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D E C I S I O N
of 7 December 2005

Case Number: T 1003/03 - 3.2.01

Application Number: 99909449.3

Publication Number: 1062454

IPC: F16L 47/02, F16L 39/02

Language of the proceedings: EN

Title of invention:
Electrofusion coupler

Patentee:
KUNGSÖRS PLAST AB

Opponent:
NUPI S.p.A.

Headword:
-

Relevant legal provisions:
EPC Art. 56

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

Decisions cited:
-

Catchword:
-



Case Number: T 1003/03 - 3.2.01

D E C I S I O N
of the Technical Board of Appeal 3.2.01
of 7 December 2005

Appellant: KUNGSÖRS PLAST AB
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 22 July 2003
revoking European patent No. 1062454 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: S. Crane
Members: J. Osborne
S. Hoffmann

Summary of Facts and Submissions

- I. The appeal is directed against the decision posted 22 July 2003 revoking European patent No. 1 062 454.
- II. The Opposition Division found that the subject-matter of claim 1 as granted did not involve an inventive step in the light of the closest prior art:

D2: US-A-5 141 261

in combination with any one of:

D3: US-A-5 529 656

D4: EP-A-0 585 974

D5: WO-A-95/26873.

- III. With a letter dated 22 August 2005 the appellant requested that the decision under appeal be set aside and the patent maintained in amended form on the basis of claims 1 to 8 submitted with that letter. With a letter dated 5 September 2005 the respondent indicated that it had no objections in response to the appellant's request.
- IV. Claim 1 according to the appellant's request reads as follows and differs from claim 1 as granted essentially by the addition of the text in italics:

"A fusion welding socket for use in coupling together plastic pipes, wherein the socket (18) is intended to receive the ends of those pipe parts (1, 2) to be

coupled together with a tight fit, the diameter of the ends (19) of the socket (18) is greater than the diameter along an intermediate part (20) of said socket, the inner diameter at said ends is adapted to receive with a close fit an outer pipe (1) and the inner diameter along said intermediate part is adapted to receive with a close fit an inner pipe (2) of a double-pipe conduit which includes two coaxial pipes and a leakage detection space (3) located between said coaxial pipes, and the socket includes at least one passageway (21) which mutually connects the spaces in the socket on both sides of the intermediate part (20), characterized in that the socket (18) has embedded therein heating coils (24-27) which comprise resistance wires or filaments and which, when energized, function to fusion weld the socket material with the material of both the outer pipes (1) and the inner pipes (2) of two double-pipe conduits to be connected together with the aid of the socket, locally at the positions of said coils, *wherein the heating coils (24, 25) intended to fusion weld the socket material with the material of the outer pipes (1) do not overlap, in the axial direction of the pipes to be connected together, the heating coils (26, 27) intended to fusion weld the socket material with the material of the inner pipes (2), and wherein the intermediate part extends from the inner diameter adapted to receive the inner pipe to the inner diameter adapted to receive the outer pipe.*"

Claims 2 to 8 define features additional to those in claim 1.

V. The appellant essentially argued as follows:

D2 represents the closest prior art, corresponding to the preamble of claim 1 and teaches that the pipes are joined to the socket by welding. However, the outer pipes cover the inner pipes so that if they were joined in a single electro-fusion welding step there would be no possibility of an external check of the integrity of the welding between the inner pipes and the socket. A primary object of the present invention is to provide a technique which simplifies the joining of double-containment pipes whilst permitting checking the integrity of the weld between the inner pipe and the socket. D3 relates to electro-fusion welding of double-containment pipes by means of sockets having embedded heating elements. However, the process is a two-step process in which the inner pipe is connected and checked before the outer pipe is connected. D4 and D5 merely teach electro-fusion welding of single pipe conduits.

Reasons for the Decision

1. The patent relates to an electro-fusion coupler for use in joining together plastic conduits which include two coaxial pipes with an annular space between them ("double-containment pipes"). The coupler includes a socket which is adapted to receive the ends of the pipes to be joined and incorporates heating elements which, when energized, cause the material in the socket to fuse together with the material in the pipe walls.

2. The subject-matter of claim 1 essentially differs from that as granted by the addition of two features:

- that the respective heating coils for the inner and outer pipes do not overlap in the axial direction of the coupling; and
- that the intermediate part extends from the inner diameter adapted to receive the inner pipe to the inner diameter adapted to receive the outer pipe.

2.1 The wording of the added features is not included in the application as originally filed. According to case law of the boards of appeal in such a situation it is permissible to introduce into the claims features which are included in the drawings provided that the structure and the function of such features are clearly, unmistakably and fully derivable from the drawings by the skilled person, not at odds with the other parts of the disclosure and not isolated from associated features.

2.2 In the application as originally filed it is stated that in the prior art arrangement for coupling double-containment pipes illustrated in figure 1 it is not possible after coupling the pipes to check the integrity of the joint to the inner pipe since it is hidden by the outer welding socket (see the sentence bridging pages 6 and 7). By comparison, as set out in page 8, lines 32 to 36 such a check is possible with the socket according to the present invention shown in figure 3. As is evident from figure 3, inspection of the fusion-welded joint on the inner pipe located adjacent the inner heating coil is possible because the

inner joint is not covered by the outer pipe and therefore also not by the outer heating coil. It is furthermore evident that the extension of the intermediate part of the socket between the respective inner diameters forms a barrier to insertion of an outer pipe into the area covering the inner joint and thereby ensures that the outer pipe cannot cover the inner joint. These structural features which are clearly derivable from the drawing therefore are supported by the functional statements in the description and the requirements of the case law for disclosure are fulfilled.

- 2.3 Since the additional features are disclosed in the application as originally filed and no features have been deleted from the claim the amendments do not contravene the requirements of Article 123(2), (3) EPC.
3. D2 discloses a coupler for double containment pipes which essentially consists of two concentric tubular bodies joined at their mid-lengths by an annulus having cut-outs to provide communication between the annular spaces in the pipes. An inwardly projecting rib divides the length of the inner tubular body. Opposing ends of the inner and outer pipes to be joined are inserted into opposite ends of the respective tubular bodies. According to D2 the pipes may be suitably joined to the socket by welding. The ends of the inner and outer pipes if placed in abutment with the rib and annulus respectively would share essentially the same longitudinal location in the socket with the outer pipe covering the welded section of the inner pipe.

- 3.1 The subject-matter of claim 1 differs from that of D2 by the features contained in the characterising portion. The feature that the intermediate part extends from the inner diameter adapted to receive the inner pipe to the inner diameter adapted to receive the outer pipe has the effect that the outer pipe cannot be inserted into the socket beyond the end of the intermediate part. As a result, the spacing between opposing ends of the outer pipe must be greater than that for the inner pipe. This feature in combination with the offset arrangement of the heating coils has the effect of permitting the electro-fusion welding operation to be performed for both pipes simultaneously whilst nevertheless permitting an external check on the integrity of the weld between the inner pipe and the socket.
4. D3 discloses an arrangement for coupling double-containment pipes by electro-fusion welding using separate inner and outer coupling elements. The primary teaching relates to the provision of anchor plates to improve structural resistance to thermal pipe movement during use. The inner coupling element locates the ends of the inner pipes which are joined in a first welding operation. The ends of the outer pipe are spaced further apart. After insertion of anchor plates and checking the integrity of the welded joints on the inner pipe a second coupling element is located to cover the opposing ends of the outer pipe and a second welding operation is performed. It follows that D3 contains no information relevant to the use of a single coupling element in a single welding operation.

5. D4 and D5 are less relevant than D3 in as far as they relate only to the fusion coupling of single wall conduits.

6. On the basis of the foregoing the Board concludes that the subject-matter of claim 1 involves an inventive step. Since claims 2 to 8 contain all features of claim 1 the same conclusion applies also to those claims.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to maintain the patent on the basis of the following documents:
 - claims 1 to 8 filed with a letter dated 22 August 2005

 - description and drawings as granted.

The Registrar:

The Chairman:

A. Vottner

S. Crane