph [0044]. Additionally, the suction duct extends coaxially through a hollow filter holder.

4. *Main Request*

4.1 All parties agree that D6 discloses the closest prior art for assessing inventive step. It discloses, see figure 3, and column 3, lines 9 to 42, a vacuum cleaner 10 with fluid filled reservoir 28 and a duct 38 with its end shown submerged in the fluid. The reservoir sidewall and a separator 36 sloping downwardly from the sidewall towards the duct intercepts the flow and forces it into a circulatory path, "causing intense turbulence" in the words of D6, in the area 32 bounded by base, sidewall and separator. The duct is at a shallow angle to the reservoir base so that it delivers air flow with a component tangential to the base towards the sidewall. Finally, a filter 42 is retained in a chamber 22 as hollow filter holder.

4.2 The vacuum cleaner of claim 1 (main request) differs from that known from D6 in that the duct extends coaxially through the filter holder. That this is the only difference is also not in dispute.

4.3 The patent does not discuss the effects or advantages of this feature in any detail. The Board can only surmise as to what these might be. It may well be that passing the duct through the filter results in a more compact design. Alternatively, a combined duct/filter assembly requires only a single opening into the reservoir, versus two in D6, so that the resultant design could be said to be simpler. That the duct passes through the filter *coaxially* has no apparent technical significance, and itself need play no particular role in the formulation of the objective technical problem. On the basis of the above the Board tentatively formulates that problem as follows: *how to make the design of a wet vacuum cleaner such as that of D6 simpler or more compact*. This problem expresses routine design concerns and its formulation does not per se require any particular inventive insight.

4.4 The "heart" (or rather the "kidneys") of a vacuum cleaner is its filter unit, where dust and dirt are filtered out of suction air and collected in a reservoir. For this reason, the relevant skilled person, a design engineer involved in the design and development of vacuum cleaners, will have knowledge not only of vacuum cleaner design and construction, but also of developments in air filters. The International Patent Classification, IPC 7 and previous versions, for example, has a separate subclass for the filter unit of

a vacuum cleaners, A47L9/10, which is cross-referenced to the class for filters in general, B01D.

4.4.1 The skilled person, who is searching for a simpler or more compact filter design for a "wet" vacuum cleaner such as that of D6, that is using "wet" filtering, would thus also consult the literature pertaining to "wet" filters, classified under B01D47/02 ("Separating dispersed particles from gases, air or vapours by liquid as separating agent by passing the gas or air or vapour over or through a liquid bath"). There he would find D2, which in figures 4 and 6 shows a particularly compact and simple design with coaxial passage of duct 2 through filter 8. D2 would be of particular interest to him as it also shows tangential air flow delivery into the liquid (figure 4, but see also page 1, right column, lines 41 to 44 for figure 6) to promote circulation (paragraph bridging pages 1 and 2).

4.4.2 It will be immediately obvious to the skilled person that the D2's coaxial duct/filter assembly can easily be transposed to a "wet" vacuum cleaner such as that of D6. In order to make the design of its filter simpler and more compact he will therefore as a matter of obviousness draw upon D2 and adopt its coaxial design to arrive at a vacuum cleaner within the terms of claim 1 of the main request.

4.4.3 That this may require changes to the overall structure and layout of the cleaner - e.g. a rerouting of the duct to pass through the filter - goes without saying. Such changes are well within the routine design skills of a design engineer, the skilled person. Nor will the exact role of the coaxial placement within D2's design

- that it might be closely bound to a symmetric delivery - be a bar to such a combination. The Board recalls that the patent and D2 are equally silent as to the feature's precise function, and in both cases that can only be surmised. At any rate, in its view the skilled person easily recognizes the coaxial duct/filter arrangement as a separate aspect of the overall D2 design which contributes to its simple and compact appearance and which can be adopted independently of the overall design. Finally, as D2 also shows tangential delivery, any combination of D2 and D6 must also result in tangential, rather than vertical delivery.

4.5 The Board consequently finds that the cleaner defined in claim 1 of the main request lacks an inventive step having regard to D6 in combination with D2.

5. *Auxiliary Requests*

5.1 In D6 the separator 36, which acts as a baffle and, together with the sidewall, forms an interception means, extends from an upper region of the side wall, but not from an upper *rim* as in claim 1 of the *first auxiliary request*. Nor can the right sidewall of the reservoir in figure 3 of D6 truly be said to be *concave*, which is meant to denote the generally outwardly curved shape of the sidewall 16 in the figures of the patent. Otherwise however the wall and separator 36 in D6 act in the same way as the wall and baffle of the patent. D6 may not say so expressly, but the "intense turbulence" mentioned in column 3, lines 25 to 30, and graphically illustrated in figure 3, implies some level of

"atomization", i.e. of mist or spray forming in the area underneath the baffle.

5.1.1 Whereas extending the separator from an upper rim instead of an upper region has no clear function, the outwardly curved wall can be seen to promote circulation, cf. specification paragraphs [0039], [0040] and [0043]. The various differences - coaxial duct/filter assembly, upper rim and concave wall - produce unrelated effects (if at all) and so address separate partial problems. Each difference can therefore be considered independently of the others.

5.1.2 The feature of the upper rim, which is devoid of any clear technical function, can be nothing more than an arbitrary design choice.

Wall curvature on the other hand is known to improve swirling action of liquid and thus cleaning, in "wet" vacuum cleaners, see in particular D1, page 3, second paragraph. Adoption of this measure to that end in a "wet" cleaner as in D6 is per se obvious.

The feature of the coaxial duct/filter assembly is obvious for the reasons already given. These remain the same even if claim 1 now mentions atomization. It will be clear to a design engineer as skilled person that adopting a coaxial passage of the duct through the filter for compactness' and simplicity's sake can be done independently of the degree of swirling or turbulence in the filter.

5.1.3 Adopting each of these technically unrelated, obvious modifications adds nothing over and above the

straightforward combination of their individual effects. This is nothing more than a simple and obvious juxtaposition of individually obvious measures.

5.2 The *second and third auxiliary requests* add to claim 1 features that are either basic features of any vacuum cleaner (body, motor driven suction pump connecting to the air filter via a duct) or commonplace in home appliance cleaners (wheels, handle). How these features might give the other features special significance is not evident to the Board.

5.3 The Board thus finds that the subject-matter of claim 1 according to the first to third auxiliary requests also does not involve an inventive step, Articles 52(1), 56 EPC.

6. *Conclusion*

In the light of the above the Board holds that the opposition ground raised under Article 100(a) in combination with Articles 52(1) and 56 EPC prejudices maintenance of the patent in its granted form. Nor does the patent meet the requirement of Articles 52(1) and 56 EPC in light of the amendments proposed in the auxiliary requests.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar | The Chairman

G. Magouliotis | M. Ceyte