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**Datasheet for the decision  
of 13 January 2020**

**Case Number:** T 2398/16 - 3.2.04

**Application Number:** 02706055.7

**Publication Number:** 1365669

**IPC:** A44B18/00, A61F13/62

**Language of the proceedings:** EN

**Title of invention:**  
DIRECT HOOK ENGAGEMENT

**Patent Proprietor:**  
VELCRO BVBA

**Opponent:**  
3M Innovative Properties Co.

**Headword:**

**Relevant legal provisions:**

EPC Art. 56  
RPBA Art. 13(3)

**Keyword:**

Inventive step - obvious alternative  
Late-filed request - change of subject-matter

**Decisions cited:**

**Catchword:**



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Case Number: T 2398/16 - 3.2.04

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.04**  
**of 13 January 2020**

**Appellant:**  
(Patent Proprietor)

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**Decision under appeal:**

**Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
23 August 2016 concerning maintenance of the  
European Patent No. 1365669 in amended form.**

**Composition of the Board:**

**Chairman** A. de Vries  
**Members:** S. Oechsner de Coninck  
C. Heath

## Summary of Facts and Submissions

I. The Proprietor and the Opponent both appeal against the opposition division's decision dated 23 August 2016 to maintain the European patent N° 1 365 669 in amended form. The Proprietor filed a notice of appeal on 24 October 2016, paid the appeal fee the same day, and filed the statement of grounds on 22 December 2016. The Opponent filed a notice of appeal on 31 October 2016, paying the appeal fee on the same day, and filed the statement of grounds on 30 December 2016.

II. The opposition was based on the grounds of Article 100, (b) and (c), and 100(a) EPC in combination with lack of novelty and inventive step. In its written decision the Opposition Division held that the patent as amended according to the auxiliary request complied with the requirements of the EPC, having regard in particular to the following documents:

D1: US 5 900 350 A

D5: US 5 845 375 A

III. The Appellant-Proprietor requests that the decision under appeal be set aside and that the patent be maintained on the basis of the Main Request filed on 19 January 2016, or on the new Main Request filed during the oral proceedings before the Board.

The Appellant-Opponent requests that the decision under appeal be set aside and that the patent N° 1 365 669 be revoked.

IV. The wording of claim 1 of the main request and auxiliary request is as follows:

*Main request*

"In combination, a wearable garment in form of a medical gown or a face mask or a diaper with a non-woven material broadly covering an outer surface thereof, and a piece of fastening tape permanently attached to one region of the non-woven material and releasably engaging another portion of the non woven material, The fastening tape comprising a sheet-form base carrying an array of hooking members (10,22,24), each hooking member having a stem (14,14',28) integrally molded with and extending from a side of the base, and a head (16,16',26) overhanging the base in a common direction along the tape, the head extending from the stem to a distal, re-entrant tip (18,18',32) to define an engageable crook (20,30); wherein the hooking members are of J-shape or palm tree shape each have a height (h) of 0,2 millimeter (0.008 inch) or less, as measured from the base, and each have a thickness, as molded, of less than 0,13 millimeter (0.005 inch); and the re-entrant tips (18,18',32) are each disposed a distance (d) less than 0,08 millimeter (0.003 inch) from an upper surface of their respective hooking members, as measured normal to the base; the wearable garment having no added loop material and the hooking members (10,22,24) of the fastening tape each directly engaging the non-woven material."

*New Main Request filed during the oral proceedings  
before the Board*

1 In combination, a wearable garment in form of a medical gown or a face mask or a diaper with a non-woven material broadly covering an outer surface thereof, and

a piece of fastening tape permanently attached to one region of the non-woven material and releasably engaging another portion of the non-woven material,

the fastening tape comprising a sheet-form base carrying an array of hooking members (10,22,24), each hooking member having a stem (14,14',28) integrally molded with and extending from a side of the base, and a head (16,16',26) overhanging the base in a common direction along the tape, the head extending from the stem to a distal, re-entrant tip (18,18',32) to define an engageable crook (20,30);

wherein the hooking members are of ~~J-shape overhanging the base in a single direction,~~ or palm tree shape each having two re-entrant tips (32) and defining two engageable crooks (30) and overhanging the base in two opposite directions; the hooking members each have a height (h) of 0,2 millimeter (0.008 inch) or less, as measured from the base and each have a thickness, as molded, of less than 0,13 millimeter (0.005 inch); and

the re-entrant tips (18,18',32) are each disposed a distance (d) less than 0,08 millimeter (0.003 inch) from an upper surface of their respective hooking members, as measured normal to the base;

the wearable garment having no added loop material and the hooking members (10,22,24) of the fastening tape each directly engaging the nonwoven material.

- V. Oral proceedings were held on 13 January 2020.
- VI. The Appellant-Proprietor argued as follows:
- The dimensions of the hooks in the embodiment of fig. 17b of D1 are not disclosed. In any case this embodiment would not be considered suitable to replace the hooks of D5. Rather, the person skilled in the art would turn to figure 17c because this embodiment is explicitly envisaged for non-woven fabrics.
  - The auxiliary request focuses on one alternative with palm tree shape already present in the claim and is thus clearly allowable.
- VII. The Appellant-Opponent argued as follows:
- D1, see figure 17b and col 17 last paragraph, directly discloses heights of half of 0.005 inches falling within the claimed range. This embodiment would obviously be considered by the skilled person looking for an alternative to the the hooks of D5.
  - The auxiliary request opens a new topic of the palm tree shape that has never been discussed until now.

### **Reasons for the Decision**

1. The appeal is admissible.
2. Main request - inventive step
  - 2.1 It is common ground that the document D5 can be considered as a suitable starting point for assessing inventive step. D5 describes disposable wearable garments in the form of a diaper or a medical gown (see col. 1, lines 15-22). D5 further discloses the feature that the garment has a non-woven material broadly

covering an outer surface thereof (col. 9, lines 39-41 and 55-60) and has no added loop material. As, moreover, it discloses the same type of wearable garment with non-woven material, D5 indeed appears promising for assessing inventive step of claim 1.

2.2 The garment defined in claim 1 differs from D5 by the J-shape or palm tree shape of the hooks with the specific dimensions of height and distance of the re-entrant tips from the top. In D5 the hooks are mushroom shaped, though of a height and stem diameter (col. 4, ln. 35 to 41 :0.1 mm to 1.27 mm respectively 0.076 to 0.635 mm) in ranges that overlap with the claimed height and molded thickness range.

2.3 The effect of having hooking members of J or palm tree shape of particular dimensions, according to the patent, see specification paragraph [0005], is that they can engage directly with a variety of materials without the need of a looped material. D5 already provides a solution to the this problem. Consequently, the objective technical problem must be reformulated. The Board agrees with the re-formulation of the problem as proposed by the opposition division and which is not disputed, namely to provide an alternative hooking member configuration.

2.4 In looking for an alternative hooking member, the skilled person would look towards D1 as particularly relevant. In the summary of the invention D1 expressly mentions the provision of hooks for directly engaging fibers of non-woven material of a mating fabric (column 4, lines 61-65; column 7, lines 13-15 and lines 41-45) and therefore clearly suggests to the skilled person the particular suitability of hooks of the J-shaped type for direct engagement with non-woven fabric. D1



considers several embodiments of such a hook. The main traits of the hook are shown in figures 2a,2b,2c,2d, described in detail in col.9, ln 26, to col.10, ln. 54, where it is referred to as a "microhook". The various parameters defining its shape are shown in figure 1a. Figure 17a-c in conjunction with paragraph bridging columns 17 and 18 then compares different sized hooks, with figure 17b and 17c showing reduced size variants referred to as "sub-microhook". In particular, column 17, lines 50 to 53, compares the microhook of figure 17a, which is of overall height H (figure 1a) of about 0,38 mm (0,015 in.) and "detailed earlier" with a reduced size sub-microhook of figure 17b, which has a height of 0,2 mm (0,08 in.), corresponding to the upper limit of the range of heights defined in claim 1 of the main request. This is not denied by the appellant, who however contests the direct and unambiguous disclosure of the two other dimensions, namely the distance of the re-entrant tip required to be lower than 0,08 mm and the thickness measured from the base of less than 0,13 mm.

2.5 The Board however finds otherwise. The sub-microhook represented in figure 17b has an identical shape as the hook of figure 17a, as is apparent from a comparison of the two figures, and differs only in that it is scaled down. This is immediately apparent for the skilled person reading the whole content of the disclosure of D1 using synthetic propensity, from the first sentence of the last paragraph in column 17 which states that "Referring to FIG. 17b, a hook element according to FIGS. 2a-d is provided having an overall height H of 0.008 in". Clearly, therefore, the hook of figure 17b, apart from size, corresponds to that shown in figures 2a-d, i.e. will have the same geometrical shape, but reduced dimensions.

The scaling factor can be inferred from the ratio of the overall height H given for figures 17b and 17a as  $0.008\text{in} / 0.015\text{in} = 0.53$ . Thus, for height  $H_c = 0.005$  for the figure 17a hook the corresponding scaled down value for the sub-microhook of figure 17b will be  $0.53 \times 0.005\text{in} = 0.00265\text{in}$  or  $0.067\text{mm}$ . Height  $H_c$ , see figure 1a of D1, corresponds to the distance between reentrant tip and from the upper surface, see figure 1 of the patent. Thus, the submicrohook of figure 17 is seen to have a value  $H_c$  or  $d$  of  $0.067\text{mm}$  within the claimed range up to  $0.08\text{mm}$ .

As regards the value of the "thickness as molded" the patent does not provide a definition of this parameter. If it is interpreted as the thickness at the rounded tip of the overhang, i.e. its diameter, then column 17, lines 49 to 51, gives a value of  $0.0016\text{in}$  (twice the radius of  $0.008\text{in}$ ) or  $0.04\text{mm}$ . This is again well within the claimed thickness range of less than  $0.13\text{mm}$ . Alternatively, it might correspond to width  $t$  of the pedestal at half height, see figure 4 of the patent relating to an abandoned hook shape. The pedestal width at half height at most equals that of the corresponding mold used to produce the hook. According to column 9, lines 7 to 9 for the mold giving rise to the same shape hook of figure 2, this is "about half the height of the hook shaped cavity, or more." For the sub-microhook of figure 17b this translates to a pedestal width at half height of  $0.008/2 = 0.004\text{in}$ . or  $0.1\text{mm}$  again within the claimed range up to  $0.13\text{mm}$  of claim 1.

It follows from the above that the skilled person striving to realise in practice the sub-microhook shown in figure 17b. would directly infer the above values of height, distance of re-entrant tip and thickness from the whole content of the description.

2.6 The above assessment does not require complex calculations and appears self-evident. Nor is it based on an impermissible combination of selected passages from the description as suggested by the Appellant-Proprietor. Indeed, the microhook depicted in figures 2a to 2d is the hook produced from the mold cavity shown in figures 1 and 1a (column 9, lines 36-37), whereby the hook element of figure 17b is the same as described in figures 2a to 2d (column 17, lines 49-50: "microhook in Fig 17a .... described earlier"). Therefore, that passage must be read in conjunction with those earlier passages detailing hook shape and dimensions as forming a single coherent disclosure.

2.7 In looking for an alternative to the mushroom hook of D5, the skilled person would obviously have considered the J-shaped sub microhooks of D1. By replacing the hooks of D5 by those of figure 17b they would then arrive at the subject-matter of claim 1 without inventive activity.

2.8 The Appellant-Proprietor also submits that D1 teaches that it is the hook of figure 17c rather than that of figure 17b that is specifically adapted for engagement with non woven fibers. That hook does not include a re-entrant tip, as explained in the sentences bridging columns 17 and 18. This embodiment is the one that the skilled person would have selected, so that they would therefore not arrive at the claimed solution with a re-entrant tip if they were to draw on D1's teaching.

The Board does not agree. The sentence bridging columns 17 and 18 only indicates special suitability of the hook according to fig. 17c for engaging nonwoven fabrics in which the fibers are tightly bound and present little loft. This passage does not apply to all

nonwoven types of fabric that are less tightly bound with high loft, nor does it exclude suitability of the other hooks of 17a and 17b for engaging nonwoven fabrics at all. As already observed, D1 considers general applicability to a variety of materials including nonwovens, see column 1, lines 34-38 or column 4, lines 61-64. For nonwovens, D1 in col. 10, ln. 7 to 18 in relation to the hook member of figures 2a to 2c specifies that these must be small, preferably less than 0.020in in height. The submicrohooks of figure 17b clearly meet this requirement.

2.9 The Appellant-Proprietor further considers that D1 does not indicate any suitability of the hooks for direct engagement of nonwoven fabric broadly covering a garment. In the Board's view however it is not necessary for D1 to indicate such a suitability. D1 is concerned primarily with the shape and size of individual hooks, and their manufacture, that result in good fastening properties for a wide variety of materials. This is regardless of how the mating fabric is realized, whether as separate element or as integral part of the garment fabric. The skilled person recognizes this general capability immediately. Thus, when looking for an alternative to the hooks of D5, a document that undisputably discloses engagement with nonwoven fabrics covering the whole garment (col. 9, lines 39-41 and 55-60), they will recognize immediately that hooks as in figure 17b of D1 are eminently suitable for that purpose and that they need replace only the hooks and nothing else on the garment. Therefore, the skilled person does not need any pointer in D1 for such application. Rather, it is enough that D1 teaches the use of sub-microhooks with any type of nonwoven fabric.

- 2.10 From the above, the Board concludes that the subject-matter of claim 1 according to the main request lacks an inventive step, starting from D5 and applying the teaching of the disclosure D1.
3. New Main Request filed in the oral proceedings before the Board
- 3.1 The New Main Request was filed at the oral proceedings before the Board, and amounts to an amendment to the Appellant-Proprietor's case in the sense of Article 13 of the Rules of Procedure of the boards of Appeal (RPBA) in the applicable version of 2007 pursuant Article 25(3) of the revised Rules of Procedure in effect from 1 January 2020. According to Art 13(3) RPBA 2007, any amendment sought to be made after oral proceedings have been arranged shall not be admitted if they raise issues which the Board or the parties cannot reasonably be expected to deal with without an adjournment.
- 3.2 The approach consistently adopted by the boards when exercising their discretion in admitting an amendment filed at the very last stage during oral proceedings consists in identifying whether good reasons exist for filing the amendment so far into the proceedings - for example if it is occasioned by developments in the proceedings. Unless such a justification exists, amendment to a party's case will be admitted only if it does not extend the scope or framework of discussion as determined by the decision under appeal and the statement of the grounds of appeal, and is moreover clearly allowable, see Case Law of the boards of Appeal, 9th edition, 2019 (CLBA) V.A.4.5.1 b) and the case law cited therein.

- 3.3 The auxiliary request deletes the alternative with J-shape overhanging in a single direction, thus limiting the claim to the palm tree shaped hook. J shape hooks further supplemented by the additional parameter of the thickness had always been the main focus of the opposition and of the following appeal proceedings to date. Nor was the palm tree shape in combination with the same minimum base thickness as molded ever the sole subject of any request. The New Main Request therefore represents an unexpected shift of the subject of the debate. It is highly questionable whether either the Appellant-Opponent or the Board can fairly be expected to deal with this unexpected shift within the framework of the oral proceedings.
- 3.4 Moreover, the Board observes that D1 at column 15, lines 3-6, mentions palm tree hooks as a possible application of its teaching. Consequently, it is by no means immediately apparent that this amendment overcomes the lack of inventive step as held above. Thus, the New Main Request is not clearly allowable.
4. For these reasons, the Board decided to use its discretion under Articles 13(1) and (3) RPBA 2007 with Article 114 (2) EPC not to admit this request in the proceedings.
5. As the claim 1 of the Main Request fails to meet the requirements of Art.52(1) and 56 EPC and the New Main Request filed at the oral proceedings before the Board is not admitted, the patent must be revoked pursuant to Article 101(3) (b) EPC.

**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

A. de Vries

Decision electronically authenticated