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Datasheet for the decision of 23 October 2008

Case Number: T 1431/06 - 3.2.05

Application Number: 99302359.7

Publication Number: 0945662

IPC: F16L 37/092

Language of the proceedings: EN

Title of invention:
Improvements in or relating to tube couplings

Patentee:
JOHN GUEST LIMITED

Opponent:
MARKS & CLERK

Headword:
-

Relevant legal provisions:
EPC Art. 83, 123(2), 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Added subject-matter (main request - no)"
"Sufficiency of disclosure (main request - yes)"
"Inventive step (main request - yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 1431/06 - 3.2.05

D E C I S I O N
of the Technical Board of Appeal 3.2.05
of 23 October 2008

Appellant: (Opponent)	MARKS & CLERK 90 Long Acre London WC2E 9RA (GB)
Representative:	Johnson, Terence Leslie Marks & Clerk 90 Long Acre London WC2E 9RA (GB)
Respondent: (Patent Proprietor)	JOHN GUEST LIMITED Horton Road West Drayton Middlesex UB7 8JL (GB)
Representative:	Bayliss, Geoffrey Cyril Boult Wade Tennant Verulam Gardens 70 Gray's Inn Road London WC1X 8BT (GB)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted 12 July 2006 rejecting the opposition filed against European patent No. 0945662 pursuant to Article 102(2) EPC (1973).**

Composition of the Board:

Chairman: W. Zellhuber
Members: S. Bridge
C. Rennie-Smith

Summary of Facts and Submissions

I. The appellant (opponent) lodged an appeal against the decision of the Opposition Division rejecting the opposition filed against the European patent No. 0 945 662.

II. Opposition had been filed against the patent as a whole based on Article 100(a) EPC (lack of inventive step, Article 56 EPC) and Article 100(b) EPC and Article 100(c) EPC.

III. Oral proceedings were held before the Board of Appeal on 23 October 2008.

IV. The appellant requested that the decision under appeal be set aside and that the European patent No. 0 945 662 be revoked.

The respondent (patentee) requested that the appeal be dismissed, or as an auxiliary measure, that the decision under appeal be set aside and that the patent in suit be maintained on the basis of one of the sets of claims submitted as first, second and third auxiliary requests respectively on 23 September 2008.

V. Independent claim 1 of the patent as granted reads as follows:

"1. A tube coupling comprising a coupling body (10) having a throughway (11) open at one end (12) to receive an end portion of a tube (13), an internal cam surface (29) tapering towards the open end in which a collet (25) is located for locking the tube in the

coupling body by engagement with the tapered cam surface, and stop means to limit entry of the collet into the throughway, the coupling body consisting of a main body (10a) the throughway of which receives the end of a tube and contains said stop means to limit insertion of the collet and an end cap (10b) in screwthreaded engagement with the main body containing said open end to the throughway and the tapered cam surface; **characterised in that** indexing means (24, 30, 31, 33) are provided between the end cap and main body to define different positions to which the cap can be screwed onto the body in the first of which a tube can be inserted into the throughway to be held by the collet and, by depressing the collet (25) into the coupling body, released and from which the cap cannot be unscrewed and in the second of which, reached by screwing the cap further onto the body the collet is engaged with the stop means to prevent the collet being depressed into the coupling body to release the tube."

VI. The following documents are referred to in the present decision:

D1 : US-A-4 637 636

D2 : GB-B-2 072 292

D3 : GB-B-2 174 166

D4 : GB-A-2 265 428

A further document GB-A-2 304 390 was filed by the appellant on 21 October 2008, two days before the oral proceedings, under cover of a fax relating to all requests. During oral proceedings the appellant conceded that this late filed document was only to be considered against the auxiliary requests.

VII. The appellant argued substantially as follows in the written and oral procedure:

Claim 1 as granted adds the feature "from which the cap cannot be unscrewed." This feature is not explicitly disclosed as such in the application as filed.

On the contrary, the application as filed disclosed that removal of the cap can always take place, albeit with difficulty: paragraph [0027] of the application as published states the "face of the cam 30 precludes easy removal of the cap from the body" (i.e. it can be removed), and paragraph [0020] of the application as published also states that if the cap is "forced", it can be removed.

The word "cannot" is the opposite of "can", meaning not possible and not synonymous with the word "resist". The originally disclosed term "resist" does not mean that the applier of the force cannot succeed. It merely means that a certain action may be more difficult and does not mean that something is totally prevented.

Subject-matter has been added to claim 1 by saying that the cap cannot be unscrewed. This is contrary to Article 123(2) EPC.

As already argued above, the application as filed makes it clear that the end cap can be unscrewed (paragraphs [0020] and [0027] of the application as published) but does not contain any teaching which would enable the skilled person to provide a coupling in which the end cap cannot be unscrewed. Furthermore, the missing information is not available from the general knowledge

of the skilled person. Therefore, the patent in suit does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art, contrary to Article 83 EPC.

Document D1 forms the closest item of prior art. A tapered cam surface 31 on the screw-in cam member 29 interacts with the outer surfaces of the resilient arms of the collet 32. These features constitute indexing means in the sense of claim 1 of the patent as granted in view of the following dictionary definition of "To Index": *to move (a machine or a workpiece held in a machine tool) that one particular operation will be repeated at certain defined intervals* (Collins English Dictionary). With respect to the tube coupling of document D1, the *certain defined intervals* correspond to a certain number of turns applied by the user to the screw-in cam member 29, each of which will result in a different configuration of the screw-in cam member 29 and collet 32 within the coupling body 10. With the cam member 29 sufficiently screwed out of the coupling body 10, the collet can be pressed forwardly manually to allow the tube to be released (document D1, column 3, lines 25 to 37). This corresponds to the first state of the tube coupling according to the patent in suit (column 1, lines 50 to 53 of the patent as granted). With the cam member 29 further screwed into the coupling body 10, the gripping action of the collet increases to prevent the tube from being released (document D1, column 3, lines 38 to 51). This corresponds to the second state of the tube coupling according to the patent as granted (column 1, lines 53 to 54 of the patent as granted).

Therefore, the subject-matter of claim 1 of the patent as granted only differs from the tube coupling according to document D1, in that the cap cannot be unscrewed.

Such a minor design change comes within the ordinary practice of the skilled person and does not provide any unforeseeable advantages. Claim 1 of the patent as granted lacks an inventive step with respect to document D1 (Article 56 EPC).

Figures 1 and 2 of document D2 disclose a screw-on cap 20 which the skilled person would consider using in conjunction with the tube coupling disclosed in document D1 in order to arrive at a tube coupling which is easier to operate and does not require a tool for turning the corresponding cam member 29 of document D1 (column 4, lines 57 to 68, figure 9). Claim 1 of the patent as granted lacks an inventive step (Article 56 EPC) with respect to the combination of documents D1 and D2.

In the written procedure, the appellant also considered that the subject-matter of claim 1 of the patent as granted was anticipated by the combinations of documents D1 and one of D2 (figures 3 and 4), D3 or D4, because these tube couplings have indexing means which define two different indexed positions so that a user does not have to rely on an ambiguous visual indication.

VIII. The respondent argued substantially as follows in the written and oral procedure:

Paragraph [0027] (A2 publication) of the application as filed reads: "The counter-clockwise face of the cam 30 precludes easy removal of the cap from the body. In fact this face will be damaged if the cap is removed thereby providing evidence of tampering."
Precludes means excluding or making impossible according to the Concise Oxford Dictionary and what the statement of paragraph [0027] is clearly saying is that it can only be removed by damaging it and it is then no longer the cap as defined. Using the word "cannot" in claim 1 rather than the word "preclude" as used in the original description does not add subject-matter. The requirement of Article 123(2) EPC is met.

Paragraphs [0027] and [0034] (A2 publication) of the application as filed set out how the indexing means define different positions in which the cap can be screwed onto the coupling body and in the first of which the cap cannot be unscrewed. The invention is thus disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 83 EPC).

The Oxford English Dictionary (SECOND EDITION 1989) provides a more precise definition of the verb "to index":
"5. Engin. a. trans. (Cf. quot. 1879 s.v. INDEX n. 2.) To rotate (work to be machined, or a machine part) through a given aliquot part of a complete turn; to position in accordance with intermittent motion of this kind; hence, to transfer or move from one predetermined position to another in order that different locations

may be machined or different operations performed. (Cf. INDEXING vbl. n. 2.)".
The cam member 29 of the tube coupling of document D1 only has a screw thread and does not provide any identifiable "predetermined positions", so that the tube coupling of document D1 does not have any indexing means in the sense of claim 1 of the patent as granted. The indexing means of claim 1 of the patent as granted provide a clear indication of the state of the tube coupling.
The subject-matter of claim 1 of the patent as granted therefore involves an inventive step with respect to document D1 (Article 56 EPC).

Adding the screw cap 20 disclosed in document D2 (figures 1 and 2) to the tube coupling disclosed in document D1 requires redesign of the tube coupling. It is not clear what these modifications would be with regard to the interaction between the cap and the collet and whether such a cap could be unscrewed. It is not clear what would motivate the skilled person to perform such a re-design, given that the screw threaded cam member 29 of the tube coupling according to document D1 can readily be turned by hand by means of its flange 30 (column 3, lines 5 to 9). Furthermore, the indexing means as set out in claim 1 of the patent as granted would still be missing from such a combination.
The subject-matter of claim 1 of the patent as granted therefore involves an inventive step with respect to the combination of documents D1 and D2 (Article 56 EPC).

There is no apparent reason why the person skilled in the art should contemplate incorporating any feature of the constructions respectively shown in document D2 (figures 3 and 4), D3 or D4 in the tube coupling of document D1 or arrive at a construction within the scope of claim 1 of the patent as granted.

Reasons for the Decision

Main Request

1. Added subject-matter, Article 123(2) EPC

Claim 1 as granted differs from claim 1 as originally filed inter alia in that the following underlined feature has been added:

(i) and from which the cap cannot be unscrewed

The expression "from which the cap cannot be unscrewed" is not explicitly explained or mentioned in the patent as granted.
However, the description of the patent as granted does not support interpreting the expression "cannot be unscrewed" in an absolute sense of "cannot ever be unscrewed under any circumstances". Such an absolute interpretation is furthermore contrary to the common general knowledge of the person skilled in the art, as it is generally known that any material structure will eventually yield to the targeted application of sufficient force. This is also reflected in the description of the patent as granted: "If the cap is forced and the abutment 34 is damaged, that will be evident and indicate misuse of the fitting" (paragraph

[0022] of the patent as granted) and "In fact, this face will be damaged if the cap is removed thereby providing evidence of tampering" (paragraph [0029] of the patent as granted). If the cap is forced, this is to be considered as tampering and also results in some damage. Carrying out such actions on the tube coupling cannot be considered as comprised within the normal use of the tube coupling. The skilled person therefore directly and unambiguously derives from the description of the patent as granted that, in claim 1, the term "cannot" is to be understood in the context of the normal use of the tube coupling, in which the cap cannot be unscrewed.
The description of the patent as granted corresponds to the description of the application as filed and in particular, paragraphs [0022] and [0029] of the patent as granted respectively correspond to paragraphs [0020] and [0027] of the A2 publication. The same interpretation of the term "cannot" therefore also follows from the application as filed.

The Board therefore concludes that, although the language of claim 1 was amended using vocabulary not previously disclosed in the application documents as filed, no subject-matter has been added.
The requirement of Article 123(2) EPC is met with respect to claim 1 of the patent as granted.

2. Sufficiency of disclosure, Article 83 EPC

The sufficiency of disclosure objection raised by the appellant relies solely on the expression "the cap cannot be unscrewed" which was already discussed above in the context of added subject-matter. The same

considerations also carry over to the issue of sufficiency of disclosure in that the term "cannot" is to be understood in the context of the normal use of the tube coupling.

In the patent as granted, paragraphs [0016] to [0037] and figures 1 to 15 disclose several embodiments of the invention such that the cap cannot be unscrewed in the context of the normal use of the tube coupling (paragraphs [0022] and [0029] of the patent as granted).
No arguments were presented concerning why the skilled person could not implement the invention as set out in the description of the embodiments, nor are any such reasons apparent.

The feature of the invention "the cap cannot be unscrewed" is disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art so that the requirement of Article 83 EPC is met.

3. Inventive step, Article 56 EPC

The closest prior art is represented by document D1, which discloses a tube coupling having all the features of the pre-characterising portion of claim 1 of the patent as granted (column 2, line 37 to column 3, line 24, figure 1 of document D1).

The tube coupling according to document D1 has different positions to which the cam member 29 can be screwed onto the body 10:

– in the *first position* a tube 15 can be inserted into the throughway to be held by the collet 32 and, by depressing the collet 32 into the coupling body 10, released (column 3, lines 25 to 37), and
– in the *second position*, reached by screwing the cam member 29 further onto the body 10, the collet 32 is engaged with the stop means 20 to prevent the collet being depressed into the coupling body 10 to release the tube (column 3, lines 38 to 51).

The cam member 29 is only linked to the coupling body 10 by a screw thread and there is nothing to stop the user of the coupling from completely unscrewing the cam member 29 from the coupling body 10.
The *first position* has to be determined by trial and error in terms of the number of turns to be applied to the cam member 29 until the collet can be sufficiently depressed into the coupling body 10 to release the tube.

The Board therefore cannot accept that the tube coupling of document D1 could be considered as having indexing means, because the proposition that the appropriate relative positions of the collet 32 and cam member 29 on their own *define* the *first position* would appear to reverse the technical teaching of the patent as granted when read as a whole: in the patent as granted, the indexing means (for example the protrusions 24, 30 and 31 shown in figure 2) define the *first position* in which the collet 25 and cap 10b are such that, by depressing the collet 25 into the coupling body 10, the tube can be released.

The subject-matter of claim 1 of the patent as granted is distinguished over the disclosure of document D1 by

the provision of the indexing means which defines different positions as set out in the characterising part of granted claim 1.

The problem to be solved is to provide an improved indication of the state of the coupling (paragraph [0006] of the patent as granted).

This problem is solved by the tube coupling including in combination the features of claim 1 of the patent as granted : such a tube coupling can readily be adjusted manually between the first state in which a tube can be locked in and released from the coupling body and a second state in which a tube is locked first and cannot be released (paragraph [0006] of the patent as granted), thereby achieving the effect of providing the user with a more definite indication of the state of the coupling (column 1, lines 16 to 23 of the patent as granted).

The solution to this problem as defined in claim 1 is not disclosed or suggested in document D1. The subject-matter of claim 1 of the patent as granted is not rendered obvious by the teaching of document D1.

Document D2 discloses two embodiments. In the first embodiment (page 5, line 1 to page 7, line 6, figures 1 and 2) the cap (20) is joined to the body part (10) by a screwthreaded connection.
There is no motivation related to the above problem for the person skilled in the art to select the annular end cap 20 singly or with other parts from the first embodiment (figures 1 and 2) of document D2 and redesign the tube coupling of document D1 to

accommodate these. The result of such a redesign is not immediately obvious and, furthermore, would still not provide indexing means in the sense of claim 1 of the patent as granted.

In the second embodiment of document D2 (page 7, line 7 to page 8, line 19, figures 3 and 4) the screw threaded connection is replaced by a pair of oppositely disposed and radially extending elements (28) of the body part slidingly disposed in a pair of oppositely disposed slots (26) of the cap (page 7, lines 14-19).
This slot based connection can be considered as an indexing means, because each slot has at its opposite ends respective shallow depressions (30) in a side wall nearest the free end of the skirt portion of the cap and these are provided so that the cap is retained in an adjusted position relative to the body part by the seating of the respective element (28) in one or other of the depressions (page 7, lines 22-28). However, this slot based connection is presented as an alternative to the screwthreaded connection (page 7, lines 14-16). Even if the skilled person were motivated to consider the slot based connection, this would appear to be in replacement of, and not in addition to, the screw thread connecting the cap and the body.

Furthermore, the tube couplings disclosed in document D2 (page 10, lines 6-8) can "very quickly and easily be […] dismantled". The feature that the cap cannot be unscrewed is missing from the tube couplings of documents D1 and D2.

The Board therefore considers that the subject-matter of claim 1 of the patent as granted is not rendered

obvious by the combined teachings of documents D1 and D2.

Document D3 discloses (page 8, line 17 to page 9, line 3, figures 1 to 6) a tube coupling with an end cap ("encircling member 23") which rotates on the coupling body ("coupling sleeve 12"). The tube coupling comprises a gripping ring (19) with camming portions (22) projecting radially outwards for cooperation with corresponding camming portions (24) on the internal profile of the encircling member (23). "The encircling member (23) and the outside of the socket (13) are provided with radial stop members (25A, 25B and 26) cooperating to limit the extent of rotation [see figure 4] to that required to bring the respective camming portions (22, 24) into engagement [see figure 6], and, by reverse rotation, out of engagement [see figure 3] to release the grip of the gripping ring (19) on the inserted pipe (15), which can then be withdrawn from the coupling (11) and replaced again or replaced by another pipe, and gripping engagement effected therewith by the same gripping member (19) upon rotation of the encircling member (23) again" (page 8, line 17 to page 9, line 3).
The cam surfaces (22, 24) of tube coupling according to document D3 do not taper towards the open end of the coupling and there is no screw thread linking the encircling member (23) to the coupling sleeve (12). The absence of the screw thread ensures that the encircling member (23) cannot be screwed or unscrewed. In view of these structural differences, it is not clear what would motivate the skilled person to consider excising the indexing means (25A, 25B, 26) from the tube coupling of document D3 and transferring it to the tube

coupling according to document D1. Furthermore, the desiderata of not being able to unscrew the cap would also appear to have to be retained together with the screw thread connection of the tube coupling according to document D1: what such a construction would look like is unclear.
The Board therefore considers that the subject-matter of claim 1 of the patent as granted does not arise in an obvious manner when attempting to combine the teachings of documents D1 and D3.

Document D4 (page 1, lines 2 and 3) is concerned with couplings for externally corrugated tubing and addresses a different problem, namely, the risk that some of the separate parts of previous known couplings may be lost during use (page 1, lines 12 to 15).
Document D4 discloses an indexing mechanism without a screw thread, but proposes a solution which takes advantage of the external corrugations on a tube to be inserted into the coupling. The coupling according to document D4 is too remote from the subject-matter of claim 1 to form a suitable basis for questioning the inventive step of claim 1, because it is not clear what would induce the skilled person to excise which features of the tube coupling of document D4 and transfer them to the tube coupling according to document D1 with what result.
The Board therefore considers that the subject-matter of claim 1 of the patent as granted does not arise in an obvious manner when attempting to combine the teachings of documents D1 and D4.

In consequence, the subject-matter of claim 1 of the patent as granted involves an inventive step (Article 56 EPC).

Auxiliary Requests

As the subject-matter of claim 1 of the main request is considered to fulfil the requirements of the EPC, it is not necessary to discuss the auxiliary requests.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D.Meyfarth W. Zellhuber