

Internal distribution code:

- (A) [] Publication in OJ
(B) [] To Chairmen and Members
(C) [] To Chairmen
(D) [X] No distribution

**Datasheet for the decision
of 2 March 2010**

Case Number: T 0560/08 - 3.2.05

Application Number: 00983448.2

Publication Number: 1238148

IPC: D21F 3/02

Language of the proceedings: EN

Title of invention:

Press device having an extended press nip for pressing a traveling paper or board web

Patentee:

Metso Paper, Inc.

Opponent:

Andritz Küsters GmbH

Headword:

-

Relevant legal provisions:

EPC Art. 56

Relevant legal provisions (EPC 1973):

-

Keyword:

"Inventive step - yes (main request)"

Decisions cited:

T 1183/06

Catchword:

-



Case Number: T 0560/08 - 3.2.05

D E C I S I O N
of the Technical Board of Appeal 3.2.05
of 2 March 2010

Appellant: Andritz Küsters GmbH
(Opponent) Eduard-Küsters-Strasse 1
D-47805 Krefeld (DE)

Representative: Henseler, Daniela
Rethelstrasse 123
D-40237 Düsseldorf (DE)

Respondent: Metso Paper, Inc.
(Patent Proprietor) Fabianinkatu 9 A
FI-00130 Helsinki (FI)

Representative: Andréasson, Ivar
Hynell Patenttjänst AB
Patron Carls väg 2
S-683 40 Hagfors/Uddeholm (SE)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 17 January 2008
rejecting the opposition filed against European
patent No. 1238148 pursuant to Article 102(2)
EPC 1973.

Composition of the Board:

Chairman: P. Michel
Members: S. Bridge
E. Lachacinski

Summary of Facts and Submissions

- I. The appellant (opponent) lodged an appeal against the decision of the Opposition Division rejecting the opposition filed against the European patent No. 1 238 148.
- II. An opposition was filed against the patent as a whole based on Article 100(a) EPC (lack of novelty, Article 54 EPC, and lack of inventive step, Article 56 EPC).
- III. Oral proceedings were held before the Board of Appeal on 2 March 2010.
- IV. The appellant requested that the decision under appeal be set aside and that the European patent No. 1 238 148 be revoked.
- V. The respondent (patent proprietor) requested that the appeal is dismissed, or, as an auxiliary measure, that the decision under appeal be set aside and that the patent in suit be maintained on the basis of first to fifth auxiliary requests filed on 14 November 2007, or sixth and seventh auxiliary requests filed on 2 February 2010. In addition, it is requested that the document D8 not be admitted into the proceedings.
- VI. Independent claims 1, 13 and 14 of the patent in suit as granted read as follows:

"1. A press device having an extended nip for pressing a running paper or paperboard web, comprising a press shoe (101) aligned across the machine direction (MD)

arranged for forming an extended nip (103) in cooperation with a backing member (102) for passage of said web (104) during the pressing, a support (105) which supports the press shoe in a movable way in a direction toward the backing member via a plurality of loading cylinders (106) spaced apart along the press shoe (101) for enabling application of pressure on the web during the pressing, wherein each of said loading cylinders (106) comprises a first cylinder member (107) having a first cylinder end (108) which is attached to or integrated in the press shoe (101), and a second cylinder member (109) having a second cylinder end (110) which is attached to or integrated in the support (105), which first and second cylinder members (107, 109) are slidably connected by a connecting member (111), wherein the connecting member (111) and the first cylinder member (107) are movable in relation to each other with a first length of stroke (L1), while the coupling member (111) and the second cylinder member (109) are movable in relation to each other with a second length of stroke (L2), and the connecting member has a third length (L3), **characterised in that** the first length of stroke (L1) is smaller than the second length of stroke (L2)."

"13. Use of a press device having an extended nip according to any one of claims 1 to 12 for wet-pressing of a paper or paperboard web."

"14. Use of a press device having an extended nip according to any one of claims 1 to 12 for calendering of a paper or paperboard web."

VII. The following documents are referred to in the present decision:

- D1 EP-A-0 933 471
- D3 EP-A-0 373 942
- D4 DE-A-33 17 974
- D5 DE-B-27 59 035
- D8 DE-A-40 40 392
- D10 W.Schuwerk, "Schuhpressen für grafische Papiere - Konzepte und erste Betriebserfahrungen", Das Papier Nr. 10A, 1995, pages V106 to V115

VIII. The arguments of the appellant concerning the main request in the written and oral proceedings can be summarised as follows:

Document D1 constitutes the closest prior art and corresponds to the preamble of claim 1 of the main request.

The patent in suit does not disclose any advantages associated with the characterising feature of claim 1 of the patent in suit (main request). Furthermore, the skilled person knows that hydraulic loading elements at the ends of the roller are subject to bending due to thermal elongation in the cross machine direction (e.g. document D1, paragraph [0004]). The skilled person would necessarily have to seek to improve the geometry of the hydraulic support in order to accommodate increased tilting caused by increasingly higher paper speeds causing additional thermal expansion of the press shoe in the cross machine direction.

The skilled person is inevitably lead towards providing the majority of the movement in the hydraulic loading element most remote from the press shoe because of such basic mechanical engineering considerations as the need to avoid applying high loads via cylinders which are not properly aligned, - such as the ones next to a tilted press shoe - because of the inevitable additional wear that any movement in such skewed cylinders would cause, i.e. the need for linear movement in a hydraulic piston when such high loads as are needed for a press shoe are to be applied (document D10, page V113, right hand column, end of second paragraph).

The subject-matter of claim 1 of the main request thus does not involve an inventive step.

As set out in decision T 1183/06, the problem of thermal elongation in the cross machine direction is the same for deflection compensated rollers and press shoe rollers. The skilled person will therefore also consider solutions provided for deflection compensated rollers as disclosed in documents D3, D4 and D5 (point 3 of decision T 1183/06), in particular as deflection compensated rollers have the same hydraulic supply as press shoe rollers (point 3 of decision T 1183/06; document D10, page V109, section "Abb. 11", figure 11).

Prior art solutions for coping with the thermal elongation problem involve providing the press or glide shoe with means of tilting with respect to the hydraulic loading piston (document D1, paragraph [0011]; document D3, column 4, line 6 to

column 5, line 1; document D4, figures 1 and 2; document D5, column 5, lines 34 to 44 and document D8, column 6, lines 46 to 52).

For the reason already set out above, the subject-matter of claim 1 of the main request does not involve an inventive step with respect to the combinations of documents D1 and any one of documents D3 to D5 which show that the majority of the loading stroke length is provided by the cylinder next to the support (document D3, figure 3; document D4, figures 1 and 2; document D8, figure 1; document D10, figures 2 and 8). In particular, as document D3 refers to figure 3 as a "more detailed illustration", the skilled person would thus clearly infer that the stroke length of the cylinder next to the support has to be greater than that of the cylinder next to the glide shoe. This is also considered to be the cheapest solution.

Document D8 was filed in response to the decision of the opposition division to show that the skilled person knows how to alter the nip pressure in a pressing device with a press shoe (column 6, lines 46 to 52). Document D8 should be admitted into the appeal proceedings. The definition of stroke provided in the patent in suit can be interpreted as encompassing pivoting only (column 5, lines 50 to 54) so that the subject-matter of claim 1 is not inventive with respect to the combination of documents D1 and D8 (figure 1).

IX. The arguments of the respondent concerning the main request in the written and oral proceedings can be summarised as follows:

The skilled person starting from document D1 would learn therein that the problem of forces arising in the machine direction are already solved by means of the tiltable coupling member introduced for dealing with the different problem of thermal elongation in the cross machine direction. Document D1 also does not mention the stroke lengths of the hydraulic loading cylinders.

Increasing the speed of the paper or paperboard web does not necessarily lead to further increases in temperature, because other parts of the pressing process are subject to additional temperature constraints arising from, for example, the materials of the supporting web, typically made from polyurethane.

The problem of press shoe tilting does not arise for deflection compensated rollers glide shoes so that the skilled person has no incentive to seek a solution there. Similarly, thermal elongation only causes problems in the cross machine direction because of the considerable width of the press devices, but on the scale of a press shoe in the machine direction, it is negligible.

None of the cited documents D3, D4, D5, D8 or D10 mention the problem of forces arising in the machine direction or contain any teaching concerning the stroke lengths of the hydraulic loading cylinders. In addition, as noted in the impugned decision, document D4 does not appear to be suitable for pressing a paper web because of probable contamination by leakage from the hydrostatic supports. In addition, the skilled person would not derive a teaching concerning

stroke lengths from purely schematic drawings in the absence of a corresponding indication in the description.

In consequence, the subject-matter of claim 1 of the patent in suit is not rendered obvious by the cited prior art and involves an inventive step.

Reasons for the Decision

1. The closest prior art is represented by document D1. This was not contested by the parties.
2. The subject-matter of claim 1 of the patent in suit (main request) is distinguished over the disclosure of document D1 by the features of the characterising portion of the claim.

The effect achieved is that tilting press shoe 101 brings the connecting member 111 and the second cylinder member 109 less out of alignment. This, in turn, reduces the forces on, and stresses in, the possible shoe support (paragraphs [0037], [0041] and [0044] and figures 1B, 2B and 4 of the patent in suit).

3. The object of the patent in suit is thus to permit the press shoe to be tilted/pivoted around an imaginary axis across the machine direction with minimum skewness between the parts included in the loading cylinders, and without generating any excessively large forces directed towards a possible shoe support (paragraph [0013] of the patent in suit).

4. Document D1 concerns a different problem of bending within the hydraulic loading cylinders caused by thermally induced cross-machine elongations (paragraphs [0004] to [0006]). This is solved by supporting the press shoe on a construction which permits free motion of the press shoe in the cross-machine direction, thereby avoiding wear, bending, or other undesirable consequences to the loading cylinders (paragraphs [0006], [0007] and [0011]).

Document D1 thus neither considers the problem of skewness between the parts of the loading cylinders when the press shoe is tilted/pivoted around an imaginary axis across the machine direction, nor the issue of excessively large forces directed towards a possible shoe support.

Even if the skilled person were motivated to seek a solution to this problem, document D1 teaches that when varying the nip pressure in the machine direction, the loading cylinders described in document D1 can already accommodate deformations or translations of the press shoe in the machine direction, as well as pivoting of the press shoe about an axis parallel to the cross-machine direction (paragraphs [0011], [0026] and [0035]).

As there is nothing in document D1 which would lead the skilled person to consider additional measures concerning the stroke lengths of the loading cylinders the subject-matter of claim 1 of the main request is not rendered obvious by the disclosure of document D1.

5. The argument suggested on behalf of the appellant that the skilled person would implicitly derive the problem addressed in the patent in suit from the prior art thermal elongation problem due to increasing temperatures cannot be followed. No evidence was supplied to the effect that higher paper speeds necessarily result in higher temperatures or that the bending of the press shoe in the cross machine direction has been aggravated by recent developments.

Even if this were the case, this problem already differs from the problem addressed in the patent in suit in terms of the direction in which bending occurs. In particular, there is not the same need for a glide shoe of a deflection compensated roller to permit tilting in the cross machine direction as in a press shoe whose displacement in the cross machine direction is deliberately used to influence the pressure distribution in the nip and thereby determine the quality of the resulting paper or paperboard (document D1, paragraph [0021], document D10, section 2.). This distinction is furthermore independent of whether deflection compensated rollers and press shoe rollers are fed from a common hydraulic supply.

The present situation thus differs from that underlying decision T 1183/06 where the problem of thermal elongation in the cross machine direction was the same for deflection compensated rollers and press shoe rollers. In consequence, the skilled person would not consider deflection compensated rollers when seeking a solution to the present problem.

6. Even if the skilled person were to consult any of documents D3, D4 or D5, he would not find any teaching concerning the relative stroke lengths of the hydraulic support cylinders.

7. It was also suggested on behalf of the appellant that basic mechanical engineering considerations would prompt the skilled person to provide most of the movement in the hydraulic element remote from the press shoe. No evidence was provided in support of this contention. The mere fact that some of the purely schematic drawings found in documents D3 (e.g. figure 3), D4 (e.g. figure 1) and D5 (e.g. figure 16) appear to show this to be the case, does not mean that the skilled person would derive such a teaching concerning relative stroke lengths from these drawings, particularly in view of the absence of any corresponding indications in the respective descriptions of these documents.

Similarly, when document D3 refers to figure 3 as a "more detailed illustration of the construction of one hydraulic loading member 20 [...] in accordance with the invention", this does not mean that the skilled person would or could interpret figure 3 as an engineering drawing from which dimensional relationships may be extracted. Again the skilled person has no reason to infer that any advantages may be achieved when the stroke length of the cylinder next to the support is greater than that of the cylinder next to the glide shoe.

In addition, in the absence of costs being discussed in any of the cited documents or in the patent in suit, it

is not clear why the skilled person would identify the solution disclosed in the patent in suit as being the least costly.

8. Document D8 was filed with the grounds of appeal in response to the decision of the opposition division to illustrate the knowledge of the skilled person in relation to press devices comprising a press shoe. The disclosure of document D8 is therefore prima facie relevant. During the course of the appeal proceedings, the respondent had ample time to consider this document. The Board accordingly considers it appropriate to exercise their discretion and admit document D8 into the present proceedings.

The definition of "length of stroke" as "the maximum length of a cylinder member available for sliding displacement of a second, cooperating member in relation to said cylinder member" necessarily implies that a second, cooperating member is "slidably connected" to said cylinder member (paragraph [0024] and claim 1 of the patent in suit). Therefore connections which only permit pivoting are excluded.

Figure 1 of document D8 shows the press shoe 2 being supported on the pistons 11 by the symbol used to denote rotational joints and the description of document D8 only refers to the structure of the press device as being generally known (column 4, lines 33 to 48, column 6, lines 46 to 52). With a rotational joint linking the press shoe to the pistons, there is no possibility of a sliding connection and therefore no "first stroke"; document D8 cannot lead the skilled

person towards the solution of claim 1 of the patent in suit.

9. In consequence, it is not obvious for the skilled person to arrive at a solution wherein the first length of stroke (L1) is smaller than the second length of stroke (L2).

The subject-matter of claim 1 of the patent in suit (main request) thus involves an inventive step within the meaning of Article 56 EPC.

The corresponding independent use claims 13 and 14 are carried by that inventive step.

Claims 2 to 12 are dependent claims of claim 1 so that these claims meet the requirement of Article 56 EPC.

In view of the fact that the main request of the respondent is allowable, it is not necessary to consider the auxiliary requests.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

D.Meyfarth

P. Michel