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D E C I S I O N
of 28 April 1994

Case Number: T 0896/92 - 3.2.1

Application Number: 88300667.8

Publication Number: 0277759

IPC: F16B 19/10

Language of the proceedings: EN

Title of invention:
Break-stem blind rivet

Patentee:
Avdel Systems Limited

Opponent:
Alfred Honsel Nieten- und Metallwarenfabrik GmbH & Co.

Headword:
-

Relevant legal norms:
EPC Art. 54, 56, 104

Keyword:
"Novelty (yes)"
"Inventive step (no)"
"Costs-apportionment (no)"

Decisions cited:
-

Headnote/Catchword:



Case Number: T 0896/92 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 28 April 1994

Appellant:
(Opponent)

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(Proprietor of the patent)

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Decision under appeal:

Decision of the Opposition Division of the
European Patent Office of 25 June 1992, with
written reasons posted on 20 July 1992, rejecting
the opposition filed against European patent
No. 0 277 759 pursuant to Article 102(2) EPC.

Composition of the Board:

Chairman: F.A. Gumbel
Members: P. Alting van Geusau
J.C.M. de Preter

Summary of Facts and Submissions

- I. European patent No. 0 277 759 was granted with effect from 16 August 1990 on the basis of European patent application No. 88 300 667.8 filed on 27 January 1988.

The single independent Claim 1 of the patent reads as follows:

"A blind break-stem rivet comprising a deformable tubular shell having a bore inside it and a stem extending along the bore and having a head adjacent one end of the shell; the shell being formed with a plurality of circumferential zones of modified strength spaced apart along the shell; characterised in that the spacing between each zone (27, 28, 29) and the next progressively decreases as the distance along the shell (11) from the said one end (15) thereof increases".

- II. Notice of Opposition was filed on 14 May 1991 on the grounds that the subject matter of the patent lacked novelty and an inventive step having regard in particular to the prior art disclosed in:

D1: DE-U-84 30 648.3 and

D2: EP-A-0 168 355.

- III. By a decision which was given at the end of oral proceedings held on 25 June 1992 and issued in writing on 20 July 1992 the Opposition Division rejected the opposition.

The Opposition Division was of the opinion that the subject-matter of the patent was novel and that the claimed spacing provided a technical effect not suggested in the cited prior art. Therefore, as the

teachings of the cited documents did not lead to the subject-matter claimed it also involved an inventive step.

- IV. Notice of Appeal against this decision was filed on 25 September 1992, with payment of the appeal fee the same day.

In the Statement of Grounds of Appeal filed on 27 November 1992 the Appellant again challenged the novelty of the subject matter of Claim 1 of the patent in suit and in this respect referred to the decision T 169/83 (OJ EPO 1985, 193) to support his opinion that features derivable from drawings form part of the disclosure of a prior art patent specification. He submitted that the subject-matter of Claim 1 also lacked an inventive step in view of the teachings of D1.

Results of comparative tests were submitted to prove that no improvement of the riveting results was achieved.

- V. With the Respondent's reply, dated 30 July 1993, test results were submitted in an attempt to proof a better footprint achieved by the rivet claimed together with a statement by Mr Laurence Anthony Browne, the person in charge of the tests.

- VI. In preparation for oral proceedings auxiliarily requested by the Appellant the Board expressed in its communication dated 21 September 1993 the provisional opinion that the decision T 169/83 cited by the Appellant required additional conditions to be fulfilled, which conditions did not appear to be met in the present case and that therefore the arguments intended to prove lack of novelty of the subject-matter

of the patent in respect of D1, were not considered convincing.

As regards inventive step of the subject-matter of Claim 1 the Board raised the question whether indeed technical effects different from what was known from D1 were achieved by the subject-matter of Claim 1 and further expressed its doubt whether the comparative test results provided by both parties could prove the points raised in this respect.

VII. With letter of letter 6 April 1994 the Respondent informed the Board that he no longer intended to attend the oral proceedings and requested to let the appeal be decided on the basis of the written documents on file. Oral proceedings took place on 28 April 1994.

VIII. In support of his request for revocation of the patent the Appellant relied essentially on the following submissions put forward in writing and orally at the oral proceedings:

In addition to the precharacterising features of Claim 1 of the patent in suit the blind break-stem rivet disclosed in Figure 1 of D1 also shows, as can immediately be seen and verified by measuring, that the spacing between the zones of modified strength decreases in the direction away from the stem head. The subject-matter of Claim 1 is thus disclosed in its entirety in D1 and is therefore not patentable for lack of novelty. The conclusions arrived at in the decision T 169/83 according to which the disclosures of drawings are equivalent to disclosures in the description, apply in the present case.

At least the subject-matter of Claim 1 is not patentable for lack of inventive step.

D1 already concerns the provision of a blind rivet which exhibits a wide grip-range and good clamp-up in order to reduce the stock of rivets with different lengths. In order to achieve this object, the deformable tubular shell has a plurality of circumferential grooves spaced apart along the shell to add in the formation of the rivet closing head. Two specific examples are given in Claims 5 and 6 of D1 according to which the spacing between the grooves is either equal along the shell or is different with the smallest spacing being away from the rivet shell head.

Having regard to the embodiments claimed in Claims 5 and 6 of D1 the decrease of the spacing in the direction of the shell head is in fact the only possible alternative left. However, such an alternative is obvious to the skilled person in view of the general teaching of D1 that the spacings between the grooves can be different.

The test results provided by the Respondent did not give proof of any unexpected advantage over the known rivet disclosed in D1 and therefore it must be concluded that the rivet claimed in the patent is nothing more than an obvious alternative to the rivet known from D1.

IX. The Respondent requested that the appeal be dismissed, "and for their costs". In support of his requests the Respondent argued essentially as follows:

The drawings disclosed in D1 are plainly diagrammatic and must be interpreted in accordance with the written text. The Appellant's reliance on the decision T 169/83 is misplaced. For the present case the decision T 204/83 (OJ EPO 1985, 310) is more relevant since it deals with the permissibility of deductions drawn from a

diagrammatic drawing which, in accordance with this decision, may not be relied on as a teaching of the dimensions of the products illustrated.

Contrary to the Appellant's opinion that there is no technical advantage with the claimed arrangement of the grooves the test results provided by the Respondent clearly show that the claimed arrangement of grooves gives superior results when compared to the results achieved with the blind fastener based upon the concept outlined in D1. In particular the Respondent's tests covered a wide grip range, namely one sheet of one millimetre thickness up to five sheets of the same thickness and the results reported show that in 80% of the tests made the results were superior to what was achieved by the blind rivet known from D1.

Reasons for the decision

1. The appeal complies with the requirements of Articles 106 to 108 and Rules 1(1) and 64 EPC. It is admissible.
2. *Novelty*
 - 2.1 None of the cited documents expressly describes a rivet of the kind defined in the precharacterising part of Claim 1 with a spacing between the zones of modified strength that progressively decreases in the direction of the shell head.
 - 2.2 The Appellant contested the novelty of the subject-matter of Claim 1 and in particular submitted that the blind rivet disclosed in Figure 1 of D1 showed all the features of Claim 1 of the patent in suit, referring to

the decision T 169/83 (OJ EPO 1985, 193) to support his argument that features derivable from drawings form part of the disclosure of a patent specification.

Although indeed, when measuring the spacing between the zones in Figure 1 of D1, the spacing in question decreases as the distance along the shell from its tail end increases, the differences in size of the respective shell sections are so small that, in the Board's opinion, this feature is not immediately apparent to the skilled person.

Furthermore, according to the description of D1 the distance between the grooves may be either equal (see also Claim 5) or increasing along the shell in the direction of its head (see Claim 6 and the embodiment of Figure 2) so that the skilled person did not have any reason to suppose that the distances in Figure 1, which apparently relate to the embodiment of Claim 5, were not intended to be equal and thus in no way was led to interpret the disclosure of D1 in the manner as suggested by the Appellant.

As regards the decision T 169/83 referred to by the Appellant, the Board draws attention to the fact that in accordance with this decision (see point 3.5) further conditions are required as to the disclosure of the feature shown solely in a drawing. In this respect not only should the structure of the feature be shown sufficiently clearly in the drawing but also the technical function achieved should be derivable.

As follows from the above analysis of the disclosure of D1, the characterising feature of Claim 1 of the patent in suit is neither **clearly** shown in Figure 1 of D1 nor can the skilled person attribute any specific technical

function to the allegedly disclosed different spacing and therefore the Appellant's arguments based on this decision are not considered convincing.

The decision T 204/83 (OJ EPO 1985, 310), cited by the Respondent, again emphasises that a feature shown solely in a prior art drawing may be considered as a disclosure of this feature only when a technical teaching can be attributed to it and thus the conclusions arrived at above are fully in line with this decision.

Therefore the subject-matter of Claim 1 is novel within the meaning of Article 54 EPC.

3. *Inventive step*

- 3.1 A feature of break-stem blind rivets that is important to the user is that a stock of identical rivets can be used to secure together different combinations of workpieces having a total thickness which can vary over as wide a range as possible.

The technical problem underlying the patent in suit relates to the provision of such a break-stem blind rivet which exhibits a wide grip-range with good clamp-up (see column 1, lines 19 to 28 and lines 37 to 40 of the patent).

- 3.2 The solution to this problem as contained in Claim 1 of the patent essentially consists in the provision of the rivet shell with a plurality of circumferential zones of modified strength spaced apart along the shell such that the spacing between each zone and the next progressively decreases as the distance along the shell from the tail end thereof increases.

Such a configuration of the shell allows, during setting of the rivet by means of the suitable rivet-placing tool, the formation of a blind head which engages the blind face of the workpiece by outward buckling of the shell starting at the next groove outside the blind face of the workpiece and, with continued pulling on the break-stem, providing buckling of shell parts between the stem head and the blind side of the workpiece and also pulling the workpiece sheets together into tight contact (see also column 4, lines 7 to 9 and lines 14 to 17 of the patent).

In this manner both a wide grip-range and good clamp-up can be achieved.

- 3.3 A blind break-stem rivet of similar configuration is known from D1. This rivet is also intended to secure together different combinations of workpieces having a total thickness which can vary over as wide a range as possible (see page 3, last paragraph of D1).

The shell of this known blind break-stem rivet has a number of circumferential grooves which form circumferential zones of modified strength. In accordance with preferred embodiments the grooves may either be distributed at equal distances along the shell (see Claim 5 of D1) or at unequal distances such that the distances **increases** in the direction of the shell head (see Claim 6 of D1).

The rivet defined in Claim 1 of the patent differs from this known rivet in that the spacing between the zones of modified strength progressively **decrease** in the direction of the shell head.

3.4 Considering the teachings of this closest prior art, it can be concluded that the underlying problem of the patent is already solved by the rivet disclosed in D1. Furthermore, this document already contains all the essential general information in regard of the use of zones of modified strength in order to provide a blind break-stem rivet which exhibits a wide grip-range and good clamp-up and describes two examples of possible sequences of the spacings between the zones of modified strength of the shell. This information is considered sufficient for the skilled person to consider other, alternative, sequences without any inventive activity being necessary. Moreover, considering further that the embodiments shown in D1 have only two spacings between the three zones of modified strength, which is also true for the embodiment shown in the patent in suit, in fact the single remaining alternative sequence is the one defined in the characterising part of Claim 1 of the patent. Therefore, in the Board's opinion, the subject-matter claimed in the patent in suit cannot be considered to involve an inventive step.

3.5 The Appellant submitted comparative test results in an attempt to show an unexpected superiority of the claimed rivet when compared to the rivet known from D1.

However, considering that the difference between the known rivet and the rivet in accordance with Claim 1 of the patent in suit is an inversion of the sequence of the different zones between the grooves, an essential factor when comparing these different rivets with each other is the relative position of the intermediate groove and the adjacent surface of the workpiece sheets to be rivetted, which for a given size of rivet and sheet thickness is different for the rivets in accordance with the patent and those of the inverted

arrangement of D1. Because of the resulting different deformation of the rivet shell a difference in footprint after deformation is evidently obtained.

The selection of the plate thickness with respect to the total length of the rivet thus obviously has a significant effect on the results obtained, to the extent that for some combinations the rivet disclosed in D1 and for other combinations the rivet in accordance with the patent in suit would give better results.

Since the test carried out by the Respondent did not take account of this significant fact the test results cannot be considered as evidence of an advantageous effect.

Anyhow, a 2.6% better footprint as concluded from these tests is considered to be marginal and lies, in the Board's opinion, well within the margin of error and tolerances and also for this reason the test results cannot be considered as proof of any significant difference between rivets having the above indicated different spacing sequences of the rivet shell.

4. The Respondent requested "for their costs". It is not clear to the Board whether this is intended to be a formal request for an apportionment of costs. In any case, since the Respondent failed to give any argument why the general principle stipulated in Article 104(1) EPC, i.e. that each party to the proceedings shall meet the costs he incurred, should not apply in the present case and in the absence of such argument or apparent reason for a different apportionment of costs the Board would have to reject this request.

Order

For these reasons, it is decided that:

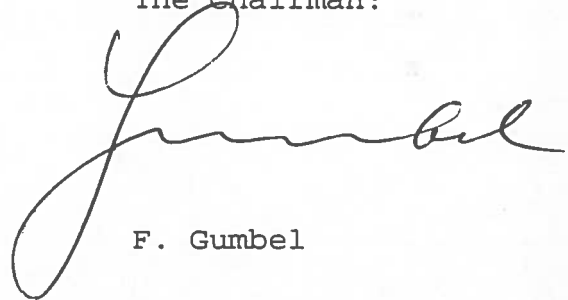
1. The impugned decision is set aside.
2. The patent is revoked.

The Registrar:



S. Fabiani

The Chairman:



F. Gumbel



