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**Datasheet for the decision
of 9 February 2011**

Case Number: T 1037/08 - 3.4.03

Application Number: 01120020.1

Publication Number: 1184815

IPC: G07D 9/06

Language of the proceedings: EN

Title of invention:
Coin wrapping machine

Applicant:
Laurel Precision Machines Co. Ltd.

Opponent:
-

Headword:
-

Relevant legal provisions:
-

Relevant legal provisions (EPC 1973):
EPC Art. 56

Keyword:
"Inventive step (yes) - after amendment"

Decisions cited:
-

Catchword:
-



Case Number: T 1037/08 - 3.4.03

D E C I S I O N
of the Technical Board of Appeal 3.4.03
of 9 February 2011

Appellant: Laurel Precision Machines Co. Ltd.
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 9 January 2008
refusing European patent application
No. 01120020.1 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: G. Eliasson
Members: T. Häusser
T. Karamanli

Summary of Facts and Submissions

- I. The appeal concerns the decision of the examining division refusing European patent application No. 01 120 020 for lack of inventive step having regard to the following documents:
D3: US 5,230,653 A,
D7: JP 10-105764 A.
- II. At the oral proceedings of 9 February 2011 before the board the appellant requested that the decision be set aside and a patent be granted on the basis of claims 1 to 18 according to the sole request filed during oral proceedings. The appellant also submitted new description pages 4 to 10 filed during oral proceedings.
- III. The wording of claim 1 reads as follows:
- "1. A coin wrapping machine comprising a denomination specifying means (82) for specifying a denomination of coins to be handled, a rotatable disk (4) for feeding coins one by one to a coin passage (5), a first coin sensor (21) provided in the coin passage (5) for detecting physical properties of coins, a second coin sensor (22) provided in the coin passage (5) downstream of the first coin sensor (21) for detecting physical properties of coins different from those to be detected by the first coin sensor (21), a first coin sorting and collecting means (30) provided in the coin passage (5) downstream of the second coin sensor (22) for sorting coins and collecting sorted coins, a second coin sorting and collecting means (35) provided in the coin passage (5) downstream of the second coin sensor (22) for sorting coins and collecting sorted coins, a third

coin sorting and collecting means (45) provided in the coin passage (5) downstream of the second coin sensor (22) for sorting coins and collecting sorted coins, a discriminating means (90) for discriminating, based on the physical properties detected by the first coin sensor (21) and the second coin sensor (22), whether or not a coin is acceptable, the denomination of the coin when it is acceptable and whether or not the denomination of the coin coincides with that specified by the denomination specifying means (82),

the coin wrapping machine further comprising a coin stacking and wrapping apparatus (60) connected to a downstream end portion of the coin passage (5) for stacking and wrapping coins and an operation mode selecting means (84) for selecting a counting mode for counting coins or a wrapping mode for wrapping coins, and

wherein the discriminating means (90) being made responsive to inclusion of new issue coins and past issue circulating coins among coins of the denomination specified by the denomination specifying means for further discriminating whether the coin is a new issue coin or a past issue circulating coin, the first coin sorting and collecting means (30) being made responsive to such inclusion for sorting and collecting coins discriminated unacceptable by the discriminating means (90) when the counting mode is selected by the operation mode selecting means (84), and the second coin sorting and collecting means (35) being made responsive to such inclusion for sorting and collecting one kind between the new issue coins and the past issue circulating coins,

wherein the third coin sorting and collecting means is made (45) responsive to inclusion of new issue coins and past issue circulating coins among coins of the denomination specified by the denomination specifying means (82) for sorting and collecting the other kind between the new issue coins and the past issue circulating coins and

wherein the second coin sorting and collecting means (35) is made responsive to inclusion of new issue coins and past issue circulating coins among coins of the denomination specified by the denomination specifying means (82) for sorting and collecting coins of denominations different from that specified by the denomination specifying means (82) in addition to said one kind between the new issue coins and the past issue circulating coins."

IV. The appellant argued essentially as follows:

D3 concerned a coin *sorting* apparatus and did not constitute a realistic starting point for improving a coin *wrapping* machine: as all remaining coins were collected in the last collecting box 36 of the device of D3, a wrapping device could not merely be provided at the end of the coin passage. The integration of a wrapping device in D3 was therefore not obvious for the skilled person. The closest prior art was thus D7.

The recognition that it was desirable to sort old issue coins from new issue coins already contributed to the presence of inventive step. Furthermore, the skilled person received no motivation from the prior art to

adapt D7 in such a way as to arrive at the invention. In particular, there was no obvious way to combine the devices of documents D3 and D7.

The specific advantage of collecting coins in the second collecting means, of which the denominations were different from the specified one, in addition to either the new issue coins or the past issue coins, was to achieve a sorting with a minimum number of collecting means.

Reasons for the Decision

1. Admissibility

The appeal is admissible.

2. Amendments

Claim 1 is based on claims 1 to 3 as originally filed.

Dependent claims 2 to 18 are based on original claims 7 to 23, respectively. The description has been brought into conformity with the amended claims supplemented with an indication of the relevant content of the prior art.

Accordingly, the board is satisfied that the amendments comply with the requirements of Article 123(2) EPC.

3. Novelty

3.1 Document D7

3.1.1 Document D7 discloses a coin sorting device capable of sorting coins of a specified denomination from a plurality of mixed coins (paragraph [0001]). Coins are delivered from a coin supply device 1 comprising a rotary disc 10 one at a time to a coin feed path 2 (paragraphs [0015] to [0016]). On the coin feed path a coin discrimination unit 4 is arranged, comprising a magnetic sensor 41 for detecting magnetic properties of the coins, a first optical sensor 42 for detecting the diameter of the coins, and a second optical sensor 43 for detecting irregularities of the peripheral surface of the coins. The discrimination unit ascertains the genuineness, denomination, and number of coins from the detection results of the sensors (paragraph [0020]).

Downstream of the coin discrimination unit 4, a coin sorting unit 6 is provided comprising a denomination setting drive mechanism 67. The latter is used to set the width dimension of part of the coin feed path to about the diameter of the designated coins. As a result, only the coins of the designated denomination always remain supported as they are transported down the coin feed path, whereas both coins with smaller diameter and coins with larger diameter are unsupported on part of the coin feed path and drop down a sorting port 65a (paragraphs [0023], [0035], and [0037]).

When the discrimination unit 4 determines that a coin is not genuine, the denomination setting drive mechanism 67 is driven to set the sorting port 65a so

large to ensure that the unacceptable coin drops into the sorting port 65a (paragraph [0032]).

A distribution unit 7 is arranged downstream of the coin sorting unit 6 allowing the designated coins to be either stacked and packaged ("packaging processing") or counted and allowed to drop below the coin feed path ("totalling processing").

- 3.1.2 Therefore, document D7 discloses, using the terminology of claim 1, a coin wrapping machine comprising a denomination specifying means for specifying a denomination of coins to be handled (as the coin discrimination unit 4 determines the denomination of the coins - see paragraph [0020] - it is implicit that these denominations are specified beforehand), a rotatable disk (10) for feeding coins one by one to a coin passage (coin feed path 2), a first coin sensor (magnetic sensor 41) provided in the coin passage (2) for detecting physical properties of coins, a second coin sensor (optical sensor 42) provided in the coin passage (2) downstream of the first coin sensor (41) for detecting physical properties of coins different from those to be detected by the first coin sensor (41), a first coin sorting and collecting means (coin sorting unit 6) provided in the coin passage (2) downstream of the second coin sensor (42) for sorting coins and collecting sorted coins, a discriminating means (coin discrimination unit 4) for discriminating, based on the physical properties detected by the first coin sensor (41) and the second coin sensor (42), whether or not a coin is acceptable and the denomination of the coin when it is acceptable (paragraph [0020]) and whether or not the denomination of the coin coincides with that

specified by the denomination specifying means (by ascertaining the denomination of the coin - see paragraph [0020]), the coin wrapping machine further comprising a coin stacking and wrapping apparatus connected to a downstream end portion of the coin passage (2) for stacking and wrapping coins (paragraph [0030]) and an operation mode selecting means for selecting a counting mode for counting coins ("totalling processing") or a wrapping mode for wrapping coins ("packaging processing") (paragraph [0029]).

3.1.3 Document D7 does not disclose the following features of claim 1:

- (i) a second coin sorting and collecting means provided in the coin passage downstream of the second coin sensor for sorting coins and collecting sorted coins,
- (ii) a third coin sorting and collecting means provided in the coin passage downstream of the second coin sensor for sorting coins and collecting sorted coins,
- (iii) wherein the discriminating means being made responsive to inclusion of new issue coins and past issue circulating coins among coins of the denomination specified by the denomination specifying means for further discriminating whether the coin is a new issue coin or a past issue circulating coin,
- (iv) the first coin sorting and collecting means being made responsive to such inclusion for sorting and collecting coins discriminated unacceptable by the discriminating means

- when the counting mode is selected by the operation mode selecting means, and
- (v) the second coin sorting and collecting means being made responsive to such inclusion for sorting and collecting one kind between the new issue coins and the past issue circulating coins,
 - (vi) wherein the third coin sorting and collecting means is made responsive to inclusion of new issue coins and past issue circulating coins among coins of the denomination specified by the denomination specifying means for sorting and collecting the other kind between the new issue coins and the past issue circulating coins and
 - (vii) wherein the second coin sorting and collecting means is made responsive to inclusion of new issue coins and past issue circulating coins among coins of the denomination specified by the denomination specifying means for sorting and collecting coins of denominations different from that specified by the denomination specifying means in addition to said one kind between the new issue coins and the past issue circulating coins.

3.1.4 The subject-matter of claim 1 is thus new over document D7.

3.2 Neither document D3 nor the remaining cited prior art documents are closer to the subject-matter of claim 1 than document D7. Claims 2 to 18 are dependent on claim 1 providing further limitations.

Accordingly, the subject-matter of claims 1 to 18 is new (Article 52(1) EPC and Article 54(1),(2) EPC 1973).

4. Inventive step

4.1 The present application is directed to a coin wrapping machine (see the description, page 3, last paragraph). Document D7 is directed to the same purpose as the application (D7, paragraph [0046]) and is regarded to provide the closest prior art.

4.2 The subject-matter of claim 1 differs from the device of D7 in comprising the features (i) to (vii) (point 3.1.3 above). The effect of these features is to allow the machine to separate new issue coins from past issue coins into separate collecting means. Furthermore, the collection of coins of different denomination together with the new or past issue coins in the second collecting means permits a minimum number of collecting means to be used.

The objective technical problem is thus to provide a coin wrapping machine that is able to efficiently sort new issue coins and past issue coins of the same denomination, and coins of a different denomination.

4.3 The recognition that it was desirable to sort old issue coins from new issue coins already contributed - according to the appellant - to the presence of inventive step.

It is known that a new 500¥ coin had been issued in order to avoid coin counterfeiting (see the

description, page 2, last paragraph - page 3, first paragraph). It is also known that in the 1970's, when its metal value exceeded its nominal value, the German 5DM coin made of a silver-copper alloy was replaced by a new 5DM coin made of an alloy known by the trade mark *Magnimat*. It can therefore be regarded to be as commonly known to the skilled person - the person skilled in the art of coin wrapping machines - that coins of a given denomination are sometimes newly issued. In these circumstances it would be obvious for the skilled person to consider sorting new issue coins and past issue coins from each other.

The posing of the problem does therefore, in the board's judgement, not represent a contribution to the inventive merits of the solution.

- 4.4 The skilled person would first consider whether D7 allowed any solution to the problem posed. In D7 the unacceptable coins are collected using the sorting port 65a based on the measurements of the sensors 41, 42, and 43 (paragraph [0032]). As it would only require re-programming of the discrimination unit 4, D7 lends itself to a broader use of the sorting port 65a not only for unacceptable coins but also for some desired coins, for example, the old issue coins and coins of a different denomination. In order to collect the new issue coins at the end of the coin feed path, the denomination setting drive mechanism 67 would be set to the diameter of the new issue coins. Two more rounds of re-circulating the coins collected, using the sorting port 65a and re-programming of the discrimination unit 4, would then lead to separate collections of the old issue coins and the coins of a different denomination.

In this way the skilled person would thus arrive at a coin wrapping machine that is able to sort new issue coins and past issue coins of the same denomination, and coins of a different denomination - albeit inefficiently as it would require three rounds of circulating coins through the device.

- 4.5 In the decision under appeal it is argued (point 2) that - in view of document D3 - the skilled person would regard it as a normal option to include in the coin processing machine of document D7 a plurality of sorting holes, the appropriate labelling of these sorting holes, and the classification of the sensed coins in a plurality of classes.

Document D3 discloses a coin sorting apparatus comprising a rotary disk 1 feeding coins into a coin passage with a magnetic sensor 6 and an optical sensor 7 (column 5, line 59 to column 6, line 12). The apparatus comprises a CPU 60 for judging, based on the comparison of the sensor signals with reference data, whether the coins are genuine and their denominations (column 12, lines 3-8). Furthermore, the apparatus comprises in the coin passage an unacceptable coin collecting opening 20 above a coin box 30 and collecting means 40. Further along the coin passage are first to fifth sorting openings 21-25 with corresponding coin boxes 31-35 and collecting means 41-45 and a final coin collecting opening 26 and coin box 36 (column 6, line 52 to column 7, line 12; column 14, line 48 to column 17, line 35). When the CPU has judged that a coin is not acceptable, it outputs a drive signal to actuate the collecting means 40 in order to collect the coin in the coin box 30, whereas when the

CPU has judged that a coin has one of the first to fifth denominations, it outputs a drive signal to actuate the corresponding sorting means in order to collect the coin in the corresponding coin box (column 10, lines 18-29; column 14, line 48 to column 17, line 40). Coins which are not collected in any of the coin boxes 30-35 are considered damaged coins and fall through the coin collecting opening 26 into the coin box 36 (column 24, lines 42 to 55).

The apparatus of D3 achieves therefore a complete sorting of the coins into unacceptable coins, coins of the various denominations, and damaged coins, each of the categories of coins being collected in separate coin boxes.

The apparatus of document D7, on the other hand, achieves - using the single sorting port 65a - to collect unacceptable coins together with coins having a diameter which is either larger or smaller than the diameter of the designated coins, whereas the designated coins are transported to the end of the coin passage for counting or packaging (see point 3.1.1 above). This is achieved by a specially designed guide block which is adjusted to let through only coins with the desired diameter. Only in case an unacceptable coin has been detected is it necessary to move the guide block.

Hence, since the construction of the sorting and collecting means in the apparatus of document D3 is entirely different from that of D7, the board finds that the sorting apparatus of D3 is incompatible with the apparatus of D7. The combination of the teachings

of the two documents is therefore not regarded to be obvious for the skilled person.

- 4.6 The remaining prior art documents on file do not contain any teaching which would lead the skilled person to the subject-matter of claim 1, which is therefore not considered to be obvious.

The subject-matter of claims 2 to 18 is also not considered obvious as these claims are dependent on claim 1.

Accordingly, the subject-matter of claims 1 to 18 involves an inventive step (Article 52(1) EPC and Article 56 EPC 1973).

5. Other requirements of the EPC and conclusion

The description has been brought into conformity with the amended claims and supplemented with an indication of the relevant content of the prior art in order to comply with the requirements of Article 84 EPC 1973 and Rule 27(1)(b) EPC 1973. These requirements of the EPC are therefore also satisfied.

In view of the above the sole request is allowable.

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 grant a patent in the following version:

Claims: 1 to 18, filed during oral proceedings on 9 February 2011.

Description: pages 2, 2a, 2b filed with a letter dated 29 July 2005, pages 3, 11-111 as originally filed, pages 4-10 filed during oral proceedings on 9 February 2011.

Drawings: sheets 1-10 as originally filed.

The Registrar:

The Chairman:

S. Sánchez Chiquero

G. Eliasson