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**Datasheet for the decision
of 8 December 2017**

Case Number: T 1056/14 - 3.2.03

Application Number: 03703857.7

Publication Number: 1476041

IPC: A44B18/00

Language of the proceedings: EN

Title of invention:
FASTENER ELEMENT PATTERNING

Patent Proprietor:
VELCRO BVBA

Opponent:
Firma Gottlieb Binder GmbH & Co. KG

Headword:

Relevant legal provisions:
EPC Art. 54, 56, 100(a), 100(b), 100(c), 123(2)

Keyword:

Novelty - (yes)

Inventive step - (yes)

Grounds for opposition - fresh ground for opposition (yes)

Alleged prior use - not substantiated, no more relevant than available prior art

Hearing of witnesses (no)

Decisions cited:

G 0009/91

Catchword:



Beschwerdekammern
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Chambres de recours

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Case Number: T 1056/14 - 3.2.03

D E C I S I O N
of Technical Board of Appeal 3.2.03
of 8 December 2017

Appellant: Firma Gottlieb Binder GmbH & Co. KG
(Opponent) Bahnhofstrasse 19
71088 Holzgerlingen (DE)

Representative: Bartels und Partner, Patentanwälte
Lange Straße 51
70174 Stuttgart (DE)

Respondent: VELCRO BVBA
(Patent Proprietor) Industrielaan 16
9800 Deinze (BE)

Representative: Müller-Boré & Partner
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Friedenheimer Brücke 21
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 19 March 2014
rejecting the opposition filed against European
patent No. 1476041 pursuant to Article 101(2)
EPC.**

Composition of the Board:

Chairwoman M.-B. Tardo-Dino
Members: C. Donnelly
V. Bouyssy

Summary of Facts and Submissions

- I. The appeal lies from the decision of the opposition division rejecting the opposition against European Patent No. EP-B-1 476 041.

In its decision the opposition division held that the alleged prior use had not been sufficiently substantiated and that the subject-matter of claim 1 as granted was both new and inventive with respect to documents EP-0 565 750 B (E1), DE-1 475 073 A (E2) and US 3 266 113 (E3).

The opponent (hereinafter: the "appellant") filed an appeal against this decision.

- II. In addition to documents E1, E2 and E3 the appellant also submitted annex A5 comprising enlarged figures from E3 with analysis and annotations. By letter of 19 February 2015, the appellant filed further annexes A6 and A7 illustrating the head and receptacle geometry of the device according to the patent and annex A8 showing annotations to figure 13a of E3.

The following evidence relating to an alleged prior use was also submitted:

A1 Photocopy of sheet entitled "MICRODUOTEC Funktionsprinzip"

A2: Technical report dated 30 August 2007 on testing of "Microduotec 25440" and "Duotec 41" by Dr. Rainer Gutmann, Institut für Textilchemie und Chemiefasern;

A3: Correspondence and invoices relating to sale of "Microduotec" (Microplast) to A. Bergman GmbH & Co KG;

A4: Correspondence and invoices relating to sales of Microplast and Duotec 41 to Binder Benelux BVBA and Binder Italia S.RL

The following witnesses were also offered:

Dr. Rainer Gutmann

Mr. Jan Tuma

Dr. Konstantinos Poulakis

- III. The patent proprietor (hereinafter: the "respondent") replied to the appeal on 18 November 2014 and to the appellant's submissions of 19 February 2015 on 29 July 2015.
- IV. In a communication dated 7 June 2017, pursuant to Article 15(1) of the Rules of Procedure of the Boards of Appeal (RPBA), annexed to the summons to oral proceedings, the Board informed the parties of its provisional opinion. In particular, the board indicated that it did not consider it necessary to hear the witnesses since the Microduotec product tested in A2 did not appear to be any more relevant than the disclosure of E3.

In response to the board's communication, the appellant made further submissions by letter of 23 October 2017. In particular, the appellant introduced a new objection under Article 123(2) EPC against claim 1 as granted.

- V. Oral proceedings were held on 8 December 2017. At the end of the debate the parties confirmed the following requests:

The appellant requested that the decision under appeal be set aside and the patent be revoked.

The patent proprietor ("respondent") requested that the appeal be dismissed and withdrew all its other requests.

VI. Claim 1 as granted reads:

"A touch fastener product comprising a sheet-form base (12); and an array of fastener elements (14) each having a stem (16) extending from a broad side of the base to a distal head (18) overhanging the base, the fastener elements arranged in an ordered pattern of straight rows;

characterized in that

the heads (18) of the fastener elements cover the base at a head density of between 20 and 35 percent, and the fastener elements (14) are arranged to define a sufficient number and pattern of pockets (24) between adjacent stems within associated groups of the fastener elements (14) to provide a bulk locking ratio of at least 10 percent when engaged with an identical pattern at a zero degree engagement angle."

VII. Reference was made to the following feature analysis during the proceedings:

- 1a - A touch fastener product comprising
- 1b - a sheet-form base (12); and
- 1c - an array of fastener elements (14)
- 1d - each having a stem (16) extending from a broad side of the base to a distal head (18) overhanging the base,

1e - the fastener elements arranged in an ordered pattern of straight rows;
1f - the heads (18) of the fastener elements cover the base at a head density of between 20 and 35 percent, and
1g - the fastener elements (14) are arranged to define a sufficient number and pattern of pockets (24) between adjacent stems within associated groups of the fastener elements (14) to provide a bulk locking ratio of at least 10 percent when engaged with an identical pattern at a zero degree engagement angle.

VIII. The arguments of the parties can be summarised as follows

(a) Appellant

Validity of prior use

Touch fasteners under the trademarks "Microduotec 25440" and "Duotec 41", which were the subject of the technical report submitted as A2, were sold to Berger GmbH, Binder Benelux BVBA and Binder Italia SRL before the priority date of the patent.

The "Microduotec 25440" product was also sold in a transitional period under another trademark "MICROPLAST". Both names appear on the various invoices of A3 and A4.

Insufficiency of disclosure, Article 100(b) EPC

As demonstrated in annexes A6 and A7, the bulk locking ratio is in fact zero in all the examples of the patent since the requirement that:

"the entire extent of any flat portion of the head surface is within a polygon connecting the centers of all of the fastener elements defining the receptacle"

specified in the definition of the bulk locking ratio at paragraph [0062] of the patent is not fulfilled.

Therefore, requirements of Article 100(b) EPC are not met since the patent gives no examples and provides no information as to how a head density of between 20 and 35% can be achieved simultaneously with receptacles defined by a polygon in which the head is entirely confined.

Extended subject-matter, Article 100(c), Article 123(2) EPC

Claim 1 as originally filed specified "pockets between associated groups of adjacent stems". Claim 1 as granted specifies "pockets between adjacent stems, within associated groups of the fastener elements" which was not originally disclosed.

Novelty, Inventive step with respect to E3

The subject-matter of claim 1 as granted lacks novelty or at least lacks an inventive step in view of E3. E3 discloses three and four element receptacles since at column 1, line 61 to column 2, line 21 of the description states that:

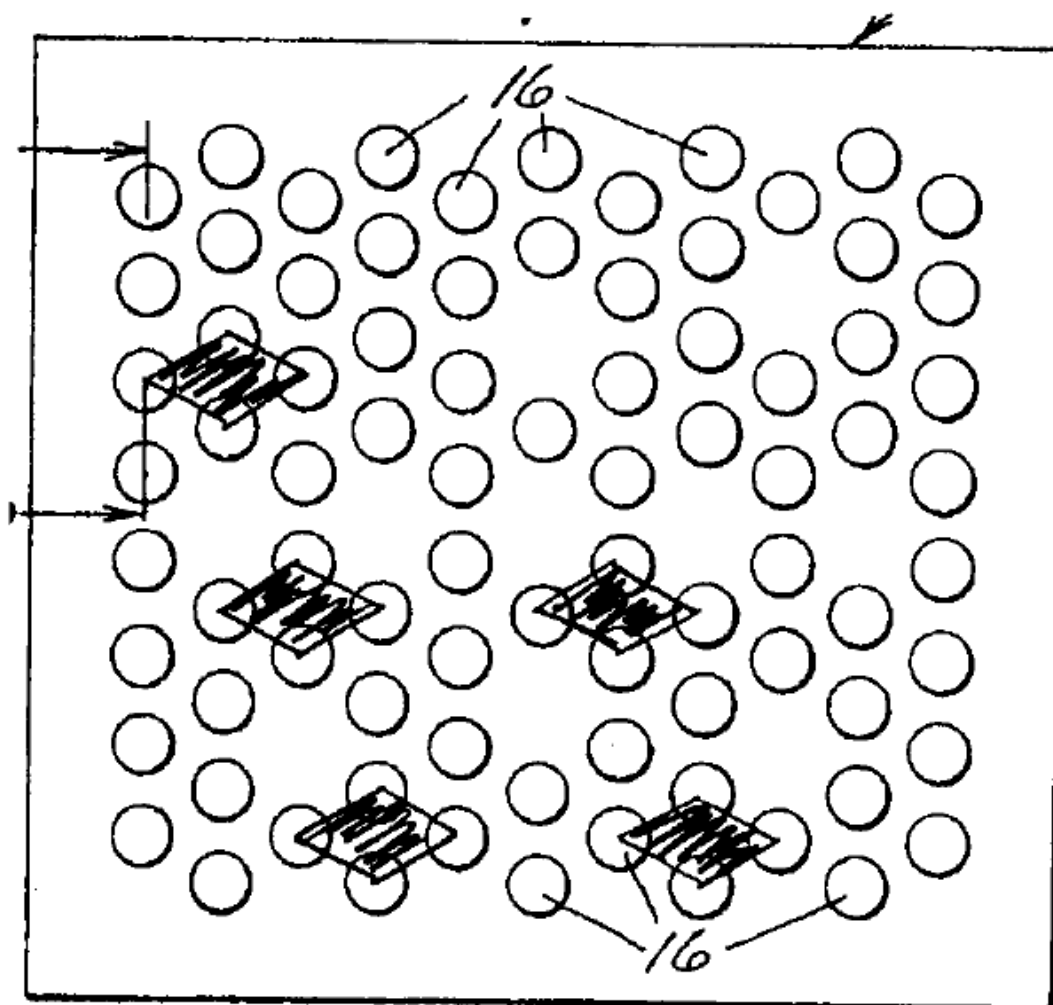
"The devices of the invention comprises....., in which: ... (3) The array of elements define regularly located spaces bounded by not less than three element loci which spaces are substantially just large enough to admit the heads of the elements of one article

between the stems of the other upon application of forces sufficient to deform, spatially displace and interengage them."

The expression "not less than three" indicates to the skilled person that E3 also covers fasteners comprising four element receptacles. This is borne out by the passage at column 4, lines 2 to 11 reading:

"The elements in most of the functional surfaces of the invention are located in regular grid patterns.... The grids vary in basic geometry (e.g. including rectangular.....)".

Therefore, the skilled person would recognise that the example shown in figure 2a of E3 comprises both three and four element receptacles as shown below:



It is evident that the minimum value of the head density in the above arrangement must be well over 0% for there to be any chance of engagement. Therefore, a head density of between 20 and 35% is implicitly disclosed or at least is an obvious measure which the skilled person would just arrive at by routine testing, less than 20% and engagement would be precarious, more than 35% and engagement would become difficult as exact alignment became more and more critical.

Similarly, the bulk locking ratio range claimed is so large that the above arrangement inevitably falls

within it or would at least be obvious for the skilled person to apply.

The arrangements shown in figures 1 and 2 of E3 could also be combined with that of figure 4 to obtain the subject-matter of claim 1.

Inventive step, E1 in combination with E3

Also the skilled person would combine the teachings of E1 and E3 and obtain the subject-matter of claim 1 in an obvious manner.

(b) Respondent

Validity of the prior use

It has not been shown that the products tested in A2 are the same as those allegedly sold before the priority date of 16 January 2002. Furthermore, A2 does not contain any test values which correspond to the bulk locking ratio claimed.

*Insufficiency of disclosure, Article 100(b) EPC,
Extended subject-matter, Article 100(c) EPC*

Both of these objections are fresh grounds of opposition. No consent is given for their admission into the appeal proceedings.

Novelty, Inventive step

None of the arrangements shown in E3 discloses or suggests a bulk locking ratio as claimed since the pockets of all the arrangements in E3 are always formed between three adjacent stems.

E1 is directed only to engagement of one pattern with a different pattern, namely engagement of the pattern shown in figures 1 to 3 with the pattern shown in figure 4. Thus, E1 and E3 present different solutions to a common problem, so even if the skilled person were to consult E1 when searching for improvements to E3, the results obtained would not lead to the subject-matter of claim 1.

Reasons for the Decision

1. *Admissibility of the opposition and appeal.*

The objections raised in the written procedure were withdrawn by the respondent during the oral proceedings. The Board has checked that the formal requirements are met. Therefore, the appeal is admissible.

2. *Insufficiency of disclosure, Article 100(b) EPC, Extended subject-matter, Article 100(c) EPC*

Both of these objections constitute fresh grounds of opposition since they were not made at the time of filing the opposition and were not subject of the opposition proceedings. Since the respondent has not consented to their admission into the appeal proceedings they cannot be considered by the board (see G9/91, Reasons, paragraph 18, OJ 1993, 408).

3. *Interpretation of the subject-matter of claim 1- new and/or unusual parameters*

Claim 1 is characterised by specifying ranges for the two parameters:

(i) "head density"

(ii) "bulk locking ratio"

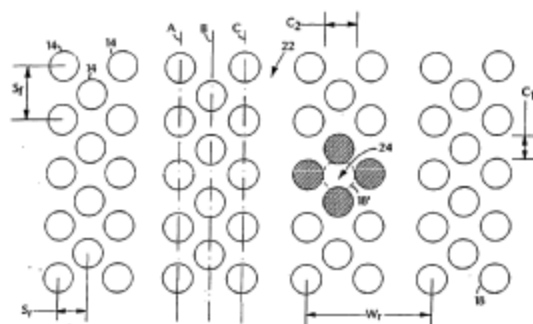
Neither of these parameters is actually defined in the claim.

3.1 In its letter of 18 November 2014 (see page 19, line 3), the respondent states that "the inventors devised a new technique and coined a new term, namely "bulk locking ratio". Thus, the "bulk locking ratio" is clearly a new parameter which is defined at paragraph [0062] of the patent:

"Bulk locking ratio is calculated similarly, except that it is only analyzed for arrays in which the fastener element stems are spaced close enough to prevent a head trapped in a **receptacle, defined between four adjacent stems** in two or three adjacent rows, from moving laterally out of the receptacle. At each analysis position of the two overlapped patterns, what is counted is the number of fastener element heads of the duplicate that are within receptacles of the original. **A head of the duplicate is said to be within a receptacle of the original if the entire extent of any flat portion of the head surface is within a polygon connecting the centers of all of the fastener elements defining the receptacle.** Such fastener element heads are said to be "locked" against gross lateral movement, even though they may freely move within the receptacle. For example, most of the fastener elements of the far left row of the duplicate in Fig. 11B are locked between fastener elements of the original, while

none of the fastener elements of the duplicate in Fig. 11 C are locked."

Thus, although theoretically a polygon can be drawn between three adjacent stems, it is clear that the polygon in question is that connecting the centers of all the fastener elements defining the "receptacle" (or "pocket" in the claim language) which is defined as being between four adjacent stems as shown below. Therefore, in the context of the patent, in particular when reading claim 1, the bulk locking ratio is to be read accordingly.



3.2 The board agrees with the respondent that "head density" is a straightforward parameter which the skilled person would have no difficulty in understanding since it simply relates the area of the heads of the fastener elements to the base. Consequently, the maximum theoretical upper limit is 50%, as given in the patent (see column 1, lines 26 to 27) since at greater values the two strips could not be pressed together.

4. *Alleged prior use*

4.1 The appellant alleges that a touch fastener under the trademarks "Microduotec 25440" and "Duotec 41", which were the subject of the technical report submitted as A2, were sold to Berger GmbH, Binder Benelux and Binder Italia before the priority date of the patent.

4.2 According to the appellant, the "Microduotec 25440" product was also sold in a transitional period under another trademark "MICROPLAST". Both names appear on the various invoices of A3 and A4.

4.3 A3 comprises:

- a reply dated 6 February 2001 from Gottlieb Binder GmbH (the appellant-opponent) confirming the dispatch of a sample of **MICROPLAST (Reg. Trademark) (MICRODUOTEC)** material in response to the request of A. Berger GmbH & Co.KG dated 1 February 2001;

- invoice with voucher no. 32869 dated 5 March 2001 for 1078,10 DM for 1470m of 50mm wide "**Microduotec**" self-adhesive product, invoice also comprises an indication of delivery by DPD-Paket with a date of 23 February 2001 to A. Berger GmbH & Co.KG in D-Krefeld

- invoice with voucher no. 36094 dated 27 April 2001 for 5442,26DM for 12680m of 25mm wide **Microplast, MICRODUOTEC** net weight 127kg; indication of delivery on 13 March 2001 to A. Berger GmbH & Co.KG in D-Krefeld;

- invoice with voucher no. 35435 dated 18 April 2001 for 445,90 Eur for 5200m of 15mm wide **Microplast** product, delivery note 043443 201342 and 50m of 20mm wide "Klettostar-Haft" delivery note 043444 201359 to "BINDER BENELUX BVBA" in B 2547 LINT - no dates

mentioned in connection with delivery but delivery note numbers are given.

4.4 A4 comprises a further invoice:

- invoice dated 15 January 2002 with voucher no. 48259 for 492m of 50mm wide **Duotec 41** and 492m of 90mm wide Duotec 41, indication of delivery on 2 January 2002 to BINDER ITALIA S.R.L in MILANO.

4.5 Therefore, the alleged prior use corresponds in fact to four separate sales of a product allegedly identical to those analysed in A2, and therefore novelty destroying for the claimed invention :

2 sales of **Microduotec** to A. Berger GmbH on 23 February 2001 and 13 March 2001;

1 sale of **Microplast** to Binder Benelux BVBA at a time around 18 April 2001;

1 sale of **Duotec 41** to Binder Italia perhaps on 2 January 2002;

4.6 However, although the answers to the questions of what was allegedly made available to the public (Microplast (MICRODUOTEC), Duotec 41), where (in Krefeld, Lint, Milan), how (by sale) and by whom (the opponent) have all been supplied, it has not been established that the products sold under these trade marks according to A3 and A4 were the same as those tested in A2.

4.7 A2 reports on tests carried out to measure the head densities of Duotec 41 and Microduotec 25440 fasteners. The following values are given:

Microduotec 25440: 34,12%; and
Duotec 41: 26,89%

which both lie within the claimed range.

4.8 A further value, referred to as the "Verhakungsdichte", was only measured for the Microdotec 254440 sample. However, this value does not correspond to the bulk locking ratio, but rather to the "bulk engagement ratio" (see column 1, lines 27 to 33 of the patent specification). Thus, not only is it not sure whether the fasteners tested in A2 were the same as those identified in A3 and A4, but also the test report values given in A2 do not correspond to the bulk locking ratio parameter claimed.

4.9 According to the report, every head of the Microdotec 25440 sample engages with three neighbouring heads (also to be seen in figure 4 of A2). Thus, the sample of Microdotec 25440 tested is no more relevant than the material shown in figures 2a and 2b of E3 since it relates to a head being locked in a receptacle defined by a polygon drawn between three heads.

5. *Hearing of witnesses*

5.1 The appellant submitted that its right to be heard had been violated (without explicitly alleging a substantial procedural error) since the opposition division did not hear the witnesses offered to support its case concerning the alleged prior use. It also requested that the witnesses should be heard at the appeal stage.

5.2 However, the board considers such a hearing to be unnecessary since not only should the details concerning the bulk locking ratio parameter of the fasteners tested have been correctly provided in

writing from the outset, but also the Microduotec product tested in A2 is, on the basis of the available information, clearly no more relevant than the disclosure of E3.

6. *Novelty with respect to E3*

6.1 Since the "bulk locking ratio" defined in claim 1 is a new parameter it is unsurprising that E3 does not contain any literal disclosure of it. Despite this, it still must be assessed whether any of the arrangements disclosed in the figures of E3 inevitably fall within the claimed range. In this situation, the onus to convincingly establish novelty over the embodiments (particularly figures 2a and 2b) illustrated in E3 lies with the respondent.

6.2 The board agrees with respondent that E3 does not disclose any arrangements in which the fastener element stems are spaced close enough to prevent a head trapped in a receptacle, defined between four adjacent stems in two or three adjacent rows, from moving laterally out of the receptacle. In the annotated figure 2a of E3 provided by the appellant it is evident that the fastener heads of the duplicate will only make contact with the two heads delimiting the hypothesised four stem pocket which are closest together. Thus, there is nothing to prevent lateral movement between the two heads which are furthest apart until the point at which the duplicate head becomes trapped in the true pocket defined by three adjacent stems.

6.3 Since the locking arrangements shown in E3, particularly figures 2a and 2b, 13a and 13b, all relate to receptacles or pockets defined between three stems, the bulk locking ratio of claim 1, which is specified

as relating to pockets defined between four stems, is not disclosed.

6.4 Furthermore, a head density ratio of between 20 and 35% is not explicitly disclosed in E3. It is also not possible to derive this value directly and unambiguously from the figures since these are merely schematic and do not allow precise calculations to be made.

6.5 Therefore, the subject-matter of claim 1 as granted is new.

7. *Inventive step*

7.1 The embodiment shown in figures 2a and 2b of E3 is considered to be the closest prior art. The subject-matter of claim 1 differs from these known fasteners by the features of the characterising portion.

7.2 A head density of between 20 and 35% offers an optimum compromise between ease and security of engagement. Less than 20% and engagement is precarious, more than 35% and engagement is difficult requiring precise alignment and "superman thumb" levels of pressure.

A bulk locking ratio of at least 10% ensures that there is a sufficient number of heads trapped in the pockets to resist lateral movement.

7.3 Thus, a combination of the features of the characterising portion of claim 1 solves the problem of providing a fastener which can be easily pressed together yet resist lateral movement.

- 7.4 The board agrees with the appellant that the minimum value of the head density in the above arrangement must be well over 0% for there to be any chance of engagement and that the maximum value cannot be more than 50%, otherwise engagement becomes impossible. The effects of varying head density are well understood, too higher values leading to impractical levels of pressure being required to ensure engagement. Therefore, head densities of between 20 and 35% are values that the skilled person would arrive at by routine testing, when faced with the above problem.
- 7.5 However, there is nothing in E3 which would prompt the skilled person to combine this range of head densities with an arrangement in which the heads are trapped in pockets defined between four adjacent stems.
- 7.6 Faced with this problem, it would also not be obvious for the skilled person to seek to combine the teachings of E1 and E3 since E1 is not directed to self-engagement of a single pattern as in E3 and the patent, but rather to the engagement of one pattern with a different pattern, namely engagement of the pattern shown in figures 1 to 3 with the pattern shown in figure 4. Consequently, they present entirely different solutions to a common problem. Even if the skilled person were to consult E1 when searching for improvements to E3, the results obtained would not lead to the subject-matter of claim 1.
- 7.7 Thus, the subject-matter of claim 1 meets the requirements of Article 56 EPC since it involves an inventive step. Since there were no more objections based on further documents, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairwoman:



C. Spira

M.-B. Tardo-Dino

Decision electronically authenticated