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# D E C I S I O N
# of 4 June 1996

**Case Number:** T 0456/94 - 3.2.3

**Application Number:** 86305936.6

**Publication Number:** 0211631

**IPC:** F27D 1/00, H05B 6/24

**Language of the proceedings:** EN

**Title of invention:**
Induction furnace packaging system

**Patentee:**
INDUCTOTHERM CORP.

**Opponent:**
ABB Patent GmbH
OTTO JUNKER GmbH

**Headword:**
-

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

**Keyword:**
"Inventive step (no for all requests)"

**Decisions cited:**
-

**Catchword:**
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**Case Number:** T 0456/94 - 3.2.3

# D E C I S I O N
## of the Technical Board of Appeal 3.2.3
## of 4 June 1996

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**Decision under appeal:** **Decision of the Opposition Division of the European Patent Office posted 25 March 1994 revoking European patent No. 0 211 631 pursuant to Article 102(1) EPC.**

**Composition of the Board:**

**Chairman:** C. T. Wilson
**Members:** J. du Pouget de Nadaillac
L. C. Mancini

## Summary of Facts and Submissions

I. Two oppositions were filed against European Patent No. 0 211 631, requesting the revocation of the patent on the ground of lack of inventive step. The oppositions were supported by the citation of the following prior art documents:

D1: BBC Brown Boveri publication Nr. D 10 1288 83D, "Meltpac-Induktionsöfen in Kompaktbauweise".

D2: BBC Brown Boveri publication Nr. D IA/D 1764 83D, "Meltpac NF".

D3: "Aluminium Praxis", 58. Jahrgang 1982, 10, pages 369 to 371.

D4: US-A-2 681 971

D5: US-A-2 728 226

Since documents D1 to D3 concern the same compact induction furnaces developed by BBC and called "Meltpac-furnaces", these documents were considered as a single prior art disclosure.

During the oral proceedings held on 1 March 1994, the claims were amended. At the end of said proceedings, the Opposition Division orally delivered the decision that the opposed patent be revoked for lack of inventive step having regard to documents D1-D3. The written decision was sent on 25 March 1994.

II. Claim 1, as amended during the above mentioned oral proceedings, reads as follows:

"A packaging system for an induction furnace, characterised by a housing (24) adjacent to said furnace (12), said housing having a base (26), upstanding side walls (28a, 28b, 30) and a top wall (32), the base, side walls and top wall defining an enclosed space, and furnace operating equipment located within said enclosed space, wherein spaces (38) are provided within said enclosed space between the furnace operating equipment and side walls (30) of the housing, and access means (36) are provided in the top wall (32) only to said spaces (38) to provide for human entry to the spaces (38) and access to the furnace operating equipment from the sides thereof."

III. The Appellant (Patentee) lodged his appeal on 1 June 1994, paying the appeal fee on the same date. The Statement of grounds was received on 4 August 1994.

With written submissions received on 14 September 1994 and 24 December 1994, both Respondents (Opponents) replied to this statement.

In a communication dated 2 January 1996, accompanying the summons to oral proceedings, the Board of appeal drew the attention of the parties to a possible infringement of Article 123(2) EPC because of the word "only" in Claim 1 and further expressed doubts on the inventive step implied by the subject-matter of said Claim 1.

Oral proceedings were held on 4 June 1994. Respondent 02 did not attend these proceedings as previously announced in his written response received on 23 March 1996.

IV. The Appellant argued essentially as follows:

The word "only" in Claim 1 is admissible, since it can be derived from Figure 1 of the patent specification that the access means provide access to the spaces between the side walls of the housing and the furnace operating equipment located within said housing.

In the decision of the Opposition Division, many assertions are made with the benefit of hindsight. For example, the assertions that the skilled man would enter from the top when there is not enough room for an entry from the sides or that he would enlarge the already existing, but insufficient top accesses of the closest prior art can only be considered as **a posteriori** views, since the aim of said prior art is to reach a compact, modular design, in which such solutions would not be appropriate. The access solution of the present invention offers improvements and is therefore more than a mere alternative of the prior art arrangement. Standardisation of the operating equipment is not necessary and the single housing avoids the electrical and mechanical connections between the modules.

Moreover, the top access is only one aspect of the claimed solution. Important is also the location of the whole operating equipment below the top surface of the housing having regard to the kind of furnaces which are implied, namely high frequency furnaces. In these furnaces, a continuous loading of buckets occurs, and, for safety reasons, in particular when loading cranes are used, there is a need for the largest possible free room on the deck area, so that all operating equipment,

apart from the necessary control equipment, is to be located under the deck. In documents D1-D3, this is not the case, as can be seen from the large cabinet on one side of the deck platform.

Therefore, at least two important steps are to be seen as necessary to arrive at the subject-matter of Claim 1, starting from the nearest prior art.

V. Respondent 01 stressed that no furnace type is specified in Claim 1, so that the second aspect mentioned by the Appellant cannot be taken into account. Moreover, no definition of the operative equipment is given and in the system known from documents D1-D3, most of the operative equipment is also below the deck platform. Thus, the novelty of the subject-matter of Claim 1 only resides in the top access feature, and this solution is clearly suggested in the last paragraphs of documents D1 and D3.

VI. The Appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of:

1. Claims 1 to 3, subject of the contested decision (main request);

2. As the main request in which the word "only" is deleted (first auxiliary request);

3. As the main request or the first auxiliary request in which the word "all" is inserted in line 6 of Claim 1 between the words "and" and "furnace" (second auxiliary request);

4. Combination of claim 3 of the main request with any of the above Claims 1 (third auxiliary request).

The Respondents requested dismissal of the appeal.

## Reasons for the Decision

1. The appeal is admissible.

2. *Main request*

The phrase "and access means are provided in the top wall only to said spaces to provide for human entry" as used in Claim 1 is open to interpretation. It can be understood to mean that the access means is only provided in the top wall and not in the side walls, (which should be inconsistent with the disclosure in the patent of access panels in the side walls), or, as argued by the Appellant, it can be understood to mean that the access means provided in the top wall only allow access to said spaces. The description is completely silent on this aspect of the positioning of the access means, the Appellant relying on the argument that the figures show clearly that the access means only allow access to the spaces. The Board cannot agree. The figures show clearly that the access means allow access to the spaces, but no indication can be seen in the figures of how access to other areas below the top wall is prevented.

Therefore, the amended feature is ambiguous, or, even if its intended meaning is considered to be clear, extends beyond the content of the application as filed (Articles 84 and 123(2) EPC). Claim 1 and consequently the whole set of claims according to the main request are therefore not admissible.

3. *First auxiliary request*

3.1 The word "only" is deleted, so that the previous objection no longer applies and the claims of this request are admissible.

3.2 During the appeal proceedings, novelty of the subject-matter of Claim 1 was not put in question by the Respondents, and the Board agrees that none of the cited prior art documents discloses all the features specified in Claim 1. Therefore, the subject-matter of this claim is new within the meaning of Article 54 EPC.

3.3 The prior art closest to the present invention is disclosed in documents D1-D3. Two embodiments of the "Meltac furnace system" of differing capacity are disclosed in this prior art. For low capacities, the first system embodiment, referenced S1, consists of a single housing and the top wall of this housing forms the platform for the furnace operators, a control board or cabinet being provided on said platform at one end thereof, whereas the furnace itself protrudes at the other end. The photos of documents D1-D3 show that the height of the housing according to this embodiment S1 does not exceed 60 cm, so that human entry into the housing is not possible.

For higher furnace capacities, the second system embodiment, referenced S2 or S, consists of several modules, such as the furnace module, the condensator module, the hydraulic module and so on. These functional modules are grouped together, side by side, in order to form a compact unit, and their top walls form all together the deck platform for the operators. A control cabinet is located on said platform. Between two modules, in which furnace operating equipments are

enclosed, a "passage" module having a door for human entry on one side wall of the housing is interposed for purpose of maintenance of the system and by means of this door it is possible to gain access to the side of the operating equipment elements.

3.4 Since the subject-matter of Claim 1 of the patent in suit according to the first request concerns a furnace packaging system having a human entry, which implies appropriate dimensions of the housing, the prior art closest to the present invention is represented by this second embodiment of the "Meltpac system".

3.5 The system according to Claim 1 differs from the closest state of the art in that:

(a) a single housing, instead of several modules, is provided as enclosing space for the operating equipment;

(b) spaces for access to the operating equipment are provided between the side walls and the furnace operating equipment, and

(c) access means to said spaces are provided in the top wall of the housing.

3.6 According to the description, column 1, lines 20 to 27, of the present application, one problem of the prior art was the access for maintenance purposes, and there was a need that the access to the operating equipment be from the side rather than directly underfoot. However, as seen above, in the furnace system according to documents D1-D3, one gains access to the furnace equipment from the side of said equipment. The present invention aims therefore at another solution for this

accessibility problem. This problem is solved by the above features (b) and (c), that is to say the operators gain access through the top of the housing and drop into the housing aisles, thereby having here also access on the side of the equipment.

Feature (a) does not participate to this accessibility solution. According to the Appellant's written submissions, the use of one housing permits individual, and not standardized, design of the system and avoids the electrical and mechanical connections between the modules. This feature solves consequently other problems and is therefore to be considered per se.

3.7 In the "Meltpac system" according to documents D1-D3, a single housing is provided for low furnace capacities. Therefore, the choice of a housing for higher furnace capacities, instead of the modules described in documents D1-D3, is a mere question of choice between two possibilities, which are disclosed in this closest prior art. It is up to the skilled person to choose the one or the other, according to the circumstances and the requirements of the case. The Appellant has indicated that, in the case of the present invention, there is no need to have a compact system nor standardisation units. Modules further are described in documents D1-D3 for the purpose of enclosing equipment elements and, thus, have a housing function. It is clear for the person skilled in the art that, if he accepts to neglect the advantages of modules which are transportable, at least because of their sizes, which are easy to be mounted and can be standardized, then a single housing is sufficient. Therefore, no inventive step can be seen in the provision of this feature. During the oral proceedings, the Appellant did not refer to this aspect of the invention.

3.8 As already seen, documents D1-D3 teach to provide human entry in the case of large systems, a door being provided in a side wall for this purpose, giving access to the sides of the equipment elements. However, this prior art goes further by teaching that, in the "Meltpac system", access is also provided on almost all sides of the housing by means of detachable sheet steel plates. Indeed, although it is not stated whether these panels allow entry for a human body, in view of the door example, there is a clear suggestion to provide a possible human entry in all sides of the housing and the top wall is one of these sides. In the description of the present patent, a corresponding main teaching is given, since it is indicated that the access means are made either of panels or of hingedly mounted panels and that other access panels may be located in the side walls. The person skilled in the art, further, knows that it is usual in a factory to group several of these packaging systems together in abutting relationship, as is shown by documents D1-D3, and it is then obvious for him that one system may be enclosed inside others, so that the sole and obvious way of gaining access to the operating equipment is to provide an entry in the top wall. Therefore, no inventive step can be seen in such a feature.

According to the Appellant, the present invention allows access to the equipment components from their sides by locating the access spaces between the operating equipment and the side walls of the housing. As seen above, documents D1-D3 teach to give access to the sides of the equipment elements, although the access spaces below the top wall are not between the side walls and the operating equipment. Thus, the provision of the access spaces in the aisles of the housing is merely one of several design possibilities concerning the arrangement of the operating equipment elements inside the housing.

For all these reasons, no inventive step can be seen in the subject-matter of Claim 1 of the first auxiliary request, so that this request is not allowable.

4. *Second auxiliary request*

4.1 In this request, Claim 1 is amended by the introduction of the word "all" applied to the furnace operative equipment, which is located under the top wall. This amendment is supported by page 2, last paragraph, of the description of the patent in suit, as originally filed, which states that "all of the furnace operative equipment with the exception of the operation control console" is located within the housing. Thus, with this term "all" interpreted within the meaning given by this passage, Claim 1 is admissible having regard to Article 123(2) EPC. Since, moreover, this amendment restricts the scope of said claim, the requirement of Article 123(3) EPC is also fulfilled.

4.2 According to the Appellant, it is an important feature of the present invention that all the furnace operating equipment is located within the housing. Indeed, one object of the present invention, as originally formulated in the description, was to obtain an open deck area where only the necessary operating controls protrude above the deck and the remaining equipment components are under the deck area. However, having regard to this particular feature, the Board cannot see any difference between the teaching of documents D1-D3 and the present invention. In document D2, the different modules of the "Meltpac system" are listed and their contents given. It is in particular indicated that the control cabinet, which is the sole operating equipment element located on the platform, contains the controls and the surveillance means of the furnace, as is the case with the present invention according to the description of the patent in suit, see column 2,

lines 16 to 19. The description of the patent in suit provides no other information having regard to this particular aspect of the invention, so that no substantial difference can be seen. It follows that, in the Meltac system as well as in the present invention, all the other operating equipment components are located under the deck platform or top wall of the unit, and that consequently, no difference in this respect can be seen between the closest prior art and the present invention.

4.3 Moreover, this added feature has no functional interrelationship with the other features of Claim 1, and in particular with features (a) to (c), as listed in Point 3.5 above, so that its insertion in Claim 1 does not bring other improvements or advantages and, thus, being not a distinguishing feature, it cannot be considered as pointing to non-obviousness. The second auxiliary request has therefore to be rejected.

5. *Third auxiliary request*

5.1 This request is restricted to a particular type of furnace, namely one which has charging conveyor means mounted on the top wall of the housing in order to charge material to be melted. This additional feature was a feature of the dependent Claim 4, as originally filed. Thus, the requirements of Article 123(2) and (3) are satisfied.

5.2 According to the Appellant, this additional feature indicates implicitly that the furnaces which are concerned, are those having a melting speed that is so high that the usual bucket loading method is no longer adequate. A continuous loading of the furnaces and, therefore, a continuous charging of the loading conveyor by means of cranes is necessary. The most modern furnace, namely the high frequency furnace, is

therefore concerned, and because of this continuous loading, the deck platform should be as open as possible, that is to say free from any kind of superfluous equipment.

5.3 The new introduced feature results in claiming a particular use of the subject-matters of Claims 1 of the previous requests, namely the use in high frequency furnaces. These furnaces are not mentioned as such in the description of the patent in suit, nor is this particular loading aspect disclosed. In this description, it is only mentioned that the induction furnace in accordance with the present invention is conventional and that the charging conveyor, that is to say a conveyor according to the additional feature, is conventional also.

Moreover, considering the Appellant's arguments, a link between this particular use and the subject-matter of Claim 1 of each previous request is to be seen in the location of the furnace operating equipment below the top wall, since only this feature improves the open aspect of the deck platform. However, as seen above, this feature is already known in the prior art, although applied to other furnace types. Therefore, no inventive step can be seen in its use in a particular modern furnace type, which is conventional **per se**.

Thus, the third request also cannot be accepted for lack of inventive step (Articles 52 and 56 EPC).

6. Since the Board is bound by the above examined requests of the Appellant, as a whole, it is unnecessary to consider the merits of the dependent claims. These claims must fall with Claim 1 of each request.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed

The Registrar: The Chairman:

N. Maslin C. T. Wilson