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**Datasheet for the decision
of 18 October 2019**

Case Number: T 1540/16 - 3.2.04

Application Number: 08159684.3

Publication Number: 2011991

IPC: F02M35/024, F02M35/08,
B23D45/16

Language of the proceedings: EN

Title of invention:

Power cutter

Patent Proprietor:

Black & Decker, Inc.

Opponent:

Makita Corporation

Headword:

Relevant legal provisions:

EPC Art. 54, 56

Keyword:

Novelty - (yes)
Inventive step - (yes)

Decisions cited:

Catchword:



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Case Number: T 1540/16 - 3.2.04

D E C I S I O N
of Technical Board of Appeal 3.2.04
of 18 October 2019

Appellant: Makita Corporation
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Respondent: Black & Decker, Inc.
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Representative: SBD IPAdmin
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 2 May 2016
rejecting the opposition filed against European
patent No. 2011991 pursuant to Article 101(2)
EPC.**

Composition of the Board:

Chairman A. de Vries
Members: S. Oechsner de Coninck
T. Bokor

Summary of Facts and Submissions

- I. By its decision dated 2 May 2016 the opposition division rejected the opposition against the European patent No. 2 011 991. On 29 June 2016 the appellant-opponent filed an appeal and paid the appeal fee simultaneously. The statement setting out the grounds of appeal was filed on 12 September 2016.
- II. The opposition division held that the grounds for opposition mentioned in Article 100 (a) and (b) EPC did not prejudice the maintenance of the granted patent having in particular regard to the following documents:
- D7: DE 44 27 739 A1
D10: DE 103 09 732 A1
D35: DE 199 16 750 A1
- III. The following documents were further cited in appeal:
D53: US 2001/0005984 A1
D55: US 2002/0189572 A1
- IV. Oral proceedings were held on 18 October 2019.
- V. The appellant requests that the decision under appeal be set aside, and that the European patent No. 2 011 991 be revoked.
- VI. The respondent requests that the appeal be dismissed, i.e. that the opposition be rejected and the patent be upheld as granted (main request) or alternatively that the decision under appeal be set aside and the patent be maintained in an amended form on the basis of the first to third auxiliary requests filed with letter dated 19 August 2019.

VII. The independent claim 1 according to the main request reads as follows:

Main request

"A power cutter comprising:
a housing (2);
an engine (24) mounted within the housing (2);
a support arm (7) mounted on the housing and which projects forward of the housing;
a blade mounting mechanism (70, 90, 86, 92) rotatably mounted on the end of the support arm and which is capable of being rotationally driven by the engine (24) when the engine is running;
a liquid fuel aeration mechanism (126) to generate aerated fuel for the engine;
an air intake (314) for the provision of air for the liquid fuel aeration device (126);
an air filtration mechanism (316) to filter the air drawn in from the air intake for the liquid fuel aeration mechanism;
a fuel tank (124) for providing fuel to the liquid fuel aeration mechanism; and
an exhaust (146) through which the exhaust gases generated by the operation of the engine are expelled;
wherein the air filtration mechanism comprises an air filter (320) characterised in that the air filter comprises a plurality of pleats which hang substantially vertically downwardly when the power cutter is in its standard orientation."

VIII. The appellant argues as follows:

The meaning of the term "hang" is not explained in the patent, therefore the term should be given the broadest sensible interpretation. This term in particular does not exclude that the filter is supported at the end of

a hanging pleat such as shown in D35. D7 and D10 also disclose a filter extending vertically downwardly from a lateral side of the filter. D55 further shows in figure 2 a filter that is seen to hang from an upward position.

As for inventive step, the appellant argues that the problem stated in the patent is not solved by the claimed features. D35 solves the problem already so that objective problem may be to facilitate changing the filter. The skilled person would consider reorienting the pleats based on common general knowledge or as known from any of the filters shown in D10, D30 or D55. Alternatively, starting from D7/D10 the skilled person would also arrive at the claimed solution using common general knowledge.

IX. The respondent argues as follows:

The late-filed documents D53 and D53 (and others) are not to be admitted into the proceedings.

The skilled person reading the whole patent clearly understands the term "hang" to mean supported from above without support from beneath. None of the disclosures discloses a pleated filter hanging in this manner.

Starting from either D7 or D10 the skilled person would not arrive at the claimed solution using common general knowledge, because it would involve far reaching redesign of the compact hand-held power cutters disclosed in these documents.

Reasons for the Decision

1. The appeal is admissible.
2. Claim Interpretation
 - 2.1 The patent is concerned with the simple construction of a filter for a power cutter so that it is easy to clean (paragraph 7). The solution broadly relies on orienting the pleats in such a manner that the particles filtered out during use of the device simply fall out due to gravity when the power cutter is at rest. This is achieved by the characterising feature of claim 1, according to which "the air filter comprises a plurality of pleats which hang substantially vertically downwardly when the power cutter is in its standard orientation."
 - 2.2 In particular the expression "plurality of pleats hang substantially vertically downwardly" is somewhat puzzling. That this should be so when the cutter is in its standard orientation sets a clear reference and is not disputed. At first glance "hang vertically downwardly" appears to be a tautology. The term "hang" normally signifies *to support something from above, so that below the point of support it takes the position due to gravity* (Oxford English Dictionary) or *to fasten at an elevated point without support from below* (Merriam Webster). The term thus already appears to imply that the thing that hangs does so vertically (in a vertical plane) and downwardly. In this regard the further qualification "vertically downwardly" is understood as underlining or emphasizing this aspect, the vertical downward orientation of a pleat per se, and to rule out any other possible broader

interpretation of the term "hang". Indeed, such an understanding appears to be confirmed by the embodiments detailed in the description and figures, which show a very particular orientation of individual pleats.

The filter system is explained in detail in paragraphs 49 to 57 with reference to Figures 23 to 29. Paragraph 50 uses a very similar formulation, that "the pleats ...hang vertically downwards when the power cutter is located its standard orientation" that is "when on a horizontal surface as shown in Figure 1." The filter is described there formed of a paper filter folded to form pleats, most clearly shown in figure 26 as harmonica-like, and also visible in figures 24, 25, 27 and 29. The pleated filter as a whole is oriented horizontally, that is with all folds between the pleats oriented horizontally, and held within a surrounding plastic base 318 (figure 29) from which the individual pleats point downwards in the shape of a V's (figure 26). In this manner each pleat hangs freely, suspended from the base 318 from above and without support from below, oriented downwardly and thus vertically. The lower edge of the pleats is referenced 381 in figures 25 and 26 (last sentence of paragraph 57), and in all embodiments lies in a horizontal plane forming the lower surface of the filter. It is clear that in this particular vertical orientation of the pleats per se dust that collects on the lower side of the filter can fall downwardly and essentially unimpeded.

In reading the claim, the skilled person will use the above interpretation for the expression featuring in claim 1 "pleats which hang substantially vertically downwardly when the power cutter is in its standard

orientation." This interpretation requires the pleats to be attached only from above without lower support and to have their lower folded edge to be located in a horizontal plane.

2.3 The above understanding is narrower than that argued by the appellant. In their view the claim terms should be given their broadest meaning to encompass also filters with pleats that are supported laterally as in D7 or D10, or in which the pleats are oriented downwardly and vertically but are also supported from below as in D35, which would then be novelty destroying.

2.4 The Board disagrees.

D35, see in particular figures 1 and 5, discloses an air filter for a power cutter where the filter is arranged generally horizontally in use with pleats 39 pointing downwardly as in the patent. A filter support plate framework (Filterträgerplatte 21) is shaped to intimately support the pleated filter 39 within a supporting frame (Trägergerüste 38; col 4, lines 8-15). The non rigid pleated filter is made of fleece (col 4, lines 11-12: "Vlies bestehenden Faltenfilter" 39), and it is enclosed within the rigid supporting frame and supported on each folded edge (Faltlinien 40) by a corresponding rigid structure of the supporting frame (Trägergerüst 38). This cooperation of the pleated filter with the supporting frame does not correspond to a hanging attachment because the pleats are not attached from above and are also supported from below. Even considering the configuration of a curtain as suggested by the appellant, this support from below disclosed in D35 rather provides a supporting force instead of allowing a free hanging as in case of a curtain. The Board can accept that a curtain may also

touch the floor and still it will be considered as "hanging". However, even in this case it will be understood as being supported essentially only from above, due to the soft structure of the textile, and for this reason it can be seen as "hanging". This is not the case in the arrangement of the filter in D35.

D7 and D10 both show a similar configuration of a pleated paper filter as in the patent. In D7, see Figures 2 and 3, read in combination with col 5, lines 55 - 62, however the filter is rotated 90° about its short edge so that it is arranged vertically in use, with lateral air flow through the filter. Its pleats or slats ("Faltenlamellen") lie in a plane 61 (Figure 2) containing the vector of gravity 52 and designed for lateral air flow 9 (i.e. with their folded edge oriented vertically in the longitudinal direction of the filter). The same arrangement is shown in D10, cf Figures 1 and 3, which discloses an air filter with explicit reference in paragraph 2 to D7. Figure 3 in particular shows the downwardly extending pleats ("parallel zur langen Kante 31", paragraph 0017) supported in a seal element 9. In both arrangements the filter is supported laterally about its circumference by a seal 6 (D10, figure 3) or sealing rim 26 (D7, figure 2) on its clean air side. Consequently the pleats are not supported from above, without support from below. This is so also in the somewhat inclined orientation when the power cutter is at rest on the ground, as depicted in figure 1 of D7.

- 2.5 From the above, the Board thus concludes that the subject-matter of claim 1 is novel over the cited disclosures of D35, D7 or D10.

2.6 It is immediately clear that D53 or D55, irrespective of the question of their admission into the proceedings, also fail to directly and unambiguously disclose the claimed arrangement of pleats.

D53 is silent on the way the filter is supported or attached on that housing. Figures 1 and 17 appear to show filter 22 clamped between elements of housing parts 24 and 25, see also paragraph 0038.

D55 does not give any detail of the internal structure of "planar or folded paper filter" 22 (paragraph 0015) shown in different orientations in figure 1 and 2.

3. Inventive step

3.1 Inventive step has first been challenged starting from either D35 as suitable starting point, or alternatively starting from either D7 or D10. As concluded in relation to novelty, the power cutter of claim 1 differs from each of these disclosures by the pleats which hang substantially vertically downwardly when the power cutter is in its standard orientation, as interpreted above.

3.2 The objective technical problem should be formulated in accordance with the technical effect associated with this particular differing orientation of the pleats. According to established case law an objective definition of the problem to be solved by the invention should normally start from the problem described in the contested patent, see Case Law of the Boards of Appeal (CLBA), 9th edition, 2019, I.D.4.3.2. According to paragraph 7, this problem is to provide a simple construction of a filter which is easy to clean.

3.3 The appellant submits that the orientation of the pleats does not solve the problem of easier cleaning; or is already solved in D35 as explained in col 4, lines 38-40 and in D7 or D10 in which the dust caught in the filter can also fall out due to the effect of gravity. Therefore in either case the problem should be reformulated as allowing an easier replacement of the filter.

3.4 The Board cannot follow this argument. As indicated above in section 2.2, with the pleats pointing downward so that in cross-section they form "V"'s, dust can drop downwards under the action of gravity unimpeded. By contrast, in the perpendicular arrangement of pleats shown in D7 or in D10 where the pleats project laterally with their sides in vertical planes, these impede to a substantial extent the dust particles adhering thereto from falling freely downwards out of the filter as their path would essentially coincide with the sides of the vertical pleats. This is also not the same effect referred to by the appellant and explained in column 4, lines 38-40, of D35. In D35 gravity helps to filter out heavy particles borne upward in an upward air flow before the particles reach the filter. By this upwardly directed airflow the heavy particles remain in the dirt space 25 and clogging of the filter is prevented. This effect obtained in operation does not relate to the cleaning of filter pleats at rest.

Therefore, D7, D10 and D35 are not already seen to produce the above effect. Consequently, the associated objective technical problem can indeed be based on easier cleaning, due to the unimpeded fall of dust, i.e. can be formulated as providing a simple, easy to clean filter.

3.5 Non-obviousness starting from D35.

Even if the skilled person were aware of filters that are hung from above as also shown in D11 (figures 1 or 8: pleated filter 61 in circumferential frame 62) or D30 (figure 1, pleated filter 10), none of these documents teaches that the specific arrangement of hanging pleats facilitates cleaning. D11, see paragraph 0009, rather appears concerned with reducing the number of steps of fixing the filter in its housing, while D30, see its abstract, focuses on improving filter activity by incorporating active carbon in the folds of the filter. Thus, the skilled person has no incentive to look towards D11 or D30 to make cleaning easier. Even if they did, the particular arrangement of the filter within their housings in D11 is so disparate from that in D35 that it cannot easily be transferred to the D35 filter arrangement, that is without considerable redesign. In D35, see abstract, the filter 39 is purposely shaped and arranged within housing parts to guarantee a desired airflow. This precludes a simple insertion of a filter as in figure 1 of D11. Similar considerations apply to the filter design of D30. This has pleats filled with active carbon and sealed with a cover layer 20, and this construction appears incompatible with the complex filter shape and matching support 38 of D35.

3.6 Non-obviousness starting from either D7 or D10.

Tasked with the same problem of making cleaning of the filter disclosed in either D7 or D10 easier, the Board is unconvinced that the skilled person would obviously rotate the filter pleats by 90° either drawing from common general knowledge, or in the light of D11 or

D30. D7 (see abstract, figure 2) and D10 (figure) provide similar integrated axially compact filter arrangements in which air passes laterally through a succession of vertical filters spaced closely together, the whole arrangement being accessible via a lid 4 at the lateral end of the housing. This compact design is predicated on a vertical arrangement of the filters, so that the skilled person would not as a matter of obviousness consider rotating this by 90°, even if D11, D30 or common general knowledge did suggest such a vertical placement to make cleaning easier (they do not).

- 3.7 The Board has also concluded that both D53 or D55 fail to disclose pleats hanging vertically downward, much less that this arrangement would facilitate cleaning. Therefore irrespective of the question of their admission into the proceedings, their combination with either D35, D7 or D10 would not result in a configuration according to claim 1.
- 3.8 None of the challenges against inventive step succeed. The Board concludes, therefore, that, in the light of the prior art cited, the subject-matter of claim 1 as granted involves an inventive step within the meaning of Article 56 EPC.
4. In the light of the above, the Board confirms the Opposition Division's decision to reject the opposition under Article 101(2) EPC.

Order

For these reasons it is decided that:

The appeal is dismissed

The Registrar:

The Chairman:



G. Magouliotis

A. de Vries

Decision electronically authenticated