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D E C I S I O N
of 17 February 2004

Case Number: T 0015/02 - 3.2.7

Application Number: 95116074.6

Publication Number: 0706977

IPC: C03B 7/10

Language of the proceedings: EN

Title of invention:
Glass gob shearing apparatus

Applicant:
OWENS-BROCKWAY GLASS CONTAINER INC.

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56, 84. 123(2)

Keyword:
"Amendments - added subject-matter (no)"
"Claims - clarity (yes)"
"Novelty (yes)"
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-



Case Number: T 0015/02 - 3.2.7

D E C I S I O N
of the Technical Board of Appeal 3.2.7
of 17 February 2004

Appellant: OWENS-BROCKWAY GLASS CONTAINER INC.
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 9 August 2001
refusing European application No. 95116074.6
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: A. Burkhart
Members: H. E. Hahn
E. Lachacinski

Summary of Facts and Submissions

- I. The appellant (applicant) lodged an appeal against the decision of the Examining Division to refuse the European patent application No. 95 116 074.

The Examining Division held that the subject-matter of the independent apparatus claim 1 had been amended by generalization of the only disclosed specific embodiment of adjusting means (as depicted in figure 1 and claim 3 as originally filed), whereby further embodiments not originally disclosed were then encompassed by claim 1, so that claim 1 extended beyond the content of the application as originally filed.

- II. With letter of 27 January 2004 the appellant requested to set aside the decision under appeal and to grant a patent on the basis of claim 1 of the single request as submitted with the same letter in combination with the claims 2 to 10 and description page 4 as submitted with the letter dated 19 January 2004, and with the description pages 1 to 3, 5 to 9 and drawing sheets 1/4 to 4/4 as submitted with the letter dated 1 November 2001.

- III. The most relevant document of the prior art is considered to be:

D1: EP-A-0 164 902

- IV. The independent claim 1 as submitted with letter of 27 January 2004 under consideration reads as follows:

"1. Apparatus for shearing at least one stream of molten glass from a glass feeder into individual gobs of molten glass for processing into glass containers in a forming machine, said apparatus (10) comprising:

first shearing means (32) comprising a first carriage (12) and at least one knife element;

second shearing means (34) comprising at least a second carriage (14) and one knife element;

mounting means (16, 18, 20) for mounting said first shearing means (32) for motion toward and away from said second shearing means (34) and for mounting said second shearing means (34) for parallel motion toward and away from said first shearing means (32);

a unidirectionally acting serving motor (36); and
crank drive means (39, 46) with connecting means for connecting said motor (36) to said first shearing means (32) and to said second shearing means (34) for simultaneously moving said first shearing means (32) and said second shearing means (34) toward one another and then away from one another;

said crank drive means (39, 46) including
a rotating arm (39) and a first connecting rod (46) making an oscillating motion, characterized in that

said connecting means includes
a bell crank (22) which has a central axis (E) and two arms (24, 28) being diametrically opposed to one another in their positions in relation to the bell crank (22) where said first connecting rod (46) connects said rotating arm (39) to said bell crank (22) for imparting oscillating motion to said bell crank (22) about its central axis (E),

where the amplitude of the oscillating motion of the bell crank (22) depends from the driving stroke of said crank drive means (39, 46); and

where the driving stroke of the crank drive means (39, 46) depends from the position of a bracket (40) relative to a pivot axis (F) thereof,

said connecting means further includes

a second connecting rod (26) connecting said bell crank (22) to said first shearing means (32) for imparting reciprocating motion to said first shearing means, and third connecting rod means (30) connecting said bell crank (22) to said second shearing means (34) for imparting reciprocating motion to said second shearing means;

said second connecting rod means (26) and said third connecting rod means (30) being pivotally attached to said arms (24, 28) of said bell crank (22)."

V. The appellant argued essentially as follows:

The rotating arm (39) which has no explicit basis in the application as originally filed can be derived from figures 1 and 2. All other features of claim 1 have either an explicit basis or can be conclusively derived from the application as originally filed. Thus, claim 1 meets the requirements of Article 123(2) EPC.

Document D1 represents the closest prior art. The shaft (40) of the shearing device according to document D1, though not directly driven by motor (45), corresponds to the motor shaft of motor (36) in the present application rather than to the bell crank (22). The members (41, 47) form a first crank drive and the

members (42, 48) form a second one which are operated parallel to one another, yet with opposing movements. The arrangement according to the present application shows a series connection between the first crank drive formed by rotating arm (39) and connecting rod (46), and a specially formed second crank drive termed "bell crank" which has three arms. Whereas the first crank drive (39, 46) produces a simple oscillation movement, the bell crank (22) makes two oscillating movements which are opposed to one another. Thus the structure is different and so are the effects which can be produced therewith. The Examining Division acknowledged in the communication of 1 July 1999 (cf. item 1, paragraph 1, and item 2, paragraph 2, sentence 1) that the crank drive means with bell crank results in "said oscillating motion having a stroke which depends from the position of said crank drive means relative to said bell crank". Document D1 does neither mention the stroke and overlap of the knife elements, and thus indirectly the contact time between the share knife elements in the glass streams, nor any possibility to adjust such contact time, particularly during the use thereof, and hence document D1 cannot give any hint to the solution of said problem. Thus, the subject-matter of claim 1 involves an inventive step.

Reasons for the Decision

1. *Original disclosure (Article 123(2) EPC)*

Claim 1 is based on claim 1 as originally filed and the additional features thereof can either explicitly be found in or derived from the originally filed

specification (cf. figures 1 to 2; in combination with page 3, lines 30 to 35; page 4, lines 12 to 14; page 5, lines 22 to 28; and page 8, lines 13 to 16).

The amendments of dependent claim 2 can be derived from page 4, lines 4 to 14 in combination with figure 1; and page 3, line 33 to page 4, line 1 of the originally filed specification.

The claims 3 to 10 are based on the claims 3 to 10 as originally filed.

Therefore the claims 1 to 10 meet the requirements of Article 123(2) EPC.

2. *Clarity (Article 84 EPC)*

As can be readily derived from the object underlying the application (cf. page 2, line 29 to page 3, line 9), i.e. to provide a parallel shear device whose "time under glass" can be more closely controlled regardless of forming machine speed or speed changes and whose "time under glass" can be quickly changed without having to interrupt forming machine production and wherein the overlap of the shearing knife elements, in their shearing positions, can be conveniently adjusted without suspending operation of the forming machine being associated with said shear device, some specific apparatus features are necessary for obtaining this desired result.

The shear device apparatus of claim 1 now defines the means necessary for obtaining the said desired result, i.e. the structural means for controlling the overlap

of the knife elements which according to the only specific embodiment is obtained by moving the axis of the rotational movement of the servo motor (36), i.e. the rotational arm (39), by a rotational movement of the pivotally fixed bracket (40) as depicted in figures 1 to 2. This view is supported by the description where it is stated that "the amplitude of said oscillating movement of the bell crank (22) depends from the driving stroke of the motor-gear combination (36, 38) which, itself, depends from the position of the bracket (40) relative to its pivot axis F". "Thus the amplitude of the bell crank (22) can be adjusted by pivoting the bracket about the axis F" (cf. page 8, lines 13 to 24).

Consequently, claim 1 meets the requirements of Article 84 EPC.

3. *Novelty*

3.1 Novelty has not been disputed by the Examining Division.

3.2 The subject-matter of claim 1 is clearly distinguished from the shearing device of document D1. According to claim 1 of the present application a bell crank (22) is provided instead of the crank axis (40) according to the apparatus shown in the figures of D1, and in that this bell crank (22) is connected to the servo motor (36) by a first connecting rod (46) so as to impart oscillating motion to the bell crank. Furthermore, the amplitude of the driving stroke of said bell crank (22) can be adjusted by moving a bracket (40) relative to a pivot axis (F) thereof whereby the distance between the rotating arm (3) and the bell crank axis (E) is varied.

3.3 All other documents are less relevant than document D1.

3.4 The Board therefore concurs with the Examining Division's view that the subject-matter of claim 1 is novel within the meaning of Article 54(1) EPC.

4. *Inventive step*

4.1 Closest prior art

The glass shearing device according to document D1 represents the closest prior art. Document D1 corresponds to the preamble of claim 1, and thus does not disclose the features of its characterising part.

4.2 Problem to be solved

The Board considers that the problem to be solved is to provide a parallel shear device whose "time under glass" can be more closely controlled regardless of forming machine speed or speed changes and whose "time under glass" can be quickly changed without having to interrupt forming machine production and wherein the overlap of the shearing knife elements, in their shearing positions, can be conveniently adjusted without suspending operation of the forming machine being associated with said shear device glass shearing apparatus (cf. page 2, line 29 to page 3, line 9).

4.3 Solution to the problem

The problem is solved by a glass shearing apparatus as defined in claim 1.

It is credible that the claimed measures provide an effective solution to the technical problem. The invention allows to vary the overlap of the shearing elements and of the time under glass during the use of the apparatus without the need of stopping the operation of associated machines.

- 4.4 The Board concurs with the appellant that the subject-matter of the independent claim 1 is not obvious for the person skilled in the art for the following reasons.

The shaft (40) of the shearing device according to document D1, though not directly driven by motor (45), corresponds to the motor shaft of motor (36) in the present application rather than to the bell crank (22). The members (41, 47) form a first crank drive and the members (42, 48) form a second one which are operated parallel to one another, yet with opposing movements. The arrangement according to the present application shows a series connection between the first crank drive formed by rotating arm (39) and connecting rod (46), and a specially formed second crank drive termed "bell crank" which has three arms. Whereas the first crank drive (39, 46) produces a simple oscillation movement, the bell crank (22) makes two oscillating movements which are opposed to one another. Thus the structure is different and so are the effects which can be produced therewith. The crank drive means with said bell crank results in an oscillating motion having a stroke which depends from the position of said crank drive means, namely the axis of the rotational arm (39) relative to the axis (E) of said bell crank. Document D1 does neither mention the stroke and overlap of the knife

elements, i.e. the contact time between the share knife elements in the glass streams, nor any possibility to adjust such contact time, particularly during the use thereof. Consequently, document D1 cannot give any hint to the solution of said problem.

- 4.5 All other documents are less relevant than D1.
- 4.6 The subject-matter of the independent claims 1 and 9 thus involves an inventive step within the meaning of Article 56 EPC.
- 4.7 The same applies to the subject-matter of the dependent claims 2 to 8 which define further preferred embodiments of the glass shearing apparatus according to claim 1.

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:

Description:

Pages: 1 to 3 and 5 to 9 as filed with letter of
1 November 2001
Page: 4 as filed with the letter of 19 January
2004

Claims:

Nos.: 1 as filed with the letter of 27 January
2004
Nos.: 2 to 10 as filed with the letter of
19 January 2004

Drawings:

Sheets: 1/4 to 4/4 as filed with the letter of
1 November 2001

The Registrar:

The Chairman:

D. Spigarelli

A. Burkhart