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D E C I S I O N
of 5 March 2002

Case Number: T 0064/99 - 3.2.3

Application Number: 91301472.6

Publication Number: 0443882

IPC: E01H 1/08, A01G 1/12, A47L 9/08

Language of the proceedings: EN

Title of invention:
Improvements relating to collection devices

Patentee:
Coathupe, John Edward

Opponent:
Electrostar Schöttle GmbH & Co.

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
"Novelty (yes)"
"Inventive Step (yes)"

Decisions cited:
-

Catchword:
-



Case Number: T 0064/99 - 3.2.3

D E C I S I O N
of the Technical Board of Appeal 3.2.3
of 5 March 2002

Appellant: Electrostar Schöttle GmbH & Co.
(Opponent) Stuttgarter Strasse 36
D-73262 Reichenbach (DE)

Representative: Schmid, Berthold, Dipl.-Ing.
Kohler Schmid + Partner
Patentanwälte
Ruppmannstrasse 27
D-70565 Stuttgart (DE)

Respondent: Coathupe, John Edward
(Proprietor of the patent) 15 Lynton Place
Broughton
Nr. Chester, CH4 0RP (GB)

Representative: Geoffrey Owen & Company
76 Lower Bridge Street
Chester CH1 1RU (GB)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 1 December 1998
rejecting the opposition filed against European
patent No. 0 443 882 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: C. T. Wilson
Members: J. B. F. Kollar
V. Di Cerbo

Summary of Facts and Submissions

- I. European patent No. 0 443 882 comprising fourteen claims was granted to the Respondent.

Claim 1 of this patent reads:

"1. A collection device for removing loose material from a fixed surface by means of a stream of air, the collection device comprising an elongate duct (3) through which the loose material is conveyed from an upstream end region of the duct defining a collection mouth (7) towards a downstream region of the duct when the collection mouth (7) is disposed in a ready to collect position relative to the fixed surface, a source of pressure air and means for feeding pressure air to one or more air outlets (23,25) disposed in the region of the collection mouth (7) to provide a stream of air for use in conveying loose material lifted from the fixed surface, into and along the duct, characterised in that,

an air outlet (23,25) opens directly into the duct (3) and is located in the region of one end of a control surface (27,29), at least part of which control surface is generally convex, the control surface (27,29) extending downstream of the duct(3), said air outlet (23,25) being arranged to direct a stream of air over the control surface (27,29) whereby the stream of air issuing from the outlet (23,25) is directed in a direction transverse of the longitudinal axis of the duct (3), and is directed within the duct and generally downstream within the duct, when the

collection mouth is spaced above the fixed surface, the stream of air issuing from the air outlet (23,25) inducing an additional flow of atmospheric air into the duct (3) via the collection mouth (7) to assist in lifting loose material from the fixed surface and in conveying the material downstream within the duct."

II. The Appellant filed an opposition against the above European patent, citing the documents

D1: FR-A-2 541 701 in its version GB-A-2 138 280

D2: US-A-1 383 455

D3 US-A-4 018 483

D4: US-A-3 004 279

D5: BE-A-890 518

and requesting that said patent be revoked on the basis of lack of novelty. He asserted that document D1 was novelty destroying with regard to Claim 1 of the contested patent.

III. According to the decision of the Opposition Division dispatched on 1 December 1998, the opposition was rejected. The Opposition Division, which considered document D1 to be the closest prior art, took the view that the subject-matter of Claim 1 was novel over D1 and involved an inventive step because none of the documents cited by the Opponent led the skilled person to improve the teaching of document D1 by the features claimed in Claim 1.

IV. The Appellant appealed against this decision on 14 January 1999 paying the appeal fee on the same day. The statement of Grounds of Appeal was received on 26 March 1999.

With a submission dated 18 May 2000 the Appellant cited for the first time document GB-A-2 152 362 (D6), arguing that the subject-matter of Claim 1 was obvious in the light of this document.

V. The arguments presented by the Appellant in the written submissions and at the oral proceedings held on 5 March 2002 can be summarised as follows:

The apparatus shown in Figure 7 of document D1 comprises in addition to the air delivery duct 3 two further ducts 3' and 3"; the duct 3' opens into a nozzle 4' and the duct 3" opens into a nozzle 4", these nozzles being arranged one above and one below the nozzle 4 of the duct 3. Disposed in front of the nozzle 4" of the upper delivery duct 3" is a curtain 24 which extends as far as the ground and floor. The curtain 24 is however an optional feature of the apparatus according to D1 (reference is made particularly to page 2, lines 67 to 74 of D1) and it can thus be disregarded for the assessment of novelty of the subject-matter of Claim 1 of the patent in suit. Omitting the curtain 24 from the apparatus of D1 results in that the embodiment of the apparatus according to Figure 7 of D1 discloses all the constructional features of the cleaning device of Claim 1. Moreover, the lip of the nozzle 4', designated with reference sign "F" in the enlarged copy of Figure 7 submitted with the letter dated 7 January 2002, causes the air flow to follow the control surface

designated with reference sign "D" in said enlarged copy, so that the air flow in apparatus according to D1 corresponds to the downstream flow of air within the duct as claimed in Claim 1.

It is submitted that the subject-matter of Claim 1 lacks novelty over the disclosure of document D1.

The subject-matter of Claim 1 differs from that of D6 only in respect of the construction of the flow surfaces of the air outlets and the elongated air duct which have been arranged to induce laminar flow due to the boundary layer effect to enhance the induction of atmospheric air. This effect is however well-known to the man skilled in the art so that no inventive effort is required to adapt the flow surfaces of D6 accordingly.

VI. In contesting these arguments, the Respondent submitted that the claimed cleaning device according to Claim 1 is novel.

In respect of document D1 forming the closest state of the art he points to the fact that the Appellant has not produced new arguments in the appeal proceedings but only relied on arguments already discussed before the Opposition Division. It is emphasised that not only the curtain 24 but also the scraper 8' are essential features of the embodiment of the apparatus shown in Figure 7 of D1 and if omitted the air flow from the nozzles 4, 4' and 4" would follow the surface to be cleaned. The constructional features of the apparatus of D1 direct the air flow against the ground and rely on the ground to deflect the flow of air into the

elongate duct. The air flow behind the lip "F" in D1 is too weak to carry the debris and for producing the suction stream along the surface "D" of duct 3.

The device according to Claim 1 differs from the prior art of D1 in that the air outlet directs a stream of air into the elongate duct. It is submitted that said effect is achieved by a combination of features closer specified in Claim 1, the subject-matter of which is thus novel over the disclosure of D1.

As far as D6 is concerned, the Appellant has failed completely to show the relevance of this late-filed document which should therefore be excluded from the procedure. Not only does the device not show an air outlet in the region of the collector mouth, but the Appellant has also failed to show why the man skilled in the art would modify the flow surfaces in the manner claimed in Claim 1.

VII. The Appellant requests that the impugned decision be set aside and the patent be revoked.

The Respondent requests that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.
2. *Late-filed document D6*

The suction cleaning apparatus according to document D6

comprises a central elongate suction duct surrounded by a plenum chamber from which air is blown through inclined air outlets into the central suction duct, the inclined air outlets being axially spaced from the collection mouth at the inlet end of the central suction duct. Therefore, no air outlet is disclosed in the region of the collection mouth of the suction duct, and no disclosure is given of any arrangement of flow surfaces to achieve laminar flow. In its arguments the Appellant has not addressed the feature of the air outlets at the collection mouth of the suction duct at all, and it is mere conjecture to simply argue that the person skilled in the art would adapt the flow surfaces within the suction duct to achieve laminar flow in the absence of any suggestion so to do in D6.

The Board does not therefore consider this document to be so relevant as to be admitted into the procedure and in accordance with Article 114(2) it is disregarded.

The Board would point out in this respect that it had expressed provisionally its intention to disregard this document in the annex to the summons to attend oral proceedings and the Appellant did not refer again to the document in the oral proceedings.

3. *Novelty*

- 3.1 The Board agrees with the Respondent that the embodiment according to Figure 7 of D1 illustrates the established trend of the prior art, namely that in order to achieve good cleaning results, it is essential to direct the air nozzles at an inclined angle against the surface to be cleaned and thus to deflect the air flow into the elongate duct. In contrast to this, in

accordance with the present invention the air is directed by the air outlets transversely of the longitudinal axis of the elongate duct, to then flow along the control surface. This has the effect that when the device is held spaced from the ground, air is induced into the elongate duct assisting in lifting loose material from the fixed surface to be cleaned. In D1 it is quite clear that the device must be placed on the ground since the air directed at the ground would otherwise escape along the ground blowing the loose material away.

It is noted in respect of the ducts 3' and 3" according to the discussed embodiment of D1 that said ducts are intended to carry away the excess of air flowing up the elongate duct which excess is produced as a result of the outside air being sucked in by the entrainment effect of the air jet formed by the nozzle 4 being deflected by the ground into the elongate duct (see page 2, lines 45 to 48 of D1). In fact the air pressure in nozzle 4 will be greater than that in nozzles 4', 4" and will force the streams from the nozzles 4' and 4" to follow the air flow from the nozzle 4 directed against the ground. There is no intention in D1 to direct air along the control surface.

- 3.2 The Board does not see any significant similarity between the aforementioned arrangement of ducts and nozzles in the apparatus of D1 and the requirement on the air outlet claimed in Claim 1 of the patent in suit, according to which said air outlet opens directly into the duct... and is arranged to direct a stream of air over the control surface... in a direction transverse of the longitudinal axis of the duct and

generally downstream within the duct.

- 3.3 The Board has therefore come to the conclusion that the features claimed in Claim 1 distinguish the invention of the patent in suit from the disclosure of document D1.

The subject-matter of the independent Claim 1 thus satisfies the requirements on novelty according to Article 54 EPC.

4. *Inventive step*

- 4.1 Considering document D1 as the starting point for the invention, the objective technical problem to be solved by the invention is to provide a collection device which utilizes a stream of air so as to lift and collect loose material, such as empty drink cans, off a fixed surface. This includes, as pointed out by the Respondent during the opposition and appeal proceedings, the requirement of the collecting function of the device when the collection mouth is spaced above the fixed surface.

The problem is plausibly solved by the features defined in Claim 1.

- 4.2 The Board has also found it necessary to address the question of whether the skilled person aware of the disclosure of the cited prior art according to documents D2 to D5 would either be led directly by the teaching of these documents, or would be led by them to modify D1, so as to arrive at the claimed invention.

- 4.3 The question must be answered in the negative. In view

of the established trend in the cited prior art to arrange the air outlets to direct a stream of air at an inclined angle against the surface to be cleaned, as pointed out in section 3 above, the skilled person was led by the revealed prior art in another direction pointing away from the invention. Acting against such a trend as in the present case, may be considered to indicate the existence of inventive step. It follows that the combination of features of Claim 1 was non-obvious in the light of the existing problem.

4.4 For the foregoing reasons the Board is of the opinion that the subject-matter of Claim 1 involves an inventive step in the sense of Article 56 EPC.

5. Claims 2 to 14 are dependent on Claim 1, and relate to embodiments of the invention so that they too are therefore patentable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

A. Counillon

C. T. Wilson