

Internal distribution code:

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

D E C I S I O N
of 3 February 2004

Case Number: T 0365/01 - 3.5.2

Application Number: 92103882.4

Publication Number: 0503502

IPC: B07C 1/00

Language of the proceedings: EN

Title of invention:

High-speed mail-handling machine comprising a sensor processor
and method of operating such a machine

Patentee:

PITNEY BOWES INC.

Opponents:

01: Société Secap (withdrawn)

02: Francotyp-Postalia Aktiengesellschaft & Co. KG

Headword:

-

Relevant legal provisions:

EPC Art. 56

Keyword:

"Inventive step - yes"

Decisions cited:

-

Catchword:

-



Case Number: T 0365/01 - 3.5.2

D E C I S I O N
of the Technical Board of Appeal 3.5.2
of 3 February 2004

Appellant: PITNEY BOWES INC.
(Proprietor of the patent) World Headquarters
One Elmcroft
Stamford
Connecticut 06926-0700 (US)

Representative: Ritter und Edler von Fischern, Bernhard
Dipl.-Ing.
Hoffman Eitle,
Patent- und Rechtsanwälte
Postfach 81 04 20
D-81904 München (DE)

Respondents: Francotyp-Postalia Aktiengesellschaft & Co. KG
(Opponent 02) Triftweg 21-26
D-16547 Birkenwerder (DE)

Representative: Schaumburg, Thoenes, Thurn
Patentanwälte
Postfach 86 07 48
D-81634 München (DE)

(Former opponent 01) Société Secap
21, rue Alphonse le Gallo
F-92100 Boulogne Billancourt (FR)

Representative: Santarelli
14, avenue de la Grande Armée
F-75017 Paris (FR)

Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 26 January 2001
revoking European patent No. 0503502 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: W. J. L. Wheeler
Members: R. G. O'Connell
J. H. P. Willems

Summary of Facts and Submissions

I. The appeal contests the decision of the opposition division to revoke European patent No. 503 502. The reason given for the revocation was that the subject-matter of claim 1 as granted did not involve an inventive step.

II. The patent is unamended. Claim 1 is worded as follows:

"A mail-handling machine (11) for processing mail pieces along a flow path through a plurality of stations (15, 17, 19, 23) each having drive means (96, 97, 98, 100, 102, 103, 104) for processing the mail under control of a drive controller (50) for said drive means, said plurality of stations having sensors (56, 58, 60, 62, 64, 66, 68, 70, 72) for monitoring the progress of the mail pieces and generating sensor data in response thereto for communication to the drive controller (50), comprising: a sensor processor (52) connected to the sensors for accessing the sensors and receiving the sensor data; and means connected to the sensor processor (52) and to the drive controller (50) for communicating the sensor data to the drive controller, characterised in that the sensor processor (52) is arranged to activate the sensors before accessing the sensors and in that the sensor processor (52) is further arranged to execute a main access cycle periodically so as to access each sensor of a first group during each cycle and to access each sensor of a second group only during some but not all of the cycles."

Claims 2 to 8 are dependent on claim 1.

Claim 9 is worded as follows:

"A method of operating a high speed mail-handling machine (11) for processing mixed mail of varying thickness and size, said method including at least the steps of transporting each mailpiece to a weighing station and weighing each mailpiece and then printing indicia on the weighed mailpiece, said steps being activated and controlled by a drive controller in accordance with a plurality of sensors distributed throughout the machine at least some of which are optical sensors, the method further causing a dedicated sensor processor to access the sensors and communicate their state to the drive controller, and to activate the sensors before collecting their status, where the activation step includes measuring the background radiation before collecting the status of the optical sensors and wherein the accessing step involves executing a main access cycle periodically so as to access each sensor of a first group during each cycle and to access each sensor of a second group only during some but not all of the cycles."

Claims 10 to 13 are dependent on claim 9.

III. Four prior art documents were cited in the opposition proceedings:

D1: US-A-4 897 587

D2: US-A-4 886 976

D3: US-A-4 172 289

D4: US-A-4 924 106.

- IV. Oral proceedings were held before the Board on 3 February 2004.
- V. The appellant proprietor accepted that a mail-handling machine according to the pre-characterising preamble of claim 1 of the patent in suit was known from D1, and that D2 disclosed in the context of mail-handling machines a sensor processor arranged to activate sensors before accessing them. But he argued that the feature that the sensor processor was further arranged to execute a main access cycle periodically so as to access each sensor of a first group during each cycle and to access each sensor of a second group only during some but not all of the cycles, was not in any way rendered obvious by the cited prior art. In D1, Table 2 showed the cycle time loading of the motor controller (see the table heading on line 5 of column 7) and had nothing to do with accessing the sensors. In time slice T13 the motor controller read the sensor information which had been stored ready for it by the sensor processor (see D1, column 4, lines 39 to 42). If it became necessary for a high priority function to appropriate time from a low priority function it would not do so periodically but only unpredictably from time to time. In top priority time slices T1 and T14 the encoders were read by the motor controller. These encoders did not monitor the progress of mail pieces and thus were not "sensors" in the meaning of claim 1. In time slice 13 either all the sensors were read or none of them, depending on whether there was enough time to perform a priority 4 function. D3 was not in

the technical field of mail-handling machines but rather concerned the remote fields of monitoring assembly lines or machine tools. In any case, all the sensors were polled in every cycle with sensors A and B and operating device C being polled three times per cycle. In D4 the sensors were all sensing the same thing, the profile of a flap of an envelope; they were not monitoring the progress of mail through the machine. There was no suggestion that all the sensors of a first group should be scanned in every cycle and other sensors should be scanned only in some of the cycles.

VI. The respondent opponent (O2) argued that a mail-handling machine according to the pre-characterising preamble of claim 1 of the patent in suit was known from D1. The characterising features of the claim, viz (a) the sensor processor is arranged to activate the sensors before accessing the sensors and (b) the sensor processor is further arranged to execute a main access cycle periodically so as to access each sensor of a first group during each cycle and to access each sensor of a second group only during some but not all of the cycles, solved independent problems and could therefore be attacked separately. D2 disclosed feature (a) in the context of mail-handling machines. Feature (b) was an obvious modification of what was known from D1, Table 2, column 7 and Figure 2. The encoders read in time slices T1 and T14 were sensors of a first group which were always read with the top level of priority 1. The sensors read in time slice T13 were sensors of a second group, read with a lower priority 4 if time was available in a cycle for level 4 priority functions, so that the second group of sensors would inevitably be read in some but not all of the cycles. Thus D1 taught

the general idea of setting different priorities for different functions and it was obvious to apply this idea to assign different priorities to different sensors. D3 concerned programmable control in general and taught the idea of reading sensors A, B and C three times as often as other sensors. A combination of D1 and D3 rendered feature (b) obvious. D4 disclosed a row of sensors for mapping the profile of an envelope flap. Only those sensors which were in the vicinity of the flap edge were turned on so that some sensors were read more often than others. A combination of D1 and D4 rendered feature (b) obvious.

- VII. The appellant proprietor requested that the decision under appeal be set aside and that the patent be maintained unamended.
- VIII. The respondent opponent (O2) requested that the appeal be dismissed.
- IX. Respondent opponent (O1) withdrew its opposition (letter of 30 November 2001).

Reasons for the decision

- 1. The appeal is admissible.
- 2. The only issue in dispute is the question of whether the subject-matter of the independent claims 1 and 9 of the patent as granted involves an inventive step.
- 3. It is common ground that document D1 represents the closest prior art and that it discloses a mail-handling

machine in accordance with the pre-characterising preamble of claim 1 of the patent in suit. It can be readily seen that Figures 1 and 2 of D1 show a mail-handling machine (11) for processing mail pieces along a flow path through a plurality of stations (15, 17, 19, 23) each having drive means (80, 82, 83, 84, 86, 87, 88, 96, 97, 98, 100, 102, 103, 104) for processing the mail under control of a drive controller (50) for said drive means, said plurality of stations having sensors (56, 58, 60, 62, 64, 66, 68, 70, 72) for monitoring the progress of the mail pieces and generating sensor data in response thereto for communication to the drive controller (50). A sensor processor (52) is connected to the sensors for accessing them and receiving the sensor data. Means are provided connected to the sensor processor (52) and to the drive controller (50) for communicating the sensor data to the drive controller. This is described in D1 from column 3, line 26 to column 5, line 49.

4. The subject-matter of claim 1 of the patent in suit differs from the prior art known from D1 in that:
 - (a) the sensor processor (52) is arranged to activate the sensors before accessing the sensors and
 - (b) the sensor processor (52) is further arranged to execute a main access cycle periodically so as to access each sensor of a first group during each cycle and to access each sensor of a second group only during some but not all of the cycles.
5. It has not been disputed that an example of feature (a) is known per se from document D2, which discloses a

mail-handling machine in which a microprocessor activates flap profile sensors to first record ambient light and then LEDs are activated and a second reading is taken and compared with the ambient value. However, D2 contains no hint whatever of feature (b).

6. Feature (b) is not suggested in D1 either. As pointed out by the appellant, D1 concerns motor control. Table 2 in column 7 of D1 is indeed headed "TIME CYCLE LOADING OF MOTOR CONTROLLER". The shaft encoders associated with the motors are read via bus 108 twice in each cycle in time slices T1 and T14 with the top priority level, 1. These encoders do not monitor the progress of the mail pieces, nor are they accessed by the sensor controller 52; therefore they are not sensors arranged in the manner required by claim 1 of the patent in suit. Sensors 56 to 72 shown in Figure 2 of D1 are polled by the sensor controller 52 and the sensor information is stored until called for by the motor controller (see D1, column 4, line 34 to column 5, line 2). In column 2, lines 44 to 46, it is explained that the sensors supply input to the motor controller through the sensor controller. It appears to be this stored input from the sensors that is read by the motor controller in time slice T13, if there is enough time in the cycle to perform priority level 4 functions. Be that as it may, in any case there is no disclosure or suggestion in D1 that the sensor processor polls a first group of sensors in every cycle and a second group of sensors in some but not all of the cycles. Indeed, the function performed in time slice T13 is "Read all sensor inputs", ie if this function is performed at all, all the sensor inputs are read,

otherwise the function is not performed at all and in this case none of the sensor inputs would be read.

7. In the judgement of the Board, the respondent opponent's argument that because D1 discloses the assignment of different priority levels to different functions (in the context of motor control) it would be obvious to assign different priority levels to different groups of sensors and to access them in the manner specified in claim 1 of the patent in suit, feature (b), is a classic hindsight argument. It supposes that a person skilled in the art would postulate a generalisation of the specific teaching of D1 and then go on to make a particular application of the generalisation to assign different priorities to different groups of sensors monitoring the progress of mail pieces in the D1 machine and access them in accordance with feature (b). This is several steps away from the actual disclosure of D1 and the last step can hardly be envisaged without prior knowledge of the patent in suit. The Board concludes that feature (b) is not rendered obvious by the disclosure of document D1.

8. D3 concerns programmable controllers for sequentially operating industrial equipment such as assembly lines and machine tools. A control program 10, stored in RAM 4 and shown in Figure 5 of D3, includes instructions to access sensors A and B and operating device C three times in each control cycle, so that these steps are given a higher priority than other steps of the program which are carried out only once per cycle. However, the sensors A and B are accessed by the programmable controller 2 itself, not by a dedicated sensor processor. Mail-handling machines are

- not mentioned at all in D3. In view of this, the Board concludes that D3 does not render it obvious to include feature (b) in the mail-handling machine of D1.
9. D4 discloses a sensor controller controlling sensors for sensing the profile of an envelope flap in a mail-handling machine. Only those sensors which are in the vicinity of the flap edge are activated by the controller. The choice of the sensors which are activated depends on the flap profile being sensed. The sensors do not belong to different groups with the sensors of one group being activated in every cycle while the sensors of another group are activated only during some but not all of the cycles. Nor do the sensors monitor the progress of mail pieces. In view of this, the Board concludes that D4 does not render it obvious to include feature (b) in the mail-handling machine of D1.
10. Summarising, feature (b) is not known *per se* from any of the cited documents D1 to D4. Nor is the inclusion of feature (b) in a mail-handling machine according to the pre-characterising preamble of claim 1 of the patent in suit (known from D1) obvious having regard to the cited documents D1 to D4. It can therefore be left undecided whether features (a) and (b) solve unrelated problems.
11. The Board concludes that the subject-matter of claim 1 is to be considered as involving an inventive step. Independent claim 9 recites features corresponding to the above discussed features (a) and (b) and its subject-matter is likewise to be considered as involving an inventive step. Thus the ground of

opposition invoked by the respondent does not prejudice the maintenance of the patent.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is maintained unamended.

The Registrar:

The Chairman:

D. Sauter

W. J. L. Wheeler