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**D E C I S I O N**  
**of 15 November 2001**

**Case Number:** T 1007/98 - 3.2.5

**Application Number:** 93250006.9

**Publication Number:** 0551166

**IPC:** B41F 27/12

**Language of the proceedings:** EN

**Title of invention:**

Plate exchange apparatus for printing press

**Patentee:**

Komori Corporation

**Opponents:**

01: Koenig & Bauer AG

02: Heidelberger Druckmaschinen AG

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 56

**Keyword:**

"Inventive step (no)"

**Decisions cited:**

-

**Catchword:**

-



Case Number: T 1007/98 - 3.2.5

**D E C I S I O N**  
**of the Technical Board of Appeal 3.2.5**  
**of 15 November 2001**

**Appellant:** Komori Corporation  
(Proprietor of the patent) 11-1, Azumabashi 3-chome  
Sumida-ku  
Tokyo (JP)

**Representative:** Patentanwälte Wenzel & Kalkoff  
Postfach 73 04 66  
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**Respondent I:** Koenig & Bauer AG  
(Opponent 01) Postfach 6060  
D-97010 Würzburg (DE)

**Representative:** -

**Respondent II:** Heidelberger Druckmaschinen AG  
(Opponent 02) Kurfürsten-Anlage 52-60  
D-69115 Heidelberg (DE)

**Representative:** -

**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted 14 July 1998  
revoking European patent No. 0 551 166 pursuant  
to Article 102(1) EPC.

**Composition of the Board:**

**Chairman:** W. Moser  
**Members:** A. Burkhart  
P. E. Michel

## Summary of Facts and Submissions

- I. The appellant (patent proprietor) lodged an appeal against the decision of the Opposition Division revoking the European patent No. 0 551 166.

Oppositions were filed against the patent as a whole and based on Article 100(a) EPC (lack of novelty and inventive step).

The Opposition Division held that the grounds for opposition according to Article 100(a) EPC prejudiced the maintenance of the patent, having regard to the following prior art documents:

D1: EP-A-0 431 575

D2: DE-C-3 940 796

D3: EP-A-0 433 798

D4: DE-A-2 804 970.

- II. Oral proceedings took place before the Board of Appeal on 15 November 2001.

(i) The appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the following documents submitted during oral proceedings:

(a) claims 1 to 3 as main request, or

(b) claims 1 and 2 as auxiliary request.

(ii) The respondents I and II (opponents 1 and 2) requested that the appeal be dismissed.

III. Claim 1 according to the main request reads as follows:

"1. A plate exchange apparatus for a printing press, comprising

a plate guide member which is a plate press roller (24) adapted to guide a leading end of a plate between plate gripper surfaces (5b, 6a) of a leading-side plate lockup device (4) when said leading end of said plate opposes said leading-side plate lockup device (4) during a gripping operation of said leading end of said plate in a first plate exchange position of a plate cylinder (1), and to urge a trailing end of said plate between plate gripper surfaces (12a, 13a) of a trailing-side plate lockup device (10) under pressure when said trailing end of said plate wound around said plate cylinder (1) opposes said trailing-side plate lockup device (10) during a gripping operation of said trailing end of said plate in a second plate exchange position of the plate cylinder (1), and to press said plate against said plate cylinder (1) during a period of rotation of the plate cylinder (1) from the first plate exchange position to the second plate exchange position, such that said plate is wound around a circumferential surface of said plate cylinder (1); and

operating members (29, 30) adapted to press said plate press roller (24) against said plate cylinder (1) during the first and second plate exchanging position and the period of rotation between the first and second plate exchange positions, respectively, of said plate cylinder (1), characterised by

regulating members (34, 35) for regulating movement of said plate press roller (24) in a radial direction of said plate cylinder (1) during plate gripping; and

said regulating members comprising a set of first elements (34) arranged on said plate press roller (24) and a set of second elements (35) arranged on said plate cylinder (1), said first elements (34) and said second elements (35) opposing each other in order to stop the movement of the plate press roller (24) in a radial direction of the plate cylinder (1) in the first plate exchange position in such a way that the circumferential surface of the plate press roller (24) is located on the same level as that of the plate gripper surfaces (5b, 6a)."

Claim 1 according to the auxiliary request reads as follows:

"1. A plate exchange apparatus for a printing press, comprising

a plate guide member which is a plate press roller (24) adapted to guide a leading end of a plate between plate gripper surfaces (5b, 6a) of a leading-side plate lockup device (4) when said leading end of said plate opposes said leading-side plate lockup device (4) during a gripping operation of said leading end of said plate in a first plate exchange position of a plate cylinder (1), and to urge a trailing end of said plate between plate gripper surfaces (12a, 13a) of a trailing-side plate lockup device (10) under pressure when said trailing end of said plate wound around said plate cylinder (1) opposes said

trailing-side plate lockup device (10) during a gripping operation of said trailing end of said plate in a second plate exchange position of the plate cylinder (1), and to press said plate against said plate cylinder (1) during a period of rotation of the plate cylinder (1) from the first plate exchange position to the second plate exchange position, such that said plate is wound around a circumferential surface of said plate cylinder (1); and

operating members (29, 30) adapted to press said plate press roller (24) along the direction of the plate cylinder (1) during the first and second plate exchanging position and the period of rotation between the first and second plate exchange positions, respectively, of said plate cylinder (1), characterised in that the apparatus further comprises

support members (23) for swingably supporting said plate press roller and wherein said plate press roller is reciprocated by said operating members in a radial direction of said plate cylinder so as to be pressed against said circumferential surface of said plate cylinder (1),

regulating members (34, 35) for regulating such movement of said plate press roller (24) in a substantially radial direction of said plate cylinder (1); and

said regulating members comprising a set of first elements (34) arranged on said plate press roller (24) and a set of second elements (35) arranged on

said plate cylinder (1), said first elements (34) and said second elements (35) opposing each other in order to stop the movement of the plate press roller in a radial direction so that the relative positional relationship between the circumferential surface of the plate press roller and the plate gripper surfaces of the leading-side plate lockup device is always kept constant when in said first plate exchange position of the plate cylinder (1) the plate is guided to the leading-side gripper surfaces."

IV. The appellant argued essentially as follows:

(i) The amendments to claim 1 of the main request with respect to claim 1 as granted are, in substance, based on the originally filed claims 5 and 6 and on the originally filed description, cf. column 6, line 23 to column 7, line 9 and, in particular, column 6, lines 43 to 48, of the A1-publication.

The further amendments to claim 1 of the auxiliary request are in substance based on originally filed claim 4 and on Figure 1 in connection with column 7, lines 49 to 57 of the A1-publication.

Therefore, the amended claims do not contravene Article 123(2) EPC.

(ii) The amended claims are clear in the sense of Article 84 EPC. In particular, it is clear to the person skilled in the art that the indication in claim 1 of the main request that the movement of

the plate press roller is stopped "in a radial direction of the plate cylinder in the first plate exchange position in such a way that the circumferential surface of the plate press roller is located on the same level as that of the plate gripper surfaces" means that the plate press roller is stopped in such a position that an imaginary plane formed by the narrow gap between the inner (clamping) surfaces of the grippers is tangential to the circumferential surface of the plate press roller.

- (iii) Document D3, as well as document D2, discloses a plate exchange apparatus comprising the features as indicated in the pre-characterising portion of claim 1 of the main request. This known plate exchange apparatus does not comprise regulating members for regulating the movement of the plate press roller in a radial direction of the plate cylinder during plate gripping and for stopping the movement of the plate press roller in a radial direction of the plate cylinder in the first plate exchange position in such a way that the circumferential surface of the plate press roller is located on the same level as that of the plate gripper surfaces, as indicated in the characterising portion of claim 1 of the main request.

The plate press roller 26 of the apparatus according to document D2 (D3) is, at the plate cylinder position where the plate is inserted into the leading side plate lock-up device, pressed against the plate cylinder. As a consequence of this arrangement, the leading end



of a plate must be inserted between the plate press roller 26 and the surface of the plate cylinder while the plate press roller 26 is pressed against the plate cylinder, and therefore, slipping occurs between the plate and the surface of the plate press roller 26 contacted with the plate surface on which an image is printed. As a result of this, the surface of the plate on which an image is printed is damaged by the plate press roller, thus causing a problem that will render a normal printing operation impossible.

The invention of the patent in suit solves this problem by the provision of regulating members as defined in the characterising portion of claim 1 of the main request, which regulating members ensure that during the plate inserting position the plate press roller is stopped at a certain distance from the plate cylinder and the plate gripper means so that the leading end of the plate can be properly and smoothly guided into the open gripper surfaces.

The plate exchange apparatus according to Figures 5A and 5B of document D4 comprises magnetic plate gripper means cooperating with a smooth plate cylinder surface having no gaps for housing mechanical gripper means. Therefore, in this apparatus the problem of insertion of the leading end of the plate does not occur. Furthermore, the plate is placed on the plate cylinder and held by magnetic force. The supply of the plate to the plate cylinder is achieved by the rocking of a positioning table. As the

plate 25 is placed on the surface of the plate cylinder 23, there is no gripping of the plate, i.e. there is no need for regulating members, which would assist in the insertion of the plate into the gripper means. The cam follower 30 together with cams 24, 24' only needs to lift the table 26 when no plate is required, and consequently, there is no hint to regulate the movement of roller 31 relative to plate cylinder 23.

Therefore, even when combining the teachings of documents D2 (D3) and E4, a person skilled in the art would not achieve the teaching of the arrangement as defined in claim 1 of the main request, and consequently, the subject-matter of claim 1 of the main request involves an inventive step.

The same applies to the subject-matter of claim 1 of the auxiliary request, since it comprises essentially the same features as the subject-matter of the main request and the additional features that the plate press roller is swingably and reciprocatably supported.

V. The respondents I and II argued essentially as follows:

- (i) The wording of claim 1 according to the main request "in such a way that the circumferential surface of the plate press roller is located on the same level as that of the plate gripper surfaces" is not clear. The "level of the gripper surfaces" is not defined, since there are two spaced-apart gripper surfaces having different

levels.

- (ii) Document D2 discloses a plate exchange apparatus comprising all the features of the pre-characterising portion of claim 1 of the main request. Moreover document D2 indicates at column 6, lines 20 to 43, that in the first plate exchange position of the plate cylinder the plate press roller is kept at a certain distance from the plate cylinder ("wird die Andrückwalze etwas vom Plattenzylinder abgestellt") and serves only for guiding the old and new printing plate, and that after insertion of the leading end of the plate into the gripper means and closing the gripper means the plate press roller is pressed onto the plate cylinder.

From this indication in document D2 in connection with Figure 4 of this document the person skilled in the art learns that the operating members for the plate press roller are regulated to move the plate press roller in a radial direction of the plate cylinder and to stop the movement of the plate press roller during plate gripping in such a way that the circumferential surface of the plate press roller is located on the same level as that of the plate gripper surfaces.

It is implicit in this teaching of document D2 for the person skilled in the art that there must be some regulating member or members acting on the operating member for the plate press roller to regulate the movement and stoppage of the plate press roller.

Since document D2 is silent about the nature of the "regulating members", the problem to be solved by the apparatus according to claim 1 of the main request with respect to the subject-matter of document D2 can be seen in providing suitable regulating members for regulating defined positions of the plate press roller with respect to the plate cylinder.

This problem is solved by the feature "said regulating members comprising a set of first elements arranged on said plate press roller and a set of second elements arranged on said plate cylinder, said first elements and said second elements opposing each other".

Such a solution is suggested to the person skilled in the art by document D4, cf. Figures 5A and 5B, which discloses a plate exchange apparatus for a printing press comprising regulating members 24, 24', 30 for regulating the movement of a plate guide member in a radial direction of the plate cylinder during plate supplying, wherein the regulating members comprises first elements 29, 30 arranged on the plate guide member and second elements 24, 24' arranged on the plate cylinder, said first elements and said second elements opposing each other. The fact that the apparatus according to document D4 has magnetic plate fixing means and no plate gripper means does not prevent the person skilled in the art from using the teaching of document D4 relating to the regulation of the movement of the plate guide member. To the person skilled in the art it is clear that the manner of

how the movement of the plate guide member is controlled is independent from the manner of how the plate is fixed on the plate cylinder.

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

The same applies to the subject-matter of claim 1 of the auxiliary request, since the additional feature of this claim, namely that the plate press roller is swingably and reciprocatably supported, is also present in the apparatus known from documents D2 or D4.

## **Reasons for the Decision**

### 1. *Amendments*

#### 1.1 Main request

Claim 1 according to the main request differs from claim 1 as granted essentially in that

- (a) the different phases of the plate mounting are designated as "a first plate exchange position", "a second plate exchange position" and a "period of rotation of the plate cylinder (1) between the first and second plate position",
- (b) the features have been added
  - "regulating members for regulating movement of said plate press roller in a radial direction of said plate cylinder during

plate gripping",

- "said regulating members comprising a set of first elements arranged on said plate press roller and a set of second elements arranged on said plate cylinder, said first elements and said second elements opposing each other",
  
- "in order to stop the movement of the plate press roller in a radial direction of the plate cylinder in the first plate exchange position in such a way that the circumferential surface of the plate press roller is located on the same level as that of the plate gripper surfaces".

These amendments are based on the originally filed application documents, as follows:

Claim 1 in connection with claims 5 and 6; description: page 12, line 15 to page 14, line 6, in particular, page 13, lines 8 to 13.

These amendments, on the one hand, do not add subject-matter to the content of the application as filed, and, on the other hand, restrict the scope of protection of claim 1 as granted. Therefore, the amended claim 1 according to the main request does not contravene Article 123(2) and (3) EPC.

#### 1.2 Auxiliary request

Claim 1 according to the auxiliary request differs from claim 1 according to the main request essentially in

that

(a) the feature

"support members for swingably supporting said plate press roller and wherein said plate press roller is reciprocated by said operating members in a radial direction of said plate cylinder so as to be pressed against said circumferential surface of said plate cylinder" has been added, and

(b) the feature

"in such a way that the circumferential surface of the plate press roller is located on the same level as that of the plate gripper surfaces" is replaced by the feature

"so that the relative positional relationship between the circumferential surface of the plate press roller and the plate gripper surfaces of the leading-side plate lockup device is always kept constant".

These amendments are based on the originally filed application documents, as follows:

Claim 4; description: page 15, lines 18 to 26.

These amendments, on the one hand, do not add subject-matter to the content of the application as filed, and, on the other hand, restrict the scope of protection of claim 1 as granted.

Therefore, the amended claim 1 according to the auxiliary request does not contravene Article 123(2) and (3) EPC.

2. *Clarity*

The Board is of the opinion that the amended claim 1, both of the main request and auxiliary request, are clear in the sense of Article 84 EPC.

In particular, the Board holds that it is clear to the person skilled in the art that the indication in claim 1 in the main request that movement of the plate press roller is stopped "in a radial direction of the plate cylinder in the first plate exchange position in such a way that the circumferential surface of the plate press roller is located on the same level as that of the plate gripper surfaces" means that the plate press roller is stopped in such a position that an imaginary plane formed by the narrow gap between the inner (clamping) surfaces of the grippers is tangential to the circumferential surface of the plate press roller.

3. *Inventive step*

3.1 Main request

3.1.1 Closest prior art

In the Board's judgement, document D2 represents the closest prior art. This document discloses a plate exchange apparatus comprising all the features of the pre-characterising portion of claim 1 of the main request.



Moreover, document D2, cf. column 6, lines 20 to 43, in connection with Figure 4, describes computer controlled operational steps at a plate exchange position B of the plate cylinder 3, which corresponds to the "first plate exchange position of the plate cylinder" indicated in claim 1 of the main request, as follows:

When plate cylinder position B is reached, the drive 23 (for plate press roller 26) is stopped. Then, the gripper means 56 are opened and in the next step, the plate press roller 26 is somewhat moved away from the plate cylinder 3 ("wird die Andrückwalze etwas vom Plattenzylinder 3 abgestellt") and serves only as a guide for the old and new printing plates. Then, after the old plate 27 has been removed, the leading end of the new plate 60 is inserted into the gripper means 56, and then the plate press roller 26 is moved towards the plate cylinder under light pressure.

From this description and from the corresponding picture of Figure 4 of document D2, the person skilled in the art learns that the operating members for moving the plate press roller 26 are regulated to move the plate press roller in a radial direction of the plate cylinder and to stop the movement of the plate press roller during plate gripping in such a way that the plate press roller is located on the same level as that of the plate gripper surfaces.

The Board agrees to the view of the Opposition Division and the respondents I and II that for the person skilled in the art it is implicit in this teaching of document D2 that there must be some regulating member or members acting on the operating member for the plate press roller to regulate the movement and stopping of

the plate press roller.

Therefore, also the features of the characterising portion of claim 1 of the main request

"regulating member for regulating movement of said plate press roller in a radial direction of said plate cylinder during plate gripping" and

"said regulating member are suitable for stopping the movement of the plate press roller in a radial direction of the plate cylinder in the first plate exchange position in such a way that circumferential surface of the plate press roller is located on the same level as that of the plate gripper surfaces"

are present in the plate exchange apparatus disclosed in document D2.

### 3.1.2 Problem to be solved with respect to the prior art

As stated above, the drive of the plate press roller 26 of the apparatus according to document D2 is stopped in the plate feeding position. From Figure 4 of document D2 it can be derived that there is a certain distance between the circumferential surface of the plate press roller and the plate cylinder for allowing the leading end of a new plate to be inserted and guided between the plate press roller and the plate cylinder.

Hence, the problem of avoidance of damage to the printing plate and imprecise insertion of the printing plate into the gripper means is already solved by the plate exchange apparatus known from document D2.

Document D2 is silent about the nature of the "regulating members" for regulating movement of the plate press roller. Therefore, the objective problem to be solved by the apparatus of claim 1 of the main request with respect to the apparatus according to document D2 can be seen in providing suitable regulating members for regulating defined positions of the plate press roller with respect to the plate cylinder.

### 3.1.3 Solution

This problem is solved in that, in the plate exchange apparatus known from document D2, regulating members are provided which comprise a set of first elements arranged on said plate press roller and a set of second elements arranged on said plate cylinder, said first elements and said second elements opposing each other.

### 3.1.4 This solution is suggested to the person skilled in the art by the teaching of document D4, for the following reasons:

Document D4, cf. Figures 5A and 5B and corresponding parts of the description, discloses a plate exchange apparatus for a printing press having regulating members 24, 24', 30 for regulating movement of a plate guide member in the form of a roller 31 in a radial direction of the plate cylinder 23. This roller 31 forms part of a plate guide member in the form of a plate supply table 26 for feeding and guiding a new plate 25. An operating member (pneumatic cylinder 33) is arranged to bias the plate supply table towards or away from the cylinder surface. A cam disc 24, 24' is

provided on each end of the plate cylinder 23 and a cam boss 30 forming part of said plate supply table 26 cooperates with the cam disc 24, 24'.

Therefore, the person skilled in the art learns from this disclosure of document D4 that regulating members in the form of a set of first elements (cam bosses 30) arranged on the plate guide member (26, 31) and a set of second elements (cam discs 24, 24') arranged on the plate cylinder are suitable regulating means for regulating the movement of a plate guide member, such as a plate press roller used in the apparatus of document D2, in a radial direction of the plate cylinder during the plate exchange operation.

To the person skilled in the art it is clear that the arrangement and functioning of the regulating members for the radial movement of the plate guide member disclosed in document D4 is independent of the manner of how the plate is fixed on the plate cylinder. Therefore, the fact that the apparatus according to document D4 has magnetic plate fixing means and does not have plate gripper means, does not prevent the person skilled in the art from using the teaching of document D4 relating to the regulating of the movement of the plate guide member for the same purpose in the apparatus known from document D2.

Thus, applying the above teaching of document D4 to the apparatus known from document D2, the person skilled in the art arrives at the apparatus according to claim 1 of the main request.

3.1.5 Therefore, the subject-matter of claim 1 of the main request does not involve an inventive step in the sense

of Article 56 EPC, and consequently, the main request of the appellant is not allowable.

### 3.2 Auxiliary request

Claim 1 according to the auxiliary request differs from claim 1 according to the main request essentially in that

- (a) the feature "support members for swingably supporting said plate press roller and wherein said plate press roller is reciprocated by said operating members in a radial direction of said plate cylinder so as to be pressed against said circumferential surface of said plate cylinder" has been added, and
- (b) the feature "in such a way that the circumferential surface of the plate press roller is located on the same level as that of the plate gripper surfaces" has been replaced by the feature "so that the relative positional relationship between the circumferential surface of the plate press roller and the plate gripper surfaces of the leading-side plate lockup device is always kept constant" (cf. point 1.2 supra).

The feature according to paragraph (a) above is already present in the apparatus known from document D2. Figures 1 and 2 of this document disclose support members (lever arm 22 and piston rod 21 acting on lever arm 22), which swingably support the plate press roller 26 and wherein the plate press roller 26 is reciprocated by the operating members 19, 21 in a radial direction of

the plate cylinder so as to be pressed against the circumferential surface of the plate cylinder.

The feature according to paragraph (b) above is also already present in the apparatus known from document D2. From Figure 4, in connection with the above cited passage at column 6, lines 20 to 43, of document D2, the person skilled in the art learns that during the first plate exchange position (position B in document D2), the relative provisional relationship between the circumferential surface of the plate press roller and the plate gripper surfaces of the leading-side plate lockup device is kept constant.

Therefore, the addition of the features according to paragraphs (a) and (b) above to the subject-matter of claim 1 of the main request does not result in a subject-matter involving an inventive step in the sense of Article 56 EPC.

Consequently, the auxiliary request of the appellant is also not allowable.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:

M. Dainese

W. Moser