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D E C I S I O N
of 1 February 2000

Case Number: T 0597/97 3.2.4

Application Number: 89312843.9

Publication Number: 0376520

IPC: B65H 3/06

Language of the proceedings: EN

Title of invention:

Front end feeder for mail handling machine

Patentee:

PITNEY BOWES, INC.

Opponents:

NEOPOST LTD.

Francotyp-Postalia Aktiengesellschaft & Co.

Headword:

-

Relevant legal provisions:

EPC Art. 56

Keyword:

"Inventive step (auxiliary request) - yes"

Decisions cited:

-

Catchword:

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Boards of Appeal

Chambres de recours

Case Number: T 0597/97 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 1 February 2000

Appellant: NEOPOST LTD.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 4 April 1997
rejecting the oppositions filed against European
patent No. 0 376 520 pursuant to Article 102(2)

EPC.

Composition of the Board:

Chairman: R. E. Gryc

Members: M. G. Hatherly

R. E. Teschemacher

Summary of Facts and Submissions

I. The decision of the opposition division to reject the oppositions against European patent No. 0 376 520 was posted on 4 April 1997. On 2 June 1997 the appellant (opponent I) filed an appeal against this decision and paid the appeal fee. The appellant filed the statement of grounds of appeal on 15 July 1997.

II. The following prior art documents were considered in the appeal proceedings:

ND1: US-A-4 730 821

ND3: US-A-4 266 762

FD2: US-A-4 653 742

FD3: US-A-3 857 559

III. Oral proceedings took place on 1 February 2000, attended by the appellant and the respondent (proprietor). Although duly summoned, the party as of right (opponent II) announced by letter of 11 October 1999 that he would not attend the oral proceedings. In accordance with Rule 71(2) EPC the oral proceedings took place without him.

IV. Claim 1 as granted reads:

"Feeder apparatus for stacked articles comprising:

(a) a hopper region (10) for receiving a stack (11) of articles with flaps (67), said hopper region

comprising a deck (12) and a side wall (22),

- (b) transport means (50) located in the hopper region (10) for moving articles in a downstream direction, and
- (c) means for fluffing the stack to allow advancement of lower articles in said stack as they are moved downstream, characterised in that the transport means includes means for nudging articles towards the side wall (22) simultaneously with said downstream movement, and in that the feeder apparatus further includes:
 - (d) a slot (35) alongside the side wall (22) for receiving flaps (67) of the stacked articles (11),
 - (e) means (38,40,42,43,45,46,47) connected to the side wall (22) for causing the side wall (22) to tamp the flaps against a deck side edge (31), and
 - (f) means for synchronizing the tamping action on the flaps with the transport means."

V. Claim 1 of the auxiliary request filed during the oral proceedings reads:

"Feeder apparatus for stacked articles comprising:

- (a) a hopper region (10) for receiving a stack (11) of articles with flaps (67), said hopper region comprising a deck (12) and a side wall (22),
- (b) transport means (50) located in the hopper region

(10) for moving articles in a downstream direction, and

- (c) means for fluffing the stack to allow advancement of lower articles in said stack as they are moved downstream, wherein the transport means includes means for nudging articles towards the side wall (22) simultaneously with said downstream movement, and wherein the feeder apparatus further includes:
- (d) a slot (35) alongside the side wall (22) for receiving flaps (67) of the stacked articles (11),
- (e) means (38,40,42,43,45,46,47) connected to the side wall (22) for causing the side wall (22) to tamp the flaps against a deck side edge (31), and
- (f) means for synchronizing the tamping action on the flaps with the transport means and with the fluffing means such that the tamping force is reduced during downstream movement of the articles and increased during fluffing."

VI. In the appeal proceedings the appellant argued that it would be obvious to combine the teachings of ND1, ND3 and FD2 and thereby arrive at the subject-matter of claim 1 of each of the main and auxiliary requests.

The respondent denied that it would be obvious to combine the teachings of these documents and added that anyway the claimed subject-matter would still be inventive over the combination.

The party as of right made no comment in the appeal

proceedings.

VII. The appellant requested that the decision be set aside and the patent revoked.

The respondent requested that the appeal be dismissed.

Alternatively he requested that the patent be maintained on the basis of the auxiliary request submitted during the oral proceedings, namely in the following version:

Claims: 1 to 5 submitted as the auxiliary request during the oral proceedings

Description: pages 2 and 2a submitted during the oral proceedings
pages 3 to 8 of the patent as granted

Drawings: Figures 1 to 27 of the patent as granted

The party as of right made no request in the appeal proceedings but had requested in the opposition proceedings that the patent be revoked.

Reasons for the Decision

1. The appeal is admissible.
2. *Main request*
 - 2.1 Novelty of claim 1

The appellant, while arguing that claim 1 defined merely an aggregation of features, accepted that no single prior art document disclosed the combination of all the claimed features. The board confirms this and so considers the subject-matter of claim 1 novel within the meaning of Article 54 EPC.

2.2 Closest prior art - ND1

2.2.1 The prior art closest to that of the present invention is the feeder apparatus for stacked articles disclosed by ND1 which comprises:

- a hopper region (at the left of Figure 4) for receiving a stack of articles 86 with flaps (see column 4, line 39), said hopper region comprising a deck (support 11) and a side wall 13,
- transport means (see column 5, lines 42 to 45) located in the hopper region for moving articles in a downstream direction, and
- a slot 15 alongside the side wall 13 for receiving flaps of the stacked articles 86 (see Figure 1 and column 4, lines 44 to 48).

2.2.2 Moreover in the device of ND1 a "second sensor 36 disposed at the ledge 12 of the support 11 is responsive to a force in the direction of the ledge 12" (see Figure 1 and column 4, lines 52 to 55).

Lines 54 to 57 of column 5 state that "the slot 15 ... receives the flaps" and "the stack of envelopes has to (be) received without being clamped".

Column 6, line 60 to column 7, line 4 explains that "a stack of letter envelopes with open flaps is inserted onto the support, then the first sensor 39 responds, the motor is turned on and the slot 15 is narrowed until the second sensor 36 also responds. This occurs when all envelope flaps are disposed closely spaced in the slot 15. Now the separation or isolation of the envelopes can start. Successively, in each case the lowermost envelope is transported away. Thereby successively additional space is generated for the remaining flaps in slot 15 such that the second sensor 36 can return to its rest position. This again gives a starting signal for the motor, which narrows the slot 15 until the second sensor again responds."

2.2.3 Thus transport from the envelope stack will result in a reduced pressure of the remaining envelopes against the second sensor 36 which will then move to its rest position and start the motor to drive the side wall 13 until the remaining envelopes are pressed against the sensor sufficiently to move it from its rest position and cause the motor and hence the wall movement to stop.

2.2.4 The appellant argued that after **each** envelope left the slot the pressure on the sensor would be relieved sufficiently to cause the wall to be driven inwards thus increasing the pressure again. According to the appellant this cycle would be possible after each envelope left because the sensor could be set accurately enough to sense the difference in pressure due to the presence or absence of one envelope.

However the board notes that ND1 is ambiguous on this

point, stating merely that successively the lowermost envelope is transported away to generate successively additional space such that the second sensor 36 can return to its rest position (see column 6, line 66 to column 7, line 2). This might be after the exit of each envelope or only after the exit of a plurality of envelopes. The board considers the latter alternative as the more likely in view of the high speed operation of the device and the apparent impossibility for even an accurately set sensor to distinguish between the exit of two thin flaps (e.g. of airmail envelopes) and the exit of one thick flap.

Even if the sensor were to react after the exit of each individual envelope it is unclear whether the wall would have moved inwards before the exit of the next envelope. The motor might react quickly but it seems unlikely that the wall would move as quickly because of the number of mechanical components between the motor and the wall (e.g. the latter's connection to drive lever 21 by the tension spring 26 shown on Figure 1).

2.3 Comparison of claim 1 of the main request with ND1

2.3.1 It is clear from the above section 2.2.1 that ND1 discloses the features of sections (a), (b) and (d) of claim 1.

2.3.2 Further, it is clear from the above sections 2.2.2 and 2.2.3 that ND1 discloses means 19,20,24,21,26 connected to the side wall 13 for causing the side wall 13 to move the flaps against the deck side edge 12.

This corresponds to section (e) of claim 1 of the main

request except that the latter uses the word "tamp" instead of the word "move".

In ND1 the wall is moved repeatedly as the flaps leave the slot to repeatedly press the remaining flaps against the deck side edge so that they exert pressure on the pin 37 to operate the sensor 36 to stop the side wall movement. The action of the side wall of ND1 on the flaps and the deck side edge falls within the meaning of the verb "to tamp", namely "to ram down hard to consolidate earth or gravel" or "to consolidate tobacco in a pipe by a series of light taps".

Thus the board considers that feature (e) of claim 1 is disclosed by ND1.

2.3.3 The side wall in ND1 moves inwards as a result of flaps being extracted from the slot by the transport means. It follows that if the transport means is not operating then the side wall does not move inwards. Thus the repeated pressing or tamping of the side wall against the flaps is tied to the operation of the transport means or, in other words, the tamping action is synchronized with the transport means. Components such as the motor 69, cam disk 20, lever 21 and sensor 36 make up the means for achieving this synchronization.

Thus the board finds that ND1 discloses also feature (f) of claim 1.

2.3.4 The respondent argued that the force according to the invention was very different to the force in ND1. In the invention it was variable, applied during a very short time in comparison with the time for each feed

cycle and clamped and unclamped the flaps in the stack with a cyclical variation. Moreover in the invention the tamping action was synchronized with the transport means and not with the feeding of individual items by the transport means as in ND1. All this was derivable from the patent's description of how the tamping device actually operated.

However the board finds that the passages and drawings from which this information might be derived relate to a particular embodiment (see column 2, lines 42 and 43 which read "the detailed description given below of one embodiment of a front end feeder according to the invention taken in conjunction with the accompanying drawings"). The board cannot see any clear indication in the patent documents as a whole that particular aspects of the particular embodiment are mandatory and thus might be used to restrict beyond their normal meanings the terms "tamp", "tamping action" and "synchronizing" in claim 1 of the main request.

2.3.5 Accordingly the board finds that ND1 discloses features (a), (b), (d), (e) and (f) of claim 1 of the main request but not the features in section (c), namely the fluffing means (however see section 2.4.7 below) and the nudging means.

2.4 Problem, solution and inventive step

2.4.1 Starting from the feeder apparatus known from ND1 the board sees the problem underlying the present invention to be to reliably feed and align mixed mail.

The appellant argued that ND1 gave no indication that

its feeder apparatus did not work correctly but the board points out that ND1, being a patent document, is concerned with problems with earlier devices and the disclosure of various improved devices to solve these problems. It would be most unusual if the drafter of ND1 were already to know the disadvantages of the invention he was describing and then actually set out these disadvantages in ND1. A patent document usually presents a glowing picture of achievement which may dim as time goes by.

The appellant added that the present patent did not disclose mixed mail. While it is true that the Figures do not show a stack of open flapped and closed flapped mail, the board draws attention to the definition of mixed mail in lines 20 to 22 of column 1, to lines 43 to 47 of column 3 and to column 4, line 58 to column 5, line 9.

2.4.2 The present invention solves the above problem by providing means for fluffing the stack to allow advancement of lower articles in said stack as they are moved downstream and by the transport means including means for nudging articles towards the side wall simultaneously with said downstream movement, as set out in section (c) of claim 1.

2.4.3 However the board considers that the skilled person wishing to solve the problem set out in section 2.4.1 above would not have needed to be inventive to solve it. He would have looked at other prior art feeder documents and found that fluffing means and nudging means to solve his problem were already well known in the prior art, for example from FD2 and ND3

respectively.

2.4.4 It can be seen from Figures 6a to 6f and column 7, lines 28 to 35 that FD2 discloses means for fluffing a stack of paper sheets to allow advancement of lower sheets in said stack as they are moved downstream. Thus the fluffing means set out in the first part of section (c) of claim 1 were known *per se*.

2.4.5 Figure 2 of ND3 shows a sheet feed roll 35 that, according to column 5, lines 45 to 51, is "canted towards the side registration edge 60 so that a portion of the drive force acts to drive the sheet towards the side registration edge while a portion of the drive force acts to drive the sheet forward in a sheet feeding direction parallel to the sheet registration edge."

The result is that sheets moving downstream receive a push towards the side registration edge 60. The second feature of section (c) of claim 1 of the main request uses the word "nudging" but also this word describes what happens in ND3 because each sheet receives a nudge as it moves downstream past the roll 35.

Thus the nudging means set out in the second part of section (c) of claim 1 of the main request were known *per se*.

2.4.6 The appellant argued that the invention was merely an aggregation of known teachings for solving separate problems i.e. that the fluffing means known from FD2 and the nudging means known from ND3 solve the problem arising from the feeder of ND1. The respondent replied

that the tamping, fluffing and nudging actions of the invention were interrelated and produced more effective feeding.

However while it is true that in the particular embodiment of the invention (see e.g. Figure 3) these actions happen at essentially the same place and the fluffing, nudging and transport are carried out by the same roller assemblies 50, the claim is not so specific. The claim covers arrangements in which the tamping, fluffing and nudging are carried out by separate means and the board sees it as obvious to combine the separate means of ND1, FD2 and ND3 to achieve this.

2.4.7 Although Figure 4 of ND1 is a schematic view of a complete device, this document is primarily concerned with the control of the side wall and the skilled person would be expected to add those means to the ND1 device that are needed to make it into a complete reliable feeder. Indeed, the respondent himself pointed to the similarity between the profile of the feed section 83 on Figure 4 of ND1 and the profile of the picker wheel 19 on Figure 1 of FD3 which seems from column 7, lines 30 to 49 to have a fluffing action. Thus it seems that fluffing means, if not actually present in the ND1 device, would at least be suggested to the skilled person.

2.4.8 The lack of a mention in FD2 and ND3 of handling open flapped articles or mixed mail would not prevent the skilled person from considering and using their teachings, the tamping problem particularly arising with open flapped articles is dealt with by ND1 anyway.

2.4.9 Accordingly the board considers that the subject-matter of claim 1 of the main request would be arrived at in an obvious way by the skilled person by modifying the feeder of ND1 using the teachings of FD2 and ND3.

Thus the main request cannot be allowed.

3. *Auxiliary request*

3.1 Amendments to claim 1

3.1.1 Claim 1 of the auxiliary request differs from claim 1 as granted by being in the one part form and by additions in section (f) to read "means for synchronizing the tamping action on the flaps with the transport means and with the fluffing means such that the tamping force is reduced during downstream movement of the articles and increased during fluffing". This is derivable from column 6, lines 48 to 54 or column 13, lines 2 to 4 of the patent specification as granted (corresponding to page 10, lines 6 to 10 and page 20, lines 24 to 26 respectively of the originally filed application).

Thus there is no objection under Article 123(2) EPC to these amendments and, since the added matter restricts the scope of the claim, there is no objection under Article 123(3) EPC either.

3.1.2 The only other changes made to arrive at the patent documents of the auxiliary request are adaptations of the description to claim 1 and an acknowledgement of ND1.

3.1.3 Thus the patent documents of the auxiliary request are not objectionable under Article 123 EPC. This was not disputed by the appellant.

3.2 Novelty, closest state of the art, problem and solution

The reasoning given in the above sections 2.1, 2.2 and 2.4 for claim 1 of the main request remains valid for claim 1 of the auxiliary request.

3.3 Inventive step

3.3.1 Claim 1 of the auxiliary request explains that the tamping action is synchronized not only with the the transport means but also with the fluffing means, and that the tamping force is reduced during downstream movement of the articles and increased during fluffing. Thus the flaps can be tamped with a heavy force prior to their downstream movement but, so that this force does not hinder the downstream movement, it is reduced prior to said downstream movement.

3.3.2 It has been said in section 2.2.3 above that the application of the tamping force in ND1 is dependent on the operation of the transport means but that it did not seem possible to derive from ND1 precisely when in a feed cycle the tamping force was applied. ND1 says in column 5, lines 56 and 57 that the stack has to be received without being clamped. Since there is no disclosure of relieving the force just before the envelope starts to leave, it follows that the applied force must be low (i.e. low enough not to clamp the articles).

In ND1 the tamping force is applied as a result of a flap or flaps leaving the slot, this force occurs because the side wall is moving inwards to take up the slack in the stack of flaps. The force is applied as a result of envelopes leaving the stack.

- 3.3.3 Comparing this with the present invention, it is clear from claim 1 of the auxiliary request that a high force is repeatedly applied in the invention to tamp the flaps and then reduced each time to let each flap leave. The tamping force with its effect on the side wall is something superimposed on the coarse positioning of the wall to take up the slack in the stack of flaps. The sideways force varies in order to allow the articles leave the stack.

The board sees no hint in ND1 or in any of the other prior art documents on file towards modifying the device of ND1 to arrive at a device with this superimposed variable tamping force.

- 3.3.4 Accordingly the board concludes that the prior art documents on file, taken singly or in any combination, would not lead the skilled person to the subject-matter of claim 1 of the auxiliary request which thus involves an inventive step as required by Article 56 EPC.

4. The patent may therefore be maintained amended, based on independent claim 1 of the auxiliary request, claims 2 to 5 dependent thereon, the amended description and the drawings.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent as amended in the following version:

Claims: 1 to 5 submitted as the auxiliary request during the oral proceedings

Description: pages 2 and 2a submitted during the oral proceedings
pages 3 to 8 of the patent as granted

Drawings: Figures 1 to 27 of the patent as granted

The Registrar:

The Chairman:

G. Magouliotis

R. Gryc