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D E C I S I O N
of 10 August 2000

Case Number: T 0986/96 - 3.4.1

Application Number: 90916415.4

Publication Number: 0495908

IPC: G07B 17/02

Language of the proceedings: EN

Title of invention:
Method and apparatus for a mail processing system

Patentee:
M.A.I.L.CODE INC.

Opponent:
NEOPOST LTD

Headword:
-

Relevant legal provisions:
EPC Art. 56, 100(a)

Keyword:
"EPC Art. 56: Inventive step (yes)"

Decisions cited:
T 0011/81, T 0141/87, T 0099/89, T 0176/84, T 0195/84,
T 0229/85, T 0099/85

Catchword:
-



Case Number: T 0986/96 - 3.4.1

D E C I S I O N
of the Technical Board of Appeal 3.4.1
of 10 August 2000

Appellant:
(Proprietor of the patent)

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Decision under appeal:

**Decision of the Opposition Division of the
European Patent Office posted 30 September 1996
revoking European patent No. 0 495 908 pursuant
to Article 102(1) EPC.**

Composition of the Board:

Chairman: G. Davies
Members: G. Assi
M. G. L. Rognoni

Summary of Facts and Submissions

I. The appellant (patent proprietor) lodged an appeal, received on 31 October 1996, against the decision of the Opposition Division, dispatched on 30 September 1996, revoking the European patent No. 0 495 908 (application No. 90 916 415.4). The fee for the appeal was paid on 4 November 1996. The statement setting out the grounds of appeal was received on 30 January 1997.

An opposition had been filed against the patent as a whole, on the basis of Article 100(a) EPC, in particular on the grounds that the subject-matter of the patent was not patentable within the terms of Articles 52(1) and 56 EPC.

The Opposition Division held that the grounds of the opposition prejudiced the maintenance of the patent, having regard, *inter alia*, to the following documents:

(D1) JP-A-58-198732 with French translation submitted by the opponent,

(D2) FR-A-2 604 254 and

(D4) US-A-4 108 363.

II. The appellant requested that the decision under appeal be set aside and that the patent be maintained as granted.

The appellant also requested that oral proceedings be held.

III. The respondent (opponent) requested that the appeal be dismissed. Furthermore, he requested oral proceedings.

IV. Oral proceedings were held on 10 August 2000.

V. The wording of claim 1 of the granted patent reads as follows:

"1. An apparatus (10;510) for weighing mail pieces (21,23,25;521,523,525) and producing a postage label for each of said mail pieces (21,23,25;521,523,525) including appropriate postage charges, said apparatus (10;510) comprising: a bin (32;532) containing mail pieces (21,23,25;521,523,525); weighing means (30;530) attached to said bin (32;532) and producing, at an output, a weight signal proportional to the weight of said bin (32;532) containing mail pieces (21,23,25;521,523,525); stable weight detecting means (12;512) responsive to said weight signal and automatically producing, at an output, in response to a change in the number of mail pieces (21,23,25;521,523,525) contained in said bin (32;532) a piece weight signal corresponding to the weight difference between a present stabilized weight signal and an immediately preceding stabilized weight signal; and a printer (20;520) responsive to said piece weight signal, said printer (20;520) printing a postage label including postage costs corresponding to each piece weight signal received by said printer (20;520)."

The wording of claim 11 of the granted patent reads as follows:

"11. A method for weighing objects and producing a postage label for each of said objects (21,23,25;521,523,525) comprising the steps of situating said objects (21,23,25;521,523,525) to be weighed into a weighing bin (32;532) connected to a weighing device (30;530), said weighing device (30;530) producing at an output (22;522) a signal proportional to the weight of the bin (32;532) including the weight

of said objects (21,23,25;521,523,525); monitoring said signal until said signal stabilizes and storing said signal as an initial stable signal state; removing a first object (21;521) from within said bin; monitoring said signal and automatically detecting removal of said first object (21;521) from said bin (32;532) by monitoring said signal and detecting a first stable signal state; automatically determining the weight of said first object (21;521) and printing a postage label including postage cost for said first object based upon the difference between said initial stable signal state and said first stable signal state; removing a second object (23;523) from said bin; monitoring said signal and detecting removal of a second object (23;523) from within said bin (32;532) by monitoring said signal and detecting a second stable signal state; and automatically determining the weight of said second object (23;523) by determining the difference between first stable signal state and said second stable signal state and printing a postage label including postage cost for said second object (23;523) based upon its weight."

Claims 2 to 10 and 12 of the granted patent are dependent claims.

VI. The appellant's arguments may be summarised as follows.

Traditional mail processing systems required three sequential steps for each mail item, namely separating an individual mail piece, weighing that piece, and printing postage corresponding to the weight.

Improvements in prior art focused on increasing the handling speed of a mail piece through the three steps noted above, for instance by improving the weighing module or the printer. D2, which was considered to be the closest prior art document as it concerned a weighing module for use in a mailing system, still

relied on the traditional methods of mail processing. The present invention solved the problem of increasing the speed of mail processing by using differential weighing. Although this technique was known from D1 or D4, these documents dealt with food processing or vending. It was clear that mail pieces and food articles differed from one another and posed different problems to those responsible for designing equipment used in their processing. For example, the need for speed in processing food was secondary to the requirement of hygiene; moreover, food articles were often similar in shape, size and weight contrary to mail pieces which could be very different. Thus, the person skilled in the art, who was the expert in mail processing, would not look to the food processing art when attempting to find a solution to the problem of increasing the processing speed of mail items. Stating the contrary would imply an *ex post facto* analysis.

Furthermore, the person skilled in the art of mail processing would not consider increasing the size and weighing capacity of the weighing module to accommodate a plurality of mail items, as required in differential weighing, because this would reduce its sensitivity and responsiveness and hence increase the time needed to weigh each mail item accurately. The present invention, however, showed that the use of a larger weighing module coupled with the differential weighing technique indeed increased the speed of processing mail significantly. This constituted a surprising technical effect.

Substantial evidence of the inventiveness of the claimed invention could also be seen in the fact that, in spite of the years elapsed between the publication date of D4, or D1, and the priority date of the patent in suit, the persons skilled in the mail processing art had still not used differential weighing as claimed.

VII. The respondent's arguments may be summarised as follows.

Document D1 should be considered as the closest state of the art as it disclosed a module for weighing items, which worked on the basis of the claimed technique of differential weighing. It would be incorrect to start from D2 because this document concerned an automatic mail handling system whereas the patent in suit related to manual equipment according to the disclosure on page 3, lines 48 to 50, of the granted patent. The person skilled in the art, who was an expert in the fields both of weighing and mail processing, when having to solve the problem of reducing the loading time for a batch of mail pieces to be processed, as disclosed on page 2, lines 38 to 40, of the granted patent, would also look for suggestions in the broad technical field of weighing. He would then readily recognize that the principle of differential weighing represented a suitable solution for weighing mail items, even though postage charges, contrary to food pricing, did not depend directly on the weight of the mail piece.

Reasons for the Decision

1. The appeal is admissible.
2. Novelty

None of the cited documents discloses an apparatus or a method according to claims 1 and 11 of the granted patent, the subject-matters of which are therefore novel. This not being in dispute in the appeal proceedings, no further comments are required.

3. *Inventive step*

3.1 The questions relating to the relevant person skilled in the art, the technical areas of the invention, the closest state of the art, and the definition of the problem to be solved are disputed by the parties.

3.1.1 *Skilled person*

According to the established case law of the boards of appeal, even though the term "state of the art" as defined in Article 54(2) EPC could mean the whole of technology, for the purposes of Article 56 EPC the person skilled in the art is normally not assumed to be aware of patent or technical literature in a far removed area (see T 11/81). In appropriate circumstances, however, the knowledge of a team consisting of persons having different areas of expertise can be taken into account (see T 141/87 and T 99/89). This would be the case when, in particular, for the solution of a part of the problem an expert is appropriate, while for another part of the problem one would need to look to another expert in a different technical field.

The patent in suit relates to *"mail processing equipment and more specifically to mail processing equipment which weighs and posts mail or produces a mail and/or parcel manifest for a plurality of weighed mail items"* (see the patent, page 2, lines 5 to 7, as well as the claims), and deals with decreasing the costs of handling mail pieces. Since such costs are related to the time required for handling, in particular loading and unloading, and weighing the mail pieces, the present invention involves knowledge on the one hand of the mail processing equipment and on the other hand of the area of weighing in general. In other

words, the Board, in the present case, considers the skilled person as a team consisting of a first expert in the field of mail processing and a second expert acquainted with information in the field of weighing.

3.1.2 Technical areas

A general statement of what is to be regarded as included within the state of the art is given in T 176/84 (OJ EPO 1986,050). According to the headnote, *"the state of the art to be considered when examining for inventive step includes, as well as that in the specific field of the application, the state of any relevant art in neighbouring fields and/or a broader general field of which the specific field is part, that is to say any field in which the same problem or one similar to it arises and of which the person skilled in the art of the specific field must be expected to be aware."*

The same line was followed in T 195/84 (OJ EPO 1986, 121), the headnote of which reads as follows: *"The state of the art to be considered when examining for inventive step includes, as well as that in the specific field of the application, the state of any relevant art in neighbouring fields and the state of the art in a non-specific (general) field dealing with the solution of any general technical problem which the application seeks to solve in its specific field. Such solutions of general technical problems in non-specific (general) fields must be considered to form part of the general technical knowledge which a priori is to be attributed to those skilled persons versed in any specific technical field."*

Following this case law, the specific field in the present case is clearly that of mail processing, whereas the area of weighing systems may be considered as a neighbouring field in the sense that the technical problem of weighing items arises in both fields.

3.1.3 Closest state of the art

Whereas, according to the appellant, D2 should be considered as the closest state of the art, the respondent maintains that document D1 would represent a more appropriate starting point, because the contested patent relates to a general weighing problem applied to mail items.

D2 discloses a mailing system which includes a feeder for sequentially separating mail pieces from a batch, a weighing module for weighing the separated mail pieces and computing the postage amounts for each separated mail piece as a function of the weight, a postage meter responsive to the weighing module for metering each separate mail piece with the appropriate postage amount, and a transport system for sequentially transporting the separate mail pieces from the feeder to the weighing module and from the weighing module to the postage meter according to a given timing sequence.

D1 shows scales for weighing items like food articles, in particular meat, on the basis of the technique of differential weighing. This technique consists in determining the weight (w) of an item placed on the scales, removing a desired quantity of the item, measuring the weight (w') of the remaining part, and obtaining the weight of the removed quantity by computing the difference $w-w'$.

Generally, the prior art which has the most technical features in common with the claimed invention, which can perform the function of the invention, and which is in the same technical field, represents the closest prior art. Considering the claimed features of the present case and arguing that mail pieces should be regarded as particular examples of "items" to be weighed, the question whether D2 indeed has more technical features in common with the apparatus of claim 1 than D1 might appear controversial. However, there is no doubt that the mailing system of D2 rather than the scales for food articles shown in D1 performs the function of mail processing. Moreover, D2 and the apparatus of the present invention both belong to the same technical field of mail processing equipment. For these reasons, the Board considers that D2, rather than D1, should be regarded as the closest state of the art.

As to the respondent's further objection that D2 relates to an automatic mailing system, whereas the patent in suit concerns manual equipment, it is noted that the apparatus of D2 is also intended to operate in a manual mode in case of a batch of uniform mail, the weight of each mail piece being known (see page 30, lines 1 to 10).

3.1.4 Problem to be solved

In accordance with the problem-and-solution approach, the problem which the invention solves is identified by a comparison with the closest prior art.

Document D2 discloses a mailing system having improved capability for separating single mail pieces (see page 3, lines 12 to 15) and a modular weighing unit (see page 3, lines 7 to 11). On page 4, lines 9 to 17, however, it is envisaged that also the other units of the mailing system be modular, this having the

advantage that the physical connections between the different units are minimized so as to reduce the effects of vibration in the total system on the speed and accuracy of weighing. An asynchronous automatic operation allows the system to take advantage of improvements in weighing techniques which would reduce the weighing cycle time (see page 23, lines 2 to 9). An improved weighing time could also be achieved by taking advantage of the incremental nature of postal rates (see page 23, line 27, to page 24, line 25).

Summarizing, batches of mixed weight mail are processed with improved accuracy and reduced handling time by the known mailing system having a modular structure and operating in an automatic asynchronous mode with a separating step.

Starting from the mailing system according to D2, the skilled person will consider whether it would be possible to achieve even higher accuracies and shorter processing times. The problem to be solved by the present invention is thus related to the further improvement of these two characteristics of the known mail-processing system. This definition corresponds to that given by the appellant (see No. VI) and, at least indirectly, to that of the respondent (see No. VII) because the fact of reducing the loading time for a batch of mail implicitly entails a shorter total processing time. With regard to the problem as identified by the Opposition Division in the decision under appeal, No. 4 of the reasons, the Board disagrees with this formulation because, following the established case law (see T 229/85, OJ EPO 1987, 237 and T 99/85, OJ EPO 1987, 413), the technical problem to be solved must be so formulated as not to contain

pointers to the solution. Indeed, looking for "an alternative to weighing each mail piece" at least implicitly anticipates the solution of differential weighing with the risk of hindsight when the state of the art is assessed in terms of the problem so defined.

3.2 Combination of D2 and D1

Document D2 discloses an apparatus for weighing a batch of mail and producing a postage label for each of said mail pieces (see page 3, line 16, to page 4, line 8). The apparatus comprises, *inter alia*, a feeder, a bin for receiving the mail pieces, weighing means attached to the bin, and a printer. In operation, a batch of mail is supplied to the apparatus, each mail piece is separated and individually weighed, a weight signal thus being generated and stabilized (see page 23, line 31, to page 24, line 25), and a postage label is printed for each mail piece (see page 30, lines 25 to 30). Therefore, as the appellant points out, D2 describes an apparatus of the kind in which the operation is based on a conventional cycle including, for each item, the separating steps of separating an individual mail piece, generating a stable weight signal corresponding to that mail piece, and then printing the relevant postage information.

- 3.2.1 The subject-matter of claim 1 essentially differs from the known apparatus in that the weight of each mail piece is determined by differential weighing, i.e. it is obtained as the difference between the weights measured immediately before and after a single mail piece is removed from the bin.

The subject-matter of claim 1 solves the problem as stated above. The Board agrees with the appellant that, with regard to the known apparatus, a solution to the problem is not necessarily to be found in an

improvement of the weighing step. Indeed, better processing time and accuracy could also be achieved by suitable modifications, for instance, of the feeder, the transport system, or the printer unit. It should, moreover, be considered that, even assuming that the skilled person looks for an improvement of the weighing module, many different solutions are still possible besides that of differential weighing, for example, with regard to the processing hardware or the stabilizing means.

- 3.2.2 While it is true that the technique of differential weighing, used for food articles, was known at the priority date of the present invention (see D1), this does not mean that its application to the field of mail processing should be regarded as obvious.

The requirements for processing, in particular weighing, food and mail are basically different. First of all, the main aim of differential weighing of food, for example, apples, is not that of determining the weight of a single item. According to D1, sufficient items are removed from the scales until the desired quantity has been achieved. In mail processing, on the contrary, the weight of each single mail piece has to be determined with great precision. Moreover, whereas the tradesman may also be interested in the weight of the food not yet sold (see D1, last full paragraph on page 9 of the translation), the total weight of the mail still to be processed should not concern the operator of a mail processing apparatus.

The degree of precision required in the measurement constitutes a further essential difference. Whilst food is priced according to a continuous linear basis depending on the price per unit weight, postal charges are calculated on a stepped basis. For example, following an argument of the appellant in the letter of

27 September 1999, the costs for two letters and two pieces of meat weighing 0.99 oz and 1.01 oz, respectively, would be very different, as is shown in the following table.

	0.99 oz	1.01 oz	cost difference
US postage for letters	0.33 US	0.55 US	66.67%
meat (0.33 US /oz)	0.3267 US	0.3333 US	2%

It is clear that a tiny difference in weight, i.e. 0.2 oz, causes a considerable difference in price, i.e. 66.67% for mail against 2% for meat, which means that for mail weighing a much higher degree of precision is needed than for food over the whole range of the weighing module.

Furthermore, the stabilisation time of a mail weighing module may differ considerably from that of food scales, since speed is essential in mail processing but of secondary importance in food weighing.

3.2.3 It follows from the considerations above that the skilled person, looking for a solution to the stated problem in both fields of mail processing and weighing items, would have no incentive to apply the differential weighing technique according to D1 to the mailing system known from D2. This conclusion is confirmed by the fact that, in the mailing system of D2, the feature of separating each mail piece, which is presented as essential in the disclosure of D2, would have to be suppressed. In other words, the skilled person would have to depart from an essential part of the teaching of D2 to make the known apparatus suitable for differential weighing. The skilled person would also be discouraged from the use of the differential weighing for mail processing by the fact that a

weighing module with larger size and weight capability becomes necessary for receiving a complete batch of mail. A larger module could, in principle, have lower sensitivity and responsiveness, and, thus, would be considered as unsuitable.

Summarizing, it is conceivable that the skilled person, starting from the mailing system known from D2 could consider the weighing technique as disclosed by D1, but it could not be proved on the basis of the documents and arguments submitted by the respondent that the skilled person would also use this solution. Despite the years elapsed between the publication date of D1, or D4, and the priority date of the patent in suit, no document in the field of mail processing hinting at the possibility of using differential weighing could be produced by the respondent. With regard to the claimed subject-matter, this may be regarded as a further indicator of the presence of inventiveness.

- 3.3 For these reasons, the Board comes to the conclusion that the subject-matter of claim 1 involves an inventive step, having regard to the combination of D2 and D1.

Document D4 relates to a vending machine for food articles or other commodities, which uses the technique of differential weighing. Thus, D4 is not more relevant than D1, and the combination of D2 and D4 cannot lead to a different conclusion.

What applies to claim 1 must also apply, *mutatis mutandis*, to claim 11 which relates to a method corresponding to the claimed apparatus.

Order

For these reasons it is decided that:

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

The Registrar:

R. Schumacher

The Chairman:

G. Davies

