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Datasheet for the decision of 31 January 2008

Case Number: T 0982/05 - 3.2.05

Application Number: 97909418.2

Publication Number: 0942887

IPC: B65H 3/52

Language of the proceedings: EN

Title of invention:
Sheet feed apparatus

Patentee:
De La Rue International Limited

Opponent:
GIESECKE & DEVRIENT GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
-

Decisions cited:
"Novelty, main request and third auxiliary request (no)"
"Inventive step, first and fourth auxiliary request (no)"
"Admissibility of second auxiliary request (no)"

Catchword:
-

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Case Number: T 0982/05 - 3.2.05

D E C I S I O N
of the Technical Board of Appeal 3.2.05
of 31 January 2008

Appellant: (Patent Proprietor)
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Respondent: (Opponent)
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Representative:
-

Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 6 June 2005 revoking European patent No. 0942887 pursuant to Article 102(1) EPC.

Composition of the Board:

Chairman: W. Zellhuber
Members: W. Widmeier
C. Rennie-Smith

Summary of Facts and Submissions

I. The appellant (patent proprietor) lodged an appeal against the decision of the Opposition Division revoking European patent No. 0 942 887.

Opposition had been filed against the patent as a whole based on Articles 100(a) EPC (lack of novelty, Article 54 EPC, and lack of inventive step, Article 56 EPC) and 100(c) EPC.

II. Oral proceedings were held before the Board of Appeal on 31 January 2008.

III. The appellant requested that the decision under appeal be set aside and that the patent be maintained as granted or on the basis of the first auxiliary request filed on 6 October 2005 or of the second, third or fourth auxiliary requests filed during oral proceedings.

IV. The respondent (opponent) requested that the appeal be dismissed.

V. Claim 1 of the main request (claim 1 as granted) reads as follows:

"1. Sheet feed apparatus for supplying sheets from a store (1) to a sheet transport system (22, 23), the apparatus comprising a feed system (4) for contacting stacked sheets in the store and withdrawing sheets from the store; a separator system (12), downstream of the store, to which sheets are fed by the feed system, the separator system (12) being adapted to feed sheets singly to the sheet transport system (22, 23), the

separator system (12) including a rotatable feed member (13) for feeding sheets to the sheet transport system; and a control system (29) for controlling operation of the feed system (4) and the feed member (13) of the separator system (12), characterized in that the separator system (12) is independent of the feed system (4) and in that the control system (29) controls all members of the feed system (4) independently of the feed member (13) of the separator system (12)."

Claim 1 of the first auxiliary request differs from claim 1 of the main request in that the feature "wherein the control system (29) selectively causes reverse operation of the rotatable feed member (13) of the separator system (12) to ensure that only single sheets are fed to the sheet transport system" is added at the end of the claim.

Claim 1 of the second auxiliary request differs from claim 1 of the main request in that the feature "wherein the control system (29) selectively causes reverse operation of the separator system (12) and varies the braking forces applied to the sheets to ensure that only single sheets are fed to the sheet transport system" is added at the end of the claim.

Claim 1 of the third auxiliary request differs from claim 1 of the main request in that the feature "and in that the control system (29) is adapted to lock the rotatable feed member (13)" is added at the end of the claim.

Claim 1 of the fourth auxiliary request differs from claim 1 of the main request in that the feature "and in that the separator system (12) further comprises a stepper motor (17), to which the control system is adapted to supply power without pulsing or stepping the motor (17), thereby locking the rotatable feed member (13)"
is added at the end of the claim.

VI. This decision refers to the following documents:

D2: EP-B-0 428 922

D4: DE-A-196 05 106

D6: US-A-4 494 747

VII. The appellant's arguments in the written and oral proceedings can be summarised as follows:

Main request

The patent in suit relates to preventing more than one sheet being fed to the transport system whereas document D2 is related to controlling the gap between successive sheets. Only slightly overlapped documents can be separated by the apparatus disclosed in document D2 but not completely overlapped ones. Document D2 does not disclose a separator system downstream of the store; the sheets are separated at the store by the picker assembly 21. For these reasons the subject-matter of claim 1 of the main request is novel with respect to document D2.

First auxiliary request

Document D2 is to be considered as the closest prior art. Neither this document nor the others suggest selectively reversing the operation of the rotatable feed member of the separator system. In document D4 the reverse operation of one of the two feed rollers is caused automatically rather than selectively. Document D6 should not be admitted into the proceedings. It was introduced into the proceedings by the respondent in December 2007, thus contrary to the Rules of Procedure of the Boards of Appeal, according to which the statements of grounds of appeal and the reply shall contain a party's complete case. Moreover, it is not prima facie highly relevant. In document D6 there is no separating system downstream of the sheet store. Thus, a combination of document D2 with document D4 or document D6 would not result in the subject-matter of claim 1 of the first auxiliary request. Moreover, in document D2 there is no corresponding problem to solve and thus there is no incentive for a skilled person to combine a feature of document D4 or D6 with document D2. It is also to be considered, when thinking of a reverse operation of the feed roller 23 of document D2, that the reversed sheet may cause a paper jam with the sheets in the store. The subject-matter of claim 1 of the first auxiliary request therefore involves an inventive step.

Second auxiliary request

The second auxiliary request is a consequence of the late filing of document D6 and of the importance this document was given in the oral proceedings. The feature

which is added to claim 1 of this request is clear and disclosed in the application as filed. The second auxiliary request should therefore be admitted.

Third auxiliary request

None of the documents discloses or suggests locking the rotatable feed member. Document D2 only discloses stopping the motor which drives the feed member. In that case the motor has little resistance to rotation so that the sheets can still easily be advanced. However, if the motor is locked it has a strong resistance to motion and sheets that may be skew fed can thus be straightened. Thus, the subject-matter of claim 1 of the third auxiliary request is novel and involves an inventive step.

Fourth auxiliary request

The subject-matter of claim 1 of the fourth auxiliary request is novel and involves an inventive step for the same reason as the subject-matter of claim 1 of the third auxiliary request. Claim 1 of the fourth auxiliary request specifies additionally how the locking system is achieved in practice.

VIII. The respondent's arguments in the written and oral proceedings can be summarised as follows:

Main request

The differences between document D2 and the subject-matter of claim 1 of the main request explained by the appellant are not reflected by the wording of this

claim. All features of claim 1 are disclosed in document D2 so that the subject-matter of this claim lacks novelty.

First auxiliary request

Document D6 was cited in response to the arguments brought forward by the Board of Appeal in its communication of 6 November 2007. Both document D4 and D6 show the principle of reversing the feed direction of a sheet when overlapped sheets are detected. It is irrelevant that in document D4 the reverse feed operation is caused automatically and that in document D6 there is no separator system downstream of the store. This principle can be applied to document D2 independently of further features of document D4 or D6. The possible paper jam which may occur when, in the apparatus of document D2, a sheet is reversed cannot be considered an obstacle because this will also happen in the apparatus shown in Figure 1a of the patent in suit. Thus, with the teaching of document D4 or D6 it is obvious to perform in an apparatus according to document D2, as an alternative to slowing down or stopping, a reverse operation of the feed roller. Therefore the subject-matter of claim 1 of the first auxiliary request does not involve an inventive step.

Second auxiliary request

The feature which is added to claim 1 of the second auxiliary request is questionable under Article 123(2) EPC so that this request should not be admitted.

Third auxiliary request

Stopping the rotatable feed member as disclosed in document D2 is to be seen as locking within the meaning of claim 1 of the third auxiliary request. Thus, the subject-matter of this claim is not novel.

Fourth auxiliary request

The subject-matter of claim 1 of the fourth auxiliary request differs from the subject-matter of claim 1 of the third auxiliary request in that it specifies that a stepper motor is used for driving the rotatable feed member. However, such motors and their use were commonly known in the art long before the priority date of the patent in suit so that this further feature cannot involve an inventive step.

Reasons for the Decision

1. *Main request*

Document D2 discloses a sheet feed apparatus for supplying sheets from a store (11, 12) to a sheet transport system (13, 14, 15), the apparatus comprising a feed system (21) for contacting stacked sheets in the store and withdrawing sheets from the store; a separator system (23, 24, 25, 27), downstream of the store, to which sheets are fed by the feed system, the separator system being adapted to feed sheets singly to the sheet transport system, the separator system including a rotatable feed member (23) for feeding sheets to the sheet transport system; and a control

system for controlling operation of the feed system and the feed member of the separator system, the separator system being independent of the feed system and the control system controlling all members of the feed system independently of the feed member of the separator system (cf. Figures 1 and 2, column 2, lines 24 to 29, column 2, line 53 to column 3, line 56, and column 4, line 49 to column 5, line 21). Consequently, document D2 discloses all features of the subject-matter of claim 1 of the main request.

The difference the appellant referred to, namely that the apparatus of document D2 controls the gap between succeeding sheets and can only separate slightly overlapped sheets while the apparatus according to claim 1 is also able to separate completely overlapped sheets, is not reflected by the wording and the features of claim 1.

The subject-matter of claim 1 of the main request is therefore not novel (Article 54 EPC).

2. *First auxiliary request*

Document D2, which is to be considered as the closest prior art, does not disclose that the control system causes a reverse operation of the rotatable feed member. The subject-matter of claim 1 of the first auxiliary request is therefore to be considered novel.

Document D6 was introduced into the proceedings in accordance with Article 13 of the Rules of Procedure of the Boards of Appeal, and its content was subject-matter of the written and oral proceedings. The Board

exercised its discretion in view of the fact that document D6 concerns a specific issue mentioned in the communication of the Board, the low complexity of document D6, the relevance of the document (see below) and the fact that no issue was raised which the Board and the parties could not reasonably be expected to deal with without adjournment of the oral proceedings.

Document D6 discloses a sheet feed apparatus in which a rotatable feed member 28 is operated in a reverse direction when overlapped sheets are detected (cf. column 11, line 59 to column 12, line 13, and Figures 18 and 19). The apparatus of document D6 is intended to feed banknotes (cf. column 1, lines 22 to 30). This is also a possible application of the apparatus of claim 1 (cf. paragraph [0001] of the patent in suit). Document D2 teaches to slow down the speed of the rotatable feed member or to stop it when sheets are not sufficiently separated. Document D6 teaches to reverse the direction of the rotatable feed member when sheets are overlapped. There is no obstacle for a person skilled in the art to apply the principle of reversing the feed direction to the apparatus of document D2. On the contrary, as the apparatus of document D6 is designed for transporting banknotes, there is an incentive for a skilled person to make use of this principle when modifying the apparatus of document D2 to make it suitable for the same purpose. There is no need to transfer further features of the apparatus of document D6 to the apparatus of document D2 when applying this principle. If there should be the problem, when reversing a sheet, that a jam with the sheets in the store may occur, then a person skilled in the art will provide for necessary counter measures rather than see this as an obstacle.

Such counter measures will also be necessary in an apparatus as shown in Figures 1a and 1b of the patent in suit. Thus, with the combined teaching of documents D2 and D6 the skilled person has the choice between the three possible reactions to the detection of overlapped sheets, namely slowing down, stopping or reversing the rotatable feed member. Which of those reactions is the most appropriate depends on the circumstances, for example on the degree of the overlap.

The subject-matter of claim 1 of the first auxiliary request cannot therefore be considered to involve an inventive step (Article 56 EPC).

3. *Second auxiliary request*

The feature of claim 1 of the second auxiliary request that the braking forces applied to the sheets are varied in order to ensure that only single sheets are fed to the sheet transport system is not disclosed in that way in the application as filed and finds no support in the description of the patent in suit. As this request was filed in the oral proceedings, it is thus late filed and being prima facie not allowable for formal reasons (Articles 84, 123(2) EPC), it is not admitted.

4. *Third auxiliary request*

Claim 1 of the third auxiliary request corresponds to claim 1 of the second auxiliary request filed on 6 October 2005.

Document D2 explains in column 3, lines 14 to 21 that the feed member 23 may be stopped, and it explains in column 5, lines 9 to 21 that by means of a velocity feedback the motor velocity is regulated according to the velocity command of the processor. When the feed member has to be stopped this velocity command must be "zero", and then this regulation must have the effect of a motor lock. Thus, the control system of the apparatus of document D2 is adapted to lock the rotatable feed member.

Therefore document D2 also discloses the additional feature of claim 1 of the third auxiliary request so that the subject-matter of this claim 1 lacks novelty.

5. *Fourth auxiliary request*

Claim 1 of the fourth auxiliary request corresponds to claim 1 of the third auxiliary request filed on 6 October 2005.

As explained above in point 4, the control system of document D2 is adapted to lock the motor. Document D2 does not mention which kind of motor is used for driving the rotatable feed member so that the subject-matter of claim 1 of the fourth auxiliary request is to be considered novel.

However, the use of a stepper motor in processor controlled systems is to be considered obvious because this kind of motor is convenient to handle in combination with digital control systems. In order to lock a stepper motor it is necessary to supply power to it without pulsing it. Consequently, when using a

stepper motor for driving the rotatable feed member of document D2, the control system must be adapted to supply power to the motor without pulsing it. As the use of a stepper motor is obvious, the additional feature of claim 1 of the fourth auxiliary request is obvious.

The subject-matter of claim 1 of the fourth auxiliary request does therefore not involve an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D. Meyfarth W. Zellhuber