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D E C I S I O N
of 31 January 2002

Case Number: T 0652/00 - 3.2.7

Application Number: 95105394.1

Publication Number: 0677379

IPC: B31D 5/00

Language of the proceedings: EN

Title of invention:
Apparatus for converting sheet-like stock materail into cut sections of dunnage

Patentee:
RANPAK CORPORATION

Opponent:
01: NATUREMBAL
02: Storopack Hans Reichenecker GmbH & Co.

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0652/00 - 3.2.7

D E C I S I O N
of the Technical Board of Appeal 3.2.7
of 31 January 2002

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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 24 May 2000 rejecting the opposition filed against European patent No. 0 677 379 pursuant to Article 102(2) EPC.**

Composition of the Board:

Chairman: A. Burkhart
Members: K. Poalas
J. H. P. Willems

Summary of Facts and Submissions

I. The Appellants (Opponents I and II) lodged an appeal against the decision of the Opposition Division rejecting the oppositions against the patent No. 0 677 379.

II. Oppositions were filed against the patent as a whole and based on Article 100(a) EPC (lack of inventive step) and Article 100(c) EPC (extension beyond the content of the application as filed). The Opposition Division held that the grounds for opposition according to Article 100(a) and (c) EPC did not prejudice the maintenance of the patent as granted.

The Opposition Division referred to the following documents:

D1: US 4 699 609 A

D2: US 3 465 632 A

D3: US 3 695 133 A

D4: US 2 786 399 A.

III. Independent claim 1 of the patent in suit as granted reads as follows:

"1. An apparatus for converting sheet-like stock material into cut sections of dunnage, said machine comprising:

a. a frame (36) including an end plate (46) having an outlet opening (48);

b. a forming assembly (52), mounted to the frame (36), for forming a continuous strip of dunnage (30) which travels through the outlet opening (48) in the end plate (46);

c. a stock supply assembly (50), located upstream of the forming assembly (52) which supplies the sheet-like stock material to the forming assembly (52);

d. a pulling/connecting assembly (54), mounted to the frame (36), which pulls the sheet-like stock material (22) from the stock supply assembly (50);

e. a motor (55), which powers the pulling/connecting assembly (54); and

f. cutting assembly (56; 56'), mounted to the frame (36), which cuts the continuous strip of dunnage into cut sections of a desired length, wherein said cutting assembly (56; 56') includes:

f1. cutting means (162, 289) movably mounted to a downstream side of the end plate (46) adjacent to the outlet opening (48) to cut the continuous strip of dunnage as it travels therethrough,

f2. motor means (57, 196) including a motor (57) mounted to the frame (36) upstream of the end plate (46), said motor means (57, 196) being, through an opening in the end plate (56) operatively connected with said cutting means to transfer rotational motion from the motor (57) to the cutting means (162, 289);

wherein

g. the pulling/connecting assembly motor (55) and the cutting assembly motor (57) are positioned at substantially the same level as the forming assembly (52) and on respective sides thereof."

IV. Oral Proceedings before the Board of Appeal took place on 31 January 2002.

(i) During the Oral Proceedings Appellant II being the only party raising the objection under Article 100(c) EPC stated that it did not maintain the ground of opposition according to Article 100(c) EPC.

(ii) The Appellants requested that the decision under appeal be set aside and the patent revoked.

(iii) The Respondent (Patent Proprietor) requested that the appeals be dismissed (main request), or as an auxiliary request that the decision under appeal be set aside and the patent maintained on the basis of claims 1 to 12 filed as an auxiliary request on 28 December 2001.

V. During the appeal proceedings the Appellants referred to the following new documents

A1: US 3 603 216 A,

A2: US 3 799 039 A,

A3: US 4 237 776 A,

D5: DE 29 16 518 C2 and

D6: US 4 181 070 A

and argued essentially as follows:

The closest prior art as represented by document D1 refers to an apparatus for converting sheet-like stock material into cut sections of dunnage, said machine comprising the features (a) to (f1) of claim 1 of the patent in suit. Since the solenoid 58 of D1 causes the shaft 54 to rotate, the feature (f2) of claim 1 of the patent in suit is also known from D1.

Starting from the above disclosure, the technical problem to be solved by the invention defined in claim 1 of the patent in suit is objectively to be regarded as making the machine known from document D1 more compact.

Documents A1, A2 and A3 show that the problem of achieving a compact reconfiguration and orientational flexibility of a cushioning conversion machine was known to the person skilled in the art. The person skilled in the art, realising that in the machine disclosed in document D1 a considerable amount of space is wasted under the forming and pulling/connecting assembly, would also consider it an obvious option to make the machine according to document D1 more compact by positioning the motors in a manner as defined by feature (g) of claim 1 of the patent in suit.

Moreover, documents D5 and D6, which are directed to the problem of compact reconfiguration of paper working machines and which suggest, as a solution to this

problem, positioning motors on either side of a paper working station, render it obvious to provide in the apparatus disclosed in document D1 the feature (g).

Therefore, the subject-matter of claim 1 of the patent is suit does not involve an inventive step.

VI. The Respondent argued essentially as follows:

In claim 1 of the patent in suit, the wording "rotational motion from the motor" unambiguously teaches the person skilled in the art that the rotational motion originates at the motor itself, which is not the case with the solenoid of document D1. Therefore, feature (f2) of claim 1 of the patent in suit is not present in the apparatus known from document D1.

Document D5 is directed to a cardboard cutting machine having no forming step nor any forming assembly and, therefore, document D5 cannot suggest positioning drive motors with respect to the forming assembly according to feature (g) of claim 1 of the patent in suit. Document D6 relates to a machine for the manufacture of paper filters having no cutting assembly motor and does not address the problem of compactness. Therefore, document D6 cannot suggest the features (f2) and (g) of claim 1 of the patent in suit.

None of the documents A1 to A3 provide any hints for modifying the machine of D1 in accordance with the features (f2) and (g) of claim 1 of the patent in suit.

The invention according to claim 1 of the patent in suit proposes a cushioning conversion machine having a

operational flexibility necessary to accommodate different packaging requirements. Such a device is not obvious in the light of the prior art documents.

Reasons for the Decision

1. *Main request of the respondent*

1.1 Inventive step

1.1.1 Closest prior art

The closest prior is represented by the cushioning conversion apparatus according to Figures 1, 2 and 6, in connection with column 4, line 48 to column 5, line 68 of the description, of document D1. This cushioning conversion apparatus comprises the features (a) to (f1) of claim 1 of the patent in suit. The cutting assembly has an electric solenoid 58 mounted on an upstream side of the machine's back panel 56 and the cutting means are pivotally coupled to the downstream side of the back panel. A shaft extends through an opening in the back panel and is connected at its downstream end to the cutting means and at its upstream end to a lever 66 which in turn is coupled to the solenoid plunger. Upon downward movement of the solenoid plunger, the shaft rotates in a short arc thereby moving the cutting means upward and, upon upward movement of the solenoid plunge, the shaft rotates in short arc in the opposite direction to move the cutting means downward.

The solenoid 58 extends in a vertical direction downwards from the forming assembly 26 and therefore

occupies a certain amount of space within the cushioning conversion apparatus.

Furthermore, the motor 42 and the gear speed reducer 40 of the pulling/connecting assembly of said cushioning conversion machine are arranged below the chute 22 of the forming assembly.

The arrangement of the above mentioned specific driving means, ie the solenoid 58 and the motor 42, placed at specific positions within the cushioning conversion apparatus of document D1, results in a rather bulky construction of said apparatus. Therefore, the operational flexibility of the known apparatus is low.

1.1.2 Problem underlying the invention of the patent in suit

With respect to the closest prior art, the problem underlying the invention can be seen in providing a cushioning conversion apparatus having a higher operational flexibility.

1.1.3 Solution

This problem is solved by the cushioning conversion apparatus according to claim 1 of the patent in suit in that it comprises motor means including a motor mounted to the frame upstream of the end plate, said motor means being, through an opening in the end plate operatively connected with the cutting means to transfer rotational motion from the motor to the cutting means (feature (f2)), and in that the pulling/connecting assembly motor and the cutting assembly motor are positioned at substantially the same level as the forming assembly and on respective sides

thereof (feature (g)).

The replacement of the solenoid 58 of document D1 by a rotational cutting assembly motor as defined in feature (f2) in claim 1 of the patent in suit in combination with the arrangement of said cutting assembly motor together with the pulling/connecting assembly motor at substantially the same level as the forming assembly and on respective sides thereof, achieve an improved compactness and a higher orientational flexibility of the apparatus, which result in a higher operational flexibility of the apparatus.

1.1.4 The prior art documents under consideration do not render obvious the aforementioned solution for the following reasons:

The fact that the feature (g) of claim 1 of the patent in suit is not included in the apparatus of document D1 was undisputed.

The Appellants argued that feature (f2) of claim of the patent in suit was already present in document D1, since the shaft 45 transfers a rotational motion from the solenoid 58 to the cutting means.

The Board can not agree with this argument, because claim 1 of the patent in suit clearly distinguishes between "motor means (57, 196)", disclosing both the cutter motor (57) and the shaft (196), and the cutter "motor (57)", cf. column 12, lines 15 to 24 of the patent in suit. Therefore, it is clear to the skilled person that the "rotational motion from the motor (57)" mentioned in claim 1 of the patent in suit originates

directly at the motor (57) itself.

Furthermore, document D1 disclosing the solenoid 58 mounted on the back panel 56, see also point 1.1.1 above, cannot suggest mounting a rotational cutting assembly motor on the frame at a position upstream of the end plate.

Therefore, feature (f2) of claim 1 of the patent in suit is neither disclosed nor suggested by document D1.

Therefore, as document D1 neither discloses nor suggests features (f2) and (g) of claim 1 of the patent in suit, it does not lead the person skilled in the art to the solution according to claim 1 of the patent in suit.

Document A1 describes a cushioning dunnage conversion machine having the pulling/connecting assembly motor 62 arranged below the forming assembly 16 and having no motor for the cutting assembly 76, which is manually operated.

The disclosure of document A1, with respect to features (f2) and (g) of claim 1 of the patent in suit, does not exceed the disclosure of the above-mentioned D1.

The remark in column 4, lines 66 to 70, where it is expressed that the machine can operate in horizontal and in vertical orientation, does not change this assessment. Even if orientational flexibility was addressed in the above mentioned part of document A1, this document does not provide any hint that this objective could be achieved by positioning the motor 62

at a plane different from that disclosed in document A1.

Thus, the application of the teaching of document A1 to the cushioning conversion machine according to document D1 does not lead to the subject-matter of claim 1 of the patent in suit.

Document A2 describes a cushioning dunnage conversion machine similar to the one known from document A1. In the abstract of document A2 it is stated that the machine disclosed in document A2 is of a compact nature. However, there is no reference in document A2 which could suggest the features (f2) and (g) of claim 1 of the patent in suit.

Thus, the application of the teaching of document A2 to the cushioning conversion machine according to document D1 does not lead to the subject-matter of claim 1 of the patent in suit.

Document A3 teaches that, in order to provide a compact cushioning dunnage conversion mechanism, a transfer cart 102 should be detachably arranged at a cushioning dunnage conversion machine in order to transport dunnage pads from the machine to the place they are needed. However, document A3 does not provide any hints for compacting the machine known from document D1 in accordance with the features (f2) and (g) of claim 1 of the patent in suit.

Document D5 describes a machine for cutting cardboard having cutting motors 27, 28 positioned at the opposite sides of the conveyor belt. The problem addressed by document D5 is to provide a cost-efficient cardboard

cutting machine with limited dimensions, which is capable of flexible adaptation so as to cut the web of cardboard into blanks of different size (cf. column 2, lines 20 to 25). Document D5 discloses neither a forming assembly nor a pulling/connecting assembly with a corresponding motor, which is arranged at the same level as a cutting motor. Since document D5 does not even disclose the individual technical parts of feature (g) of claim 1 of the patent in suit, it cannot suggest the specific arrangement of those parts as defined in feature (g) of claim 1 of the patent in suit.

Document D6 refers to a variable pleat filter paper pleater. Document D6 does not disclose a cutting assembly motor, as requested by the features (f2) and (g) of claim 1 of the patent in suit. Instead, the cutting of the sequence of pleats is performed manually on table 29. Moreover, document D6 does not address the problem "compact machine construction". Therefore, document D6 cannot provide any teaching for the person skilled in the art how to arrange such a cutting assembly motor in a cushioning conversion machine with respect to a forming assembly or a pulling/connecting assembly motor, in order to achieve a compact machine construction.

1.1.5 Therefore, the subject-matter of claim 1 of the patent in suit as granted involves an inventive step. The subject-matter of claims 2 to 6 which are appendant to this claim 1 similarly involves an inventive step.

2. Since the main request of the Respondent is allowable, the auxiliary request of the Respondent that the patent be maintained in amended form did not have to be

considered.

Order

For these reasons it is decided that:

The Appeals are dismissed.

The Registrar: The Chairman:

L. Martinuzzi A. Burkhart