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D E C I S I O N
of 25 November 2004

Case Number: T 0634/03 - 3.2.7

Application Number: 99202168.3

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Title of invention:
Glass sheet bending apparatus

Applicant:
Glasstech, Inc.

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 76(1)

Keyword:
"Extension beyond the content of the parent application (main and auxiliary request - yes)

Decisions cited:
T 0545/92, T 0823/96, T 0433/99

Catchword:
-

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Case Number: T 0634/03 - 3.2.7

D E C I S I O N
of the Technical Board of Appeal 3.2.7
of 25 November 2004

Appellant: Glasstech, Inc.
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 5 December 2002 refusing European application No. 99202168.3 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: P. A. O'Reilly
Members: H. E. Hahn
E. Lachacinski

Summary of Facts and Submissions

I. The applicant lodged an appeal against the decision of the Examining Division to refuse the European patent application 99 202 168.3.

II. The Examining Division held that claim 1 of the divisional application comprised subject-matter which was not directly and unambiguously derivable from the parent application 94 930 051.1 as filed (=WO-A-95/11202) so that claim 1 contravened Article 76(1) EPC.

III. With a communication dated 26 August 2004 annexed to the summons for oral proceedings the Board presented its provisional opinion that the subject-matter of claim 1 did not meet the requirements of Article 76(1) EPC.

IV. Oral proceedings before the Board of Appeal were held on 25 November 2004.

(i) The appellant requested that the decision under appeal be set aside and the application be remitted to the first instance for further prosecution on the basis of the claims 1-8 according to the main request as filed on 25 November 1999 with letter of 22 November 1999. As an auxiliary request it was requested that the application be remitted to the first instance for further prosecution on the basis of the amendment to claim 1 as filed on 26 October 2004 with letter of 22 October 2004.

(ii) Independent claim 1 according to the main request as filed on 25 November 1999 reads as follows:

"1. Glass sheet bending apparatus (20) comprising: lower and upper deformable molds (22, 44) that oppose each other and receive a heated glass sheet to be bent; each deformable mold (22, 44) including a plurality of mold members (24, 46) that are engageable with the glass sheet and are movable with respect to each other to bend the glass sheet; lower and upper linkages (26, 48) that respectively extend between the mold members (24, 46) of the lower and upper deformable molds (22, 44) to control movement thereof with respect to each other; an actuating mechanism (154) that moves the linkages (26, 48) of the lower and upper deformable molds (22, 44) to bend the glass sheet; the invention being characterized by:

the linkage (26) of the lower deformable mold (22) having a fixed center connection (162) and also having **movable** end connections (156); the linkage (48) of the upper deformable mold (44) having a center support (166) and also having **movable** end connections (158); the actuating mechanism (154) including flexible members (170, 172) connected to the **movable** end connections (156, 158) of the linkages (26, 48) of the lower and upper deformable molds (22, 44); the actuating mechanism (154) having wheels (174, 176) that receive the flexible members (170, 172); the actuating mechanism (154) including first and second rotary actuator members (180, 182); a first actuator (178) that rotatively drives the first rotary actuator member (180); a second rotary actuator (184) that connects the

first and second rotary actuator members (180, 182) and is operable to selectively prevent or provide relative rotation therebetween; the wheels (174) that receive the flexible members (170) connected to the **movable** end connections (156) of the linkage (26) of the lower deformable mold (22) being fixed on one of the rotary actuator members (180); the wheels (176) that receive the flexible members (172) connected to the **movable** end connections (158) of the linkage (48) of the upper deformable member (44) being fixed to the other rotary actuator member (182); the center support (166) for the linkage (48) of the upper deformable mold (44) having a wheel assembly (186) including a connection (160) thereto and having a pair of flexible members (196) wrapped in opposite directions about the wheel assembly (186); and the center support (166) for the linkage (48) of the upper deformable mold (44) also having a pair of wheels (198, 200) respectively mounted by the first and second rotary actuator members (180, 182) and respectively receiving the flexible members (196) of the wheel assembly (186) in oppositely wrapped directions such that operation of the first actuator (178) rotates the wheels (174, 176) to move the flexible members (170, 172) and to move the end connections (156, 158) of both linkages (26, 48) to perform the bending of the glass sheet between the lower and upper deformable molds (22, 44), while operation of the second actuator (184) rotates the wheels (174, 176) to move the flexible members (170, 172) to move both end connections (158) and the center support connection (166) of the linkage (48) of the upper deformable mold (44) to provide movement that changes the spacing between the lower and upper deformable molds (22, 44)."

(iii) Independent claim 1 according to the amendments of the auxiliary request as filed on 26 October 2004 differs from claim 1 of the main request in that the bold printed terms "**moveable**" have been deleted from the feature "moveable end connections".

V. The appellant argued essentially as follows:

The subject-matter of claim 1 of the main request is directly and unambiguously derivable from the parent application as originally filed. Although there is no explicit disclosure in the parent application it implicitly discloses to the skilled person that the subject-matter of claim 1 forms a separate entity which could be used outside the context of the invention of the parent application. The decision T 545/92 cited in the Guidelines C-VI, 9.4, which was referred to by the Examining Division concerns a divisional application and the decisive question to be answered in this case was whether a tank was disclosed in the original application as being independent of specific features of the whole apparatus. In this decision it was accepted that it is sufficient that "the skilled person unambiguously comprehends ... that a technical problem is solved by utilising the circulation tank of figures 9 and 10. It is obvious to him that it is the structure of the tank per se ... and that such an effect is not necessarily dependent upon ... a particular structure of the remaining parts of the desulphurisation apparatus" (see paragraph 3.1 of the reasons). The term "obvious" used in this decision has to be interpreted as meaning implicit. Furthermore, it

was regarded as significant by the Board that there was no explicit statement that the subject-matter could not be used outside the context of the invention of the parent application. In the present parent application there is no explicit statement that the subject-matter of claim 1 could not be used separately from the other features of the invention of the parent application. The skilled person would understand from the disclosure of the invention of the parent application as filed (see page 5, line 32 to page 7, line 23 corresponding to claims 13-15) that the features of the actuating mechanism or linkage according to claims 13-15 of the parent application as filed can usefully be employed in glass sheet bending apparatus employing deformable moulds in general and not just in glass sheet bending apparatus according to claims 1-4 as filed. Furthermore, the actuating mechanism is shown in isolation in figure 11 so that the skilled reader taking account of the description (page 10, lines 4-6; and pages 22, line 4 to page 26, line 24) would expect that an actuating mechanism would be usable to provide a desired effect regardless of the other details of the structure on which it acts. According to decision T 433/99, which also concerns the omission of features from a claim, the implicit disclosure extends to features which the skilled person would regard as "reasonable to assume" (see point 2.2 of the reasons).

Moreover, according to the parent application another object is to provide an improved bending method as a separate issue. The skilled person can derive from the method claims 16-19 that the described actuating mechanism according to figure 11 is useful for carrying out the method which includes the simultaneous bending

and moving the moulds towards each other. From page 6, lines 21-25 and from page 7, lines 20-23 it is clear that it is the actuating mechanism which causes the simultaneous bending and adjustment of spacing between the opposed deformable moulds. Any mechanical linkage can be replaced by another well known linkage and by using his general knowledge the skilled person would always have an alternative for any linkage. The constant radius of curvature of the glass sheets is not part of the said other object and therefore not comprised in claim 1. Therefore the subject-matter of claim 1 of the main request has a clear and unambiguous basis in the parent application as filed. The linkages shown in the preferred embodiments are movable although the text of the description does not state this. Therefore, the addition of the term "moveable" which specifies that the end connections (156, 158) are moveable, does not extend beyond the disclosure of the present application as filed or the parent application as filed. The same arguments are valid with respect to amended claim 1 of the auxiliary request whereby the added term "movable" has been deleted.

Reasons for the Decision

1. *Compliance of claim 1 of the divisional application with Article 76(1) EPC*

1.1 *Main request*

The appellant argued that the subject-matter of claim 1 of the main request, which has been restricted to only a part of the subject-matter as claimed in the parent

application, is directly and unambiguously derivable from the parent application as originally filed as set out in the Guidelines, C-VI, 9.4 and thus meets the requirements of Article 76(1) EPC. However, the Board cannot accept the appellant's arguments for the following reasons:

1.1.1 Claim 1 of the divisional application according to the main request is based on the subject-matter of the dependent claims 13 to 15 of the parent application as filed (see WO-A-95/11202, claims 13-15). Dependent claim 13 refers back to dependent claim 4 which itself refers to claim 1 of the parent application as filed.

1.1.2 Claim 1 of the divisional application according to the main request does **not**, however, contain the following features of claim 1 of the parent application as filed: "the linkage including connector links that are fixedly connected to the mold members and that have pivotal connections to each other about axes that extend parallel to the glass sheet throughout the bending thereof; the linkage also including control links that have respective pivotal connections to the connector links about axes that extend perpendicular to the glass sheet throughout the bending thereof; the control links having universal connections to each other" (see WO-A-95/11202, claim 1).

1.1.3 The skilled person comprehends from the introductory part of the description of the parent application as filed that the technical problem to be solved resides in the provision of an apparatus for bending glass sheets with a constant radius of curvature (see WO-A-95/11202, page 1, line 3 to page 2, line 9). This

technical problem is solved by the subject-matter of claim 1 of the parent application as filed. The glass sheet bending apparatus as defined in claim 1 comprises a deformable mould including a plurality of mould members which are linked in a specific manner by linkages that extend between the mould members to control movement thereof with respect to each other and include connector links which are fixedly connected to the mould members and have pivotal connections to each other, the control links have universal connections to each other and have respective pivotal connections to the connector links, said linkages are moved by an actuating mechanism whereby the mould members of the deformable mould are moved in order to bend the glass sheet with a constant radius of curvature.

In this context it is clear to the skilled person that is not important as to how the actuating mechanism works so long as it bends the glass sheet in said deformable mould having the specific linkage means to obtain the desired glass sheet with a constant radius of curvature.

Thus, it is clear that the said specific linkages and linkage means of claim 1 of the parent application represent essential features of the glass sheet bending apparatus and actually represent the "invention" of the parent application. Consequently, these essential features cannot be omitted from the subject-matter of an apparatus claim in a divisional application. A glass sheet bending apparatus including the generalisation that any linkages might be used is thus not implicitly disclosed and therefore extends beyond the content of the parent application as filed and thereby contravenes

Article 76(1) EPC. As a further consequence the appellant's arguments, that it would be obvious to the skilled person that the features defined in dependent claims 13-15 of the parent application as filed could be used in glass sheet bending apparatus employing deformable moulds in general, cannot be accepted.

With respect to the appellant's "obviousness" arguments the Board makes the following remark. According to current jurisdiction an "implicit disclosure" relates solely to matter which is not explicitly mentioned, but is a clear and unambiguous consequence of what is explicitly mentioned. Therefore, whilst common general knowledge must be taken into account in deciding what is clearly and unambiguously implied by the explicit disclosure of a document, **the question of what may be rendered obvious** by that disclosure in the light of common general knowledge **is not relevant for the assessment of what is implied by the disclosure** of that document. These two questions have to be strictly separated (compare Case Law of the Boards of Appeal of the European Patent Office, 4th edition, section III.A.3.3, see decision T 823/96, reasons for the decision, point 4.5, unpublished).

1.1.4 The appellant's arguments that figure 11 shows the actuating mechanism 154 in isolation and that this illustration and the description of the actuating mechanism independently of the other parts of the device would suggest to the skilled reader that the actuating mechanism would be usable to control mould members independently from the use of the linkage including connector links and control links also cannot be accepted.

First of all, although figure 11 reveals the actuator mechanism 154 in isolation the figure is stated to be "a schematic view illustrating an actuating mechanism that moves the linkages to perform the bending" (see WO-A-95/11202, page 10, lines 4-6). Thus, the actuating mechanism has just been separated for the drawings for comprehensibility reasons. Secondly, all other drawings 1-10 and 12-16 concern the apparatus of figure 1 wherein the said specific linkages are present and they show details thereof along specific lines as indicated in figures 1, 4 and 6 (see WO-A-95/11202, figures 1-16).

Similarly, the description of the parent application does not support the appellant's arguments. The counterpart of claim 1 of the parent application as filed refers to "an actuating mechanism of the apparatus" (see WO-A-95/11202, page 2, lines 26-29) whereas all other parts of the description refer to "**the** actuating mechanism" (see page 3, lines 21; page 4, lines 19-20; page 5, line 33; page 6, lines 6-15 and lines 21-26; page 9, line 11;) thereby implying that the said more specifically described actuating mechanism should be used in combination with the pre-described glass bending apparatus. This specific actuating mechanism is always described as having connections to the specified linkages in order to move the lower and upper deformable moulds to perform the bending (see page 5, line 32 to page 6, line 20). Particularly with respect to the drawings the function and movement of each element of the said linkages and control links which results in the bending of the deformable mould is described in detail and e.g. figure 5 is stated to "further illustrate the

construction of **the** actuating mechanism and the locations of the linkages that cooperatively move the lower and upper deformable molds between the flat shape and the bent shapes of constant radius" (see WO-A-95/11202, page 9, lines 9-14, and page 11, line 1 to page 26, line 12).

1.1.5 The appellant's arguments based on decisions T 545/92 and T 433/99 have been noted but cannot be accepted since the cases underlying these decisions are not comparable with the present one because the facts are different.

1.1.6 Although the parent application merely states "another object of the present invention is to provide an improved method for bending a heated glass" (see page 7, lines 24-26) the method is implicitly intended to use the entire apparatus of claim 1 and not only the actuating mechanism as argued by the appellant. This view is supported by the statement "with reference to figures 1-5 of the drawings **the glass sheet bending apparatus constructed in accordance with the present invention** is generally indicated by 20 and **is operable to perform the method of the invention** upon receiving a heated glass sheet to be bent from an unshown furnace which may be of any conventional construction" (see page 11, lines 2-8). Furthermore, the Board remarks in this context that independent method claim 16 of the parent application as filed does not comprise any feature which would be related to the said specific actuating mechanism of figure 11. On the contrary, it is clear to the skilled person that simultaneously bending and moving the moulds towards each other can also be achieved by using an alternative actuating

mechanism, as can be concluded from claim 1 of the parent application. As already stated in paragraph 1.1.3 above, claim 1 of the parent application as filed does not define any specific actuating mechanism (see WO-A-95/11202, claim 1) and it is sufficient that the used actuating mechanism applies the forces to the linkages and the deformable mould which are necessary to achieve the bending.

Therefore, the appellant's arguments that the skilled person can derive from the method claims 16-19 of the parent application as filed that the described actuating mechanism according to figure 11 is useful for carrying out the method which includes the simultaneous bending and moving the moulds towards each other and that it is only this specific actuating mechanism which causes the said simultaneous bending and adjustment of spacing between the opposed deformable moulds (see page 6, lines 21-25 and page 7, lines 20-23) cannot be accepted.

1.1.7 The appellant's arguments that any mechanical linkage can be replaced by another well known linkage and that the skilled person using his common general knowledge would always have an alternative for any linkage also cannot be accepted. This is primarily due to the fact that the specific linkages of claim 1 of the parent application as filed represent "the invention" of the parent application (see paragraph 1.1.3 above), since it is the deformable mould in combination with the said linkages and not the actuator which bends the glass sheet. Furthermore, the parent application as filed neither explicitly nor implicitly discloses anywhere in its description alternative linkage means which are **not**

fixedly connected to the mould members and which do **not** contain pivotal and universal connections (see WO-A-95/11202, figures 1-16, particularly the figures 3-6 and 14). The appellant has not submitted any evidence in order to prove its allegation of the common general knowledge of the skilled person.

1.1.8 The appellant's argument that the constant radius of curvature of the glass sheets is not part of the other object (i.e. the method) and therefore need not be comprised in claim 1 cannot be accepted with respect to the conclusions of paragraph 1.1.3 above.

1.1.9 From the above it is evident that the parent application as filed does not directly and unambiguously allow to derive that the subject-matter of claim 1 of the divisional application according to the main request forms a separate entity which could be used outside the context of the invention of the parent application. Claim 1 of the main request therefore does not meet the requirements of Article 76(1) EPC. The main request is thus not allowable.

1.1.10 Since the subject-matter of claim 1 of the main request already extends beyond the content of the parent application as filed for the reasons given above, it does not have to be considered whether or not the addition of the term "moveable" in claim 1 extends beyond the content of the parent application as filed.

1.2 Auxiliary request

The conclusion of paragraph 1.1.9 applies *mutatis mutandis* to claim 1 of the auxiliary request which besides the deletion of the term "moveable" is identical with claim 1 of the main request. Consequently, the auxiliary request is also not allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

G. Nachtigall P. O'Reilly