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File No.: T 0092/92 - 3.2.1
Application No.: 87 850 111.3
Publication No.: 0 242 345
Classification: F16C 13/02
Title of invention: Glide-shoe arrangement for a variable-crown roll

D E C I S I O N
of 21 September 1993

Patentee: VALMET PAPER MACHINERY INC.

Opponent: Kleinewefers GmbH

Headword:

EPC: Article 100(b), 56, 114

Keyword: "Sufficiency of disclosure (yes)" - "Inventive step (yes)" -
"Late submitted material - argument admitted (yes)".

Headnote
Catchwords

1. *The fact that the underlying problem of the patent has already been solved by the prior art does not necessarily require re-definition of the problem for the assessment of inventive step, if the subject-matter of the patent represents an alternative solution to this problem (point 4.5 of the reasons).*
2. *Article 114(2) EPC does not provide a legal basis for disregarding late filed arguments (point 2 of the reasons).*



Case Number: T 0092/92 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3-2-1
of 21 September 1993

Appellant:
(Opponent)

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Representative:

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Respondent:
(Proprietor of the patent)

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Representative:

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Decision under appeal:

Decision of the Opposition Division of the
European Patent Office of 8 November 1991, with
written grounds posted on 17 December 1991
rejecting the opposition, filed against European
patent No. 0 242 345 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: F.A. Gumbel
Members: P. Alting van Geusau
B.J. Schachenmann

Summary of Facts and Submissions

I. European patent No.0 242 345 was granted with effect from 31 January 1990 on the basis of European patent application No. 87 850 111.3 filed on 7 April 1987.

Claim 1 of the patent reads as follows:

"Glide shoe arrangement for a variable-crown roll (10), comprising a non-revolving massive central axle, on which a cylindrical roll mantle (11) is revolvingly journalled (13a, 13b), between which said axle (12) and the inside face (11") of said roll mantle (11) piston-glide-shoe combinations (20₁...20_N) loaded by means of hydraulic pressure fluid are fitted, whose glide shoes (22) can be loaded by the intermediary of pistons (15) by means of the pressures of the hydraulic fluid against the inside face (11") of the roll mantle (11) for the purpose of controlling the distribution of the nip pressure in a nip (N) placed facing said loading shoes (22), said piston-glide-shoe combinations (20₁...20_N) including cylindrical or equivalent bores (16) formed in said axle (12), in which bores (16) cylindrical or equivalent pistons (15) are fitted, and between which loading pistons (15) and their glide shoes (22) bearings (31, 32) are fitted which are provided with spherical bearing faces (33), the centre of rotation (0) of said bearings (31, 32) being arranged at the glide shoe side of the piston-glide-shoe combinations (22), characterised in that a pin-shaped projection part (25) is fitted in said loading pistons (15), which projection part (25) extends through said bearing (31,32, 33), and which pin-shaped projection part (25) is mainly a cylindrical body whose centre axis substantially coincides with the centre axis (K-K) of the cylindrical bores (16) for the pistons (15); that between said pin-

shaped projection part (25) and the glide shoe (22) or a projection part (36) attached to the glide shoe (22), there is a sealed articulation arrangement (30) which is placed substantially in the same plane in which the centre of rotation (0) of said bearing (31, 32) that has spherical bearing faces is placed; and that the pressure fluid can be passed from a loading space (16p) of the pistons (15) through said pin-shaped projection part (25) into hydrostatic spaces (23a, 23b) on the glide shoes".

- II. With notice of opposition filed on 27 October 1990 the Appellant (Opponent) requested revocation of the patent in its entirety for grounds in accordance with Article 100 (a) and (b) EPC.

In respect of an alleged lack of inventive step (Article 100 (a) EPC) regarding the subject-matter of Claims 1 to 3 the opposition was supported by

D1: DE-B-2 245 597
D2: DE-C-3 042 616
D3: US-A-3 782 793

- III. By decision given at oral proceedings held on 8 November 1991, with written grounds posted on 17 December 1991, the Opposition Division rejected the opposition.

The Opposition Division was of the opinion that the disclosures of D1 to D3, either considered in themselves or in combination, did not prejudice maintenance of the patent in the granted form and that thus the opposition should be rejected.

VI. An appeal was lodged against this decision on 29 January 1992, with payment of the appeal fee on the same day. The Appellant requested that the decision under appeal be set aside and that the patent be revoked. The Statement of Grounds of Appeal was filed on 18 April 1992 in which the Appellant maintained the view that the grounds of opposition pursuant to Article 100 (a) and (b) EPC applied to the subject-matter of the patent. The Appellant further challenged the Opposition Division's decision for procedural reasons.

The Appellant's representative complained about not having been given sufficient opportunity at the oral proceedings before the Opposition Division, to develop a new line of argumentation which was based on documents already referred to in the opposition as originally filed and which differed from the previous argumentation in that it started from D3 - instead of D1 - as the closest prior art. He disputed that the Opposition Division was correct to disregard - based on Article 114(2) EPC - this new line of argumentation on the grounds that it was presented at the oral proceedings for the first time. The Opposition Division had, therefore, violated the Appellant's right to be heard.

V. In a communication issued together with the summons for oral proceedings, to be held in accordance with the auxiliary requests of both parties, the Board expressed the provisional opinion that the Appellant's arguments with respect to Article 100 (b) EPC were not convincing and that, since novelty of the subject matter of the patent had not been contested, mainly the question whether inventive activity was necessary to arrive at the subject-matter of Claim 1 would have to be discussed at the oral proceedings.

As regards the Opposition Division's refusal to take full account of the Appellant's new line of argumentation based on D3 as the closest prior art, the Board considered that indeed there was no legal basis for such a refusal. However, as followed from the decision, and although the contrary was stated, the Opposition Division actually had taken account of the Appellant's arguments. Therefore no substantial procedural violation in accordance with Rule 67 EPC appeared to have occurred.

VI. At the oral proceedings the Appellant withdrew his initially filed request for reimbursement of the appeal fee but asked the Board to make it clear in its decision that new arguments - even if submitted in a late stage of the proceedings - should always be taken into account by the deciding body.

As regards, in the Appellant's opinion, an obvious combination of the teachings of D1 and D3 a sketch of such resulting construction was submitted.

In support of his request for revocation of the patent the Appellant relied essentially on the following submissions:

Article 100 (b) EPC objection.

The subject-matter defined in the patent cannot be carried out by the skilled person because there is no information derivable from the patent as to how the "radial movements of the pistons" (see column 2, line 11 to 14) may be realised. Even in case radial movement is interpreted as radial movement with respect to the crown roll it is still not clear how the glide shoes can be made "to be positioned freely in all directions" - thus

also in the radial direction - "in relation to the pistons" as is stated in column 2, lines 23 to 27.

Article 100 (a) EPC objection

Document D1 represents the closest prior art, the glide shoe arrangement in accordance with Claim 1 of the patent in suit differing therefrom only in that

- (a) the projection part is a pin-shaped part fitted in the loading pistons
- (b) the pin-shaped projection part extends through the bearing having spherical bearing faces
- (c) the sealed articulation arrangement is provided between the pin-shaped projection part and the glide shoe (or a projection part attached to the glide shoe)
- d) the pressure fluid is passed through the pin shaped projection part into the hydrostatic spaces on the glide shoes.

Considering these differences, which all are related to the fluid pressure supply, the problem to be solved by the present patent can only be defined as being the provision of a different, simpler path for the pressure fluid supply because all the other objects stated in the patent have already been solved by D1. However, in this respect the skilled person is led by D1 to envisage a different fluid path because it follows from the embodiment of Figure 2 in D1 that the bore 9 for fluid supply to the bearing shoe may be partially closed by the shoe in one of its swivelled positions.

When looking for a solution to this problem the person skilled in the art would consider D3 which refers to a glide-shoe arrangement and which, in addition to a number of the other features of Claim 1, also discloses the above features (a) to (d) with respect to the pressure fluid supply. Since D3 belongs to the same narrow technical field, which can be derived from the fact that this document bears the same technical classification as the patent in suit, it would be obvious to the skilled person to combine the teachings of D1 and D3 to arrive at the subject matter of the patent in suit. An obvious combination of Figure 5 of D1 with the teachings of D3 would lead to a construction as shown in the sketch presented at the oral proceedings. Although, admittedly, the sealed articulation arrangement in the sketch is not in the same plane as the centre of rotation of the bearing this additional feature can be derived from D1 also and thus is an obvious further development for the skilled person.

VII The Respondent contested the Appellant's views and submitted the following arguments in support of his request for rejection of the appeal:

Article 100 (b) EPC objection

The skilled person would immediately appreciate that the term "radial" in the patent concerns the radial direction of the roll 10.

Thanks to the bearings 31, 32 and the sealed articulation arrangement 30, it is also immediately clear that the glide-shoe is capable of being positioned freely in all directions, despite the fact that the piston 15 is only movable in its own longitudinal direction.

Article 100 (a) EPC objection

The Respondent agrees with the Appellant's analysis of the disclosures of D1 in so far as the subject-matter of Claim 1 differs by the features a) to d) from the subject matter disclosed in D1. However, D1 does not disclose a pin shaped projection in accordance with the definition of Claim 1. It can also not be accepted that the problem to be solved relates merely to the simplification of the fluid pressure supply because the fluid path shown in D1 is so simple that there is no reason to make it simpler. Moreover D1 teaches against the solution of the patent in suit since it requires that the pressure chamber 7 is included in the pressure fluid path from the chamber 3 to the lubrication space 10, which cannot be achieved with the solution claimed in the patent.

The prior art disclosed in D3 is fully different in that it concerns the support of a horizontal ring with hardly any swivelling of the glide shoe. The skilled person did not have any reason to consider this document when looking for a solution to the underlying problem of the invention.

Furthermore, in contrast with what is suggested by the Appellant, D3 does not disclose the combination of features a) to d). The ring 51 referred to by the Appellant as a sealing ring is in fact a means used to press the parts 30 and 40 together, which can be derived from the text in column 5, lines 7 to 13 and the fact that channels 32 are present to connect the spaces 33 and 41 which are on different sides of the ring 51.

The Appellant's construction in accordance with the sketch filed in the oral proceedings does also not show the subject-matter of Claim 1, in particular because the sealing ring on the projection is not in the plane of the centre of rotation of the bearing. In addition, no credible reason was submitted by the Appellant why the skilled person would be induced to combine the teaching of D1 and D3 in the proposed manner.

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. *Procedural matters*

In the present case the Appellant challenged the Opposition Division's attitude, at the oral proceedings, towards a new line of argumentation based on the documents D3 and D1 which had been cited in time. In its decision, the Opposition Division disregarded the new argumentation in accordance with Article 114 (2) EPC on the grounds that it was not submitted in due time. Although the Appellant did not maintain a request for reimbursement of the appeal fee for reasons of a substantial procedural violation he requested clarification of this matter in the decision.

One of the principles of procedural law generally recognised in the Contracting States is the parties' right to a fair hearing. It includes the right of each party to present the facts, evidence and arguments it thinks relevant to the decision to be made and the duty of the deciding instance to duly consider what is put

forward by each party. However, this procedural right is not without limits.

Article 114(2) EPC provides for such a limit with regard to facts or evidence which are not submitted in due time by the parties concerned and, therefore, may be disregarded by the deciding instance. However, it should be noted, that the EPC makes a clear distinction between "facts or evidence" on the one hand and "arguments" on the other hand (cf. English version of Article 114(1) EPC) and that Article 114(2) EPC does not refer to arguments. Arguments, in this context, may be understood to include the parties' submissions as to the consequences that result from applying the law to the facts and evidence submitted in due time.

In the light of the general principle of procedural law referred to above, Article 114(2) EPC is to be interpreted so as to not unduly restrict the parties' right to argue their case. Article 114(2) EPC thus does not provide a legal basis for disregarding arguments on the grounds that they were presented for the first time in oral proceedings (cf. decision T 186/83 of the Technical Board of Appeal 3.3.1, point 5.2.4 published in EPOR 1986, page 11).

For this reason, the Opposition Division was wrong in stating that the new line of argumentation, presented by the Appellant in the oral proceedings, was not submitted in due time and was therefore to be disregarded.

However, in points 10 and 12 of their decision the Opposition Division indeed took account of the additional line of argumentation put forward by the Appellant, as regards the basic idea concerning the combination of the teachings of the documents (D3) and (D1), when starting from the device of D3 instead of the

initial line of argumentation based on the combination of D1 and D3 when starting from D1, and came to the conclusion that this new line of argumentation was not relevant for the decision because these two documents showed two completely different types of glide shoe devices.

Therefore, the Board is satisfied that in the circumstances of the present case the Appellant's right to be heard was in fact not unduly restricted by the Opposition Division and in conclusion, the misinterpretation of Article 114 (2) did not lead to a procedural disadvantage for the Appellant which would otherwise have made it necessary to consider remittal of the case to the first instance and reimbursement of the appeal fee.

3. *Novelty*

Novelty of the subject-matter of Claim 1 of the patent in suit can be concluded because none of the cited documents discloses a glide shoe arrangement with pressure fluid supply through a pin-shaped projection part which is in line with the loading pistons and comprises a sealed articulation arrangement which is placed substantially in the same plane in which the centre of rotation of the bearing lies.

Since novelty of the subject-matter of Claim 1 of the patent in suit was not contested further comments are considered unnecessary in this respect.

4. *Inventive step*

4.1 There is agreement between the parties and the Board that D1 discloses the closest prior art.

In addition to the precharacterising features of Claim 1, D1 also discloses a projection part on the loading piston, which is, however, mainly a cylindrical body whose centre axis substantially coincides with the centre axis of the cylindrical bores for the pistons and a sealed articulation arrangement between the piston and the glide shoe which is placed substantially in the same plane in which the centre of rotation of the bearing that has the spherical bearing faces is placed.

It is observed that the corresponding patent specification of D1 is the SF-A-56 252 patent referred to in the description of the patent. Hence, it could be questioned whether Claim 1 of the patent is satisfactorily related to the closest prior art mentioned in the patent (Rule 29 (1) EPC). However, since this requirement is not a ground for opposition a deficiency in this respect would not affect the validity of the patent.

4.3 When compared to the known construction disclosed in D1 the glide shoe arrangement in accordance with Claim 1 of the patent in suit differs in that it further includes the features that

- a) the projection part is a pin-shaped part fitted in the loading piston
- b) the pin-shaped projection part extends through the bearing that has the spherical bearing surfaces
- c) the sealed articulation arrangement is between the pin-shaped projection part and the glide shoe (or a projection part attached to the glide shoe)

d) the pressure fluid is passed through the pin shaped projection part into the hydrostatic spaces on the glide shoes.

These features lead to a sealed articulation arrangement for a glide shoe which allows the glide shoe to be positioned freely in all directions in relation to the piston that loads it while at the same time allowing a simple and tight support joint construction for the supply of pressurised fluid to the glide shoe (see column 2, lines 23 to 27 and lines 37 to 43 of the patent).

4.4 The objective problem to be solved by the features of Claim 1 can therefore be seen in the provision of a glide shoe arrangement achieving these effects of free movability and simple and tight pressure fluid supply.

4.5 As regards the problem to be solved the Appellant was of the opinion that since the above stated problem was already solved by the prior art disclosed in D1 only a different problem, in particular the provision of an even more simplified pressure fluid supply to the glide shoe, could form the basis for further considerations as to the assessment of inventive step.

Considering this argument, Board notes that Article 56 EPC does not require that the problem to be solved should be novel in itself and no ground can be seen why a novel, alternative solution to a known problem should be excluded from patentability for lack of inventive step for the reason that the problem has already been solved in a different manner (see in this respect the decision T 495/91 of 20 July 1993, reasons point 4.5).

Although perhaps the solution proposed in the patent, when compared to the solution proposed in D1, may give other or additional technical effects - in this respect the Respondent referred to a longer life of the sealing ring - which are normally taken into account when defining the underlying problem of the invention, in the Board's opinion, no necessity arises in the present case for a redefinition of the general objects of the invention solely for the reason that these objects are known in themselves and are solved by the arrangement of D1.

4.6 D3 discloses a glide shoe arrangement with a central oil passage for oil supply to a glide shoe element 30 through a threaded connection piece 50, a bore through the piston 60 and an intermediate element 40. An elastically yieldable annulus 51 is interposed and compressed between the head of the threaded connection piece 50 and the associated wall portion of the glide shoe element 30.

Considering this arrangement of pressure fluid supply, in the Board's opinion, obviously a sealed articulation arrangement in accordance with feature c), referred to above, is lacking. Clearly the annulus 51 has only the function to maintain the parts 30 and 40 together while allowing some swivelling movement of these parts. There is no reason to suppose that a sealing function is necessary because the pressure fluid can freely flow to both sides of the annulus 51 through the passages 32.

Pressure differences caused by flow effects, as was suggested by the Appellant at the oral proceedings, are not considered to occur because the fluid flow in a hydrostatic bearing, which in D3 results from the leaking of fluid through the gap 130, is kept small and

thus no appreciable pressure differences can occur across the annulus 51.

- 4.7 It is true that in D3 the pressure fluid supply is through a centrally positioned projection part, however, the skilled person did not have any reason to modify the known glide shoe arrangement of D1 by applying features of D3 and even if he would have done this in accordance with the construction shown in the sketch the Appellant submitted in the oral proceedings he still would not have arrived at the subject-matter of Claim 1 but rather at a construction having two sealing rings.

Moreover, D3 concerns a bearing for supporting a horizontal bearing ring for loads of 50 to 100 tons of weight with rather restricted swivelling movement of the glide shoes when compared to the support of a roll mantle in a variable-crown roll arrangement. Also for this reason, the skilled person could not expect or find a suggestion in D3 how to modify the arrangement of D1 in order to achieve the claimed solution to the problem of free movability of the glide shoe arrangement.

- 4.8 In the appeal proceedings the Appellant did not further rely on the combination of D3 and D1 when starting from D3 as the closest prior art. Since, as shown above, the teachings of these documents are incompatible and even when combined would require further modifications, which are not suggested in these documents, in order to arrive at the subject matter of Claim 1, this line of argumentation would not lead to a different conclusion as to the question of obviousness.

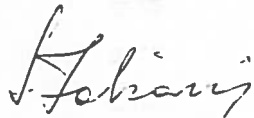
4.9 Summarising, in the Board's judgment, the proposed solution to the technical problem underlying the patent in suit defined in the independent Claim 1 is inventive and therefore this claim as well as its dependent Claims 2 to 6, relating to particular embodiments of the invention in accordance with Rule 29(3) EPC, are acceptable.

Order

For these reasons, it is decided that:

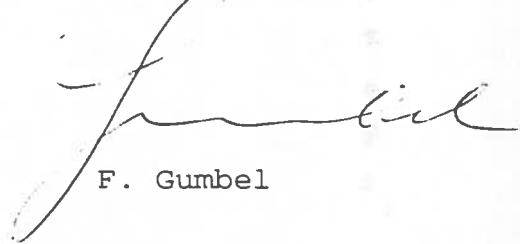
1. The appeal is dismissed.

The Registrar:



S. Fabiani

The Chairman:



F. Gumbel