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Application No.: 82 104 198.5

Publication No.: 0 065 715

Title of invention: Postal matter sorting method and system

Classification: B07C 3/02

D E C I S I O N  
of 24 March 1992

Proprietor of the patent: KABUSHIKI KAISHA TOSHIBA

Opponent: AEG Aktiengesellschaft, Berlin und Frankfurt

Headword:

EPC Article 56

Keyword: "Inventive step - yes, after amendment"

Headnote



Case Number : T 304/90 - 3.5.2

**D E C I S I O N**  
of the Technical Board of Appeal 3.5.2  
of 24 March 1992

**Appellant :** AEG Aktiengesellschaft, Berlin und Frankfurt  
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**Decision under appeal :** Decision of Opposition Division of the European  
Patent Office dated 16 March 1990 rejecting the  
opposition filed against European patent  
No. 0 065 715 pursuant to Article 102(2) EPC.

**Composition of the Board :**

**Chairman :** A. Hagenbucher  
**Members :** M.V.E. Lewenton  
M.J. Borloz

**Summary of Facts and Submissions**

I. The Appellant contests the decision of the Opposition Division rejecting the opposition to European patent No. 0 065 715.

II. The following prior art documents were considered in the proceedings before the Opposition Division:

- D1: DE-A-1 574 143,
- D2: DE-A-1 574 564,
- D3: "Handwörterbuch der Produktionswirtschaft", Stuttgart 1979, pages 1339 to 1354, in particular pages 1342, 1347, Table 2.

III. During preliminary correspondence between the Board and the parties, the Rapporteur cited the basic handbook

- D4: Steinbuch, Weber: "Taschenbuch der Informatik", Vol. III, 1974, pages 131 to 138 and 189

as additional background information.

IV. Oral proceedings were held on 24 March 1992. In response to objections raised by the Board and the Appellant the Respondent filed new Claims 1 and 6 and a new introduction to the description.

V. Claims 1 and 6 are now worded as follows:

"1. A postal matter sorting method which uses a postal matter sorting system in accordance with a schedule table, said sorting system comprising:

- a plurality of sorting apparatuses having a function of selectively sorting postal matter in accordance with postal codes, each sorting apparatus

having a reader (4) for reading destination data applied to written postal matter, a plurality of bins (10) arranged perpendicularly in a plurality of stages for sorting said postal matter and each of which has a pick up mechanism, a gate mechanism (5) for stacking said postal matter in said plurality of bins (10) based on the destination data from said reader (4), and sorting conveyors (6a, 6b, 6c and 6d);

- a transfer mechanism (26), which sequentially opposes said plurality of bins (10) and which receives stacked postal matter picked up from said plurality of bins (10);

- a destination label printer (28) for printing a destination label for the stacked postal matter transferred by said transfer mechanism (26);

- a bundling unit (30) for bundling the stacked matter on which the destination label is applied, and

- a central system control section (77) which includes said schedule table (121) for determining operation modes of said plurality of sorting apparatuses, and which operates each of said plurality of automatic sorting apparatuses based on said schedule table (121);

- wherein said schedule table (121) includes as said operation modes a field for designating a primary sorting mode in which the sorting is performed by the upper digits of the postal code and a secondary sorting mode in which the sorting is performed by the lower digits of the postal code, said schedule table further includes a field for the discrimination number of each sorting apparatus and a field for the start time of each sorting apparatus, said sorting method comprising the steps of:

(a) estimating the amount of postal matter in said primary and secondary sorting modes and calculating the time required for processing based on the estimated amount;

(b) determining the number and operation status data of automatic sorting apparatuses and the start time of each apparatus from the time of arrival of each piece of postal matter to the departure times of each piece of postal matter;

(c) specifying a discrimination number of each automatic sorting apparatus to be operated and specifying a primary or secondary sorting mode of the respective automatic sorting apparatus that is to be operated, and registering the start time in said schedule table, so as both the start time and also the discrimination number are specified in the schedule table that the envisaged operation of the primary and secondary sorting modes are carried out automatically, and

(d) permitting said central system control section (77) to determine in response to the amount of said postal matter to be processed and said operation status data the allotment of said primary and secondary sorting modes and number of said automatic sorting apparatuses to be operated.

6. A postal matter sorting system for carrying out the method in Claim 1, comprising:

- a plurality of sorting apparatuses having a function of selectively sorting postal matter in accordance with postal codes, each sorting apparatus having a reader (4) for reading destination data applied to written postal matter, a plurality of bins (10) arranged perpendicularly in a plurality of stages for sorting said postal matter and each of which has a pick up mechanism, a gate mechanism (5) for stacking said postal matter in said plurality of bins (10) based on the destination data from said reader (4), and sorting conveyors (6a, 6b, 6c and 6d);

- a transfer mechanism (26), which sequentially opposes said plurality of bins (10) and which receives

stacked postal matter picked up from said plurality of bins (10);

- a destination label printer (28) for printing a destination label for the stacked postal matter transferred by said transfer mechanism (26);

- a bundling unit (30) for bundling the stacked matter on which the destination label is applied; and

- a central system control section (77) which includes a schedule table (121) for determining operation modes of said plurality of sorting apparatuses, and which operates each of said plurality of automatic sorting apparatuses based on said schedule table (121), characterized in that said central system control section comprises:

- a computer (91) connected to said plurality of sorting apparatuses for collecting actual system operation status data;

- a magnetic disk (97) connected to said computer (91) and storing the schedule table (121) which includes as said operation modes a field for designating a primary sorting mode in which the sorting is performed by the upper digits of the postal code and a secondary sorting mode in which the sorting is performed by the lower digits of the postal code, said schedule table further includes a field for the discrimination number of each sorting apparatus and a field for the start time of each sorting apparatus;

- a console (101) connected to said computer (91) and instructing operation of said plurality of sorting apparatuses;

- display means (103), connected to said computer (91), for displaying the amount of sorted postal matter and said schedule table (121);

- keyboard means (105), connected to said computer (91), for inputting instruction data for changing said schedule table (121); and

- printing means (99), connected to said computer (91), for printing statistics of the postal matter processed."

VI. The Appellant substantially argued as follows:

D2 disclosed a postal matter sorting system with several sorting apparatuses. The respective sorting apparatuses could operate alternately in a primary or secondary sorting mode aiming at a good exploitation of the available sorting apparatuses.

According to D4 parallel control of several essential units within a postal matter distribution system was implemented by means of a status table which included for each unit a discrimination number and a definition of the operating interval, i.e. outset and end of its activity. In view of the disclosed schedule table, D4 destroyed the main argument on which the Opposition Division based its reasoning in support of an inventive step for the claimed subject-matter. It was also known from D4 to use several tables if a single table was not sufficiently effective. Although D4 did not mention how to schedule several sorting apparatuses which alternately operate in a primary or secondary sorting mode, a person skilled in the art would try to get further information concerning the amount of postal information by estimating or counting along the lines indicated in D1 or D4, chapter 12.1.4.3 in order to optimise the system control by setting up and selecting appropriate schedule tables. Bearing in mind that according to the description of the patent in suit the embodiment did not operate fully automatically but required operators no inventive step could be seen in the very generally worded method according to Claim 1.

The subject-matter of Claim 6 consisted merely in a juxtaposition or association of known computer units functioning in their normal way and not producing any non-obvious working interrelationship.

Dependent Claims 2 to 5 did not contain any additional features which involved an inventive step when combined with the subject-matter of any claim to which they refer.

- VII. The Respondent agreed that D2 and D4 appeared to be the most relevant prior art documents. In comparison to the relatively concrete measures in the present Claim 1 of the patent in suit, D4 dealt only very generally with schedule tables and the control of conveyance means in a postal matter sorting system. D2 did not teach how several of the disclosed two-mode sorting apparatuses should be controlled for optimal cooperation in relation to varying amount of postal matter but concerned the control of stackers or bins around an individual sorting apparatus for its two-mode operation. Bearing in mind that the priority of the present patent was in 1981 inventive step of its subject-matter should not be judged on the basis of later knowledge.
- VIII. The Appellant requested that the decision of the Opposition Division be set aside and that the patent in suit be revoked in its entirety.
- IX. The Respondent requested that the appeal be dismissed and that the patent be maintained on the basis of the following documents:

Claims:                    1 and 6 as submitted at the oral proceedings dated 24 March 1992,

                                  2 to 5 according to EP-A-0 065 715;

Description: amended columns 1 to 3 as submitted at the oral proceedings dated 24 March 1992,

columns 4 to 9 according to EP-A-0 065 715;

Drawings: Figures 1 to 7 according to EP-A-0 065 715.

**Reasons for the Decision**

1. The appeal is admissible.
  
2. There is no objection under Article 123(2) and 123(3) EPC to the current version of the claims, description and drawings. In particular, present Claims 1 and 6 are based on granted Claims 1 and 6 in combination with features from columns 8 and 9 of EP-A-0 065 715. Granted Claims 6 and 1 were based on Claims 4, 5 and 6 as originally filed. Replacement of "bundling" by "departure times" takes into account in accordance with the description that the "departure time" of each piece of postal matter need not necessarily coincide with its bundling.
  
3. It is not in dispute that the method and system according to Claims 1 and 6 are new in respect of the submitted documents. Hence, the main issue to be decided by the Board is whether Claims 1 and 6 (above) involve an inventive step.
  - 3.1 In the opinion of the Board D2 represents the closest prior art. It discloses a postal matter sorting method and system with a plurality of identical sorting apparatuses which may operate alternately in a primary or secondary

sorting mode in order to distribute postal matter via a gate mechanism into a plurality of bins. The fact that D2 concerns an automatic postal matter sorting system implies the presence of a postal code reader.

D2 mentions as object a good exploitation of the postal matter sorting system. However, it tries to achieve this object by efficiently exploiting each sorting apparatus individually by an optimum control of stacking sections and preliminary stacking sections provided around the sorting apparatus, taking into consideration its rapid alternative use for preliminary and final distribution and without considering the work load of other sorting apparatuses.

3.2 Starting from D2, the objective problem underlying the subject-matter of Claim 1 of the patent in suit is seen in the provision of a postal matter sorting method for a letter sorting system comprising a plurality of sorting apparatuses with an automatic postal code reader, said method resulting in an improved efficiency of the whole sorting system by effectively permitting primary and secondary sorts of the postal matter throughout the system.

3.3 According to Claim 1 of the patent in suit this problem is essentially solved by a method permitting a central system control section to schedule the postal matter sorting system by determining which letter sorting machine or machines should be operated in a specific mode depending on the time and amount of the postal matter having regard to the architecture and conditions of the whole system and the operation status data of the available automatic sorting apparatuses. Reprogramming of the operating conditions of each sorting machine is facilitated by the use of a specific schedule table which additionally specifies the sorting mode of a sorting machine. The

claimed method is not fully automatic, according to the described embodiment operators may help in the implementation of the allotment determined by the central system control section or change the contents of the schedule table.

- 3.4 The Board accepts the Opposition Division's opinion that although the considered prior art shows some of the claimed features per se, it cannot jeopardise the inventive step of the claimed combination.

As already explained in paragraph 3.1 above, D2 does not hint at a method which determines which sorting apparatus should be operated depending on time and amount of postal matter.

Although D1 discloses a postal matter sorting system in which the amount of the postal matter may be automatically measured by determining its destination and the time at respective portions of the sorting system, this measuring result is only used for the control of a plurality of stacking sections and not for the control of a plurality of sorting apparatuses. Furthermore, the sorting apparatuses of D1 are specialised and cannot operate in different modes so that this further facility for an effective control is missing.

In contrast to D3, which discloses plan tables in production planning and control, D4 shows a schedule table for determining the activity of essential units within a postal matter system. The operating intervals, i.e. the outset and the end of activity, and the discrimination numbers of the essential units are specified therein.

However, there is no hint at defining operation modes in the schedule table. Especially for transport systems such as letter sorting machines, D4 recommends the automatic selection of an appropriate program from several available programs. Although D4 teaches the use of input quantities as control inputs it cannot be derived therefrom, nor from any of the other documents, to estimate the amount of postal matter in a primary and secondary sorting mode and calculate the time required for processing based on the estimated amount for performing an appropriate allotment of sorting modes and number of automatic two-mode sorting apparatuses in a postal matter sorting system.

Hence, the claimed method permitting the central system control section to schedule a postal matter sorting system by determining which letter sorting machines should be operated in a specific mode is not obvious in the light of the prior art documents, even considered in combination. Consequently, the subject-matter of Claim 1 involves an inventive step.

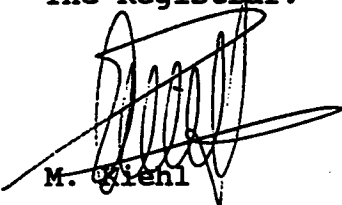
4. The same applies to Claims 2 to 5, which are dependent on Claim 1, and to the postal matter sorting system for carrying out the method in Claim 1 according to Claim 6. The prior art documents do not show or hint at a computer connected to a plurality of sorting apparatuses collecting actual system operation status data for determining the operation modes of said plurality of sorting apparatuses by means of a specific schedule table.

**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 in amended form on the basis of the documents indicated in paragraph IX above.

**The Registrar:**



M. Gienl

**The Chairman:**



**A. Hagenbucher**