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**Datasheet for the decision
of 18 February 2014**

Case Number: T 1134/11 - 3.2.07

Application Number: 05762964.4

Publication Number: 1768788

IPC: B05B 7/08, B05B 15/06

Language of the proceedings: EN

Title of invention:

Automated spray gun fitted with a spray system mounted on a supply base

Patent Proprietor:

Surfaces & Finitions S.A.S.

Opponent:

Sprimag Spritzmaschinenbau GmbH & Co KG

Headword:

-

Relevant legal provisions:

EPC Art. 56

RPBA Art. 13(1)

Keyword:

"Documents considered as further prior art (yes)"

"Inventive step (no)"

"Admittance of late filed and even later substantiated auxiliary requests 1 and 8 (no)"

Decisions cited:

T 1732/10, T 0176/84, T 1685/07

Catchword:

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Case Number: T 1134/11 - 3.2.07

D E C I S I O N
of the Technical Board of Appeal 3.2.07
of 18 February 2014

Appellant: Sprimag Spritzmaschinenbau GmbH & Co KG
(Opponent) Henriettenstrasse 90
D-73230 Kirchheim (DE)

Representative: Keilitz, Wolfgang
Patentanwälte
Keilitz & Söllner, Partnerschaft
Nigerstrasse 4
D-81675 München (DE)

Respondent: Surfaces & Finitions S.A.S.
(Patent Proprietor) 163, Avenue des Auréats
F-26000 Valence (FR)

Representative: Barbe, Laurent
Gevers France
41, avenue de Friedland
F-75008 Paris (FR)

Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
on 10 March 2011 concerning maintenance of the
European Patent No. 1768788 in amended form.

Composition of the Board:

Chairman: H. Meinders
Members: H.-P. Felgenhauer
I. Beckedorf

Summary of Facts and Submissions

- I. The appellant (opponent) filed an appeal against the decision of the opposition division maintaining European patent No. 1 768 788 in amended form.

The appellant requested that the decision under appeal be set aside and that the European patent be revoked.

The respondent (proprietor) requested that the appeal be dismissed, or, alternatively, that in setting aside the decision under appeal the patent be maintained in amended form on the basis of one of the sets of claims filed as auxiliary requests 1 to 8 with letter dated 4 November 2011, according to the changed order of those requests. The order into which the auxiliary requests were changed during the oral proceedings after a preliminary discussion concerning their admittance was: auxiliary requests 2 - 6, 1 and 8.

- II. Claim 1 according to the **main request** (which is identical to claim 1 of the patent as granted) reads as follows:

"1. An automated spraygun (1) to spray/atomize a product such as paint, lacquer enamel or similar, comprising

- a spraygun body (2) that includes several first conduits (22, 24, 26) feeding a product to be sprayed and a pressurized gas, furthermore a rest face (20) into which said first conduits issue in the form of first orifices (23, 25, 27);

- a foundation (3) including a seating face (30) against which is forced said rest face (20), furthermore several second feed conduits (32,34, 36) that are complementary to said first feed conduits (22, 24, 26) and terminating on one hand into connection elements (48) to spray product and to pressurized gas feeds and on the other hand into second orifices (33, 35, 37) in said seating face, said first and second orifices being configured in a manner that each first rest orifice shall coincide with a respective second orifice when said spraygun body rest face (20) is forced against said foundation seating face (30);
- seals (41, 43, 45, 47, 49) to be inserted between said seating and rest faces (20, 30) and peripherally located at each junction between a first and a second orifice respectively;
- means (50, 51, 60) allowing quick assembly and locking of said spraygun body to said foundation,
- means (51) positioning said spraygun body on said face and designed to project perpendicularly from one of said faces (20) and to translate orthogonally into the other (30) of said faces in a manner to position said rest face (20) relative to said foundation face (30) in their plane; and characteristic in that said rapid assembly and locking means comprise :
- locking stub (50) projecting perpendicularly from one (20) of said faces and orthogonally translating into the other (30) of said faces; and

- quick locking means (60) applying an axial pull on said locking stub to keep said rest and seating faces forced against each other".

Claim 1 according to **auxiliary request 1** comprises the additional feature over claim 1 of the main request:
"characterized in that positioning means at least comprise one centering pin (51) configured in a manner to perpendicularly project from one (20) of said faces and able to enter at least one receptacle (53) fitted into the other (20) of said faces and able to enter at least one receptacle (53) fitted into the other (30) of said faces by translating perpendicularly to said faces (20, 30)".

Claim 1 according to **auxiliary request 2** comprises the additional feature over claim 1 of the main request:
"characterized in that said locking means (60) for said locking stub (50) are rotatably mounted about an axis which is substantially perpendicular to said stub and are able to convert their rotation about their axis to an axial pull motion of said locking stub".

Claim 1 according to **auxiliary request 3** comprises the additional feature over claim 1 of the main request:
"characterized in that the locking stub (50) is fitted with a rod (54) and a projecting head (57) of which the width exceeds that of said rod".

Claim 1 according to **auxiliary request 4** comprises the additional features over claim 1 of the main request:
"characterized in that said locking means (60) for said locking stub (50) are rotatably mounted about an axis which is substantially perpendicular to said stub, are

able to convert their rotation about their axis to an axial pull motion of said locking stub and are configured in a hollow (62) which is substantially perpendicular to and converging with a receptacle (61) entered by said projecting locking stub (50)".

Claim 1 according to **auxiliary request 5** comprises the additional features over claim 1 of the main request:

"characterized in that:

- said locking means (60) for said locking stub (50) are rotatably mounted about an axis which is substantially perpendicular to said stub and are able to convert their rotation about their axis to an axial pull motion of said locking stub,
- said locking stub (50) is fitted with a rod (54) and a projecting head (57) of which the width exceeds that of said rod,
- said locking means (60) are configured in a hollow (62) which is substantially perpendicular to and converging with receptacle (61) entered by said projecting locking stub (50), and that
- said locking means include a geometry-of-revolution barrel (69) fitted with a cavity (63) that runs parallel to its axis and that intersects with a radial cavity (64) exhibiting a width larger than that of the head (57) of said locking stub (50), said axial and radial cavities (63, 64) communicating with a slot (65) which is transverse to said barrel and which exhibits a width larger than that of the rod (54) of said locking stub (50) but less than that of the head (57) of said locking stub (50)".

Claim 1 according to **auxiliary request 6** comprises the additional features over claim 1 of auxiliary request 5:

"and that

- said locking means (60) of said locking stub (50) comprises at least one ramp (68) able to rest against the base of said stub's head (57) and created by a thickness variation in said hollowed barrel and enabling pulling said locking stub (50)".

Claim 1 according to **auxiliary request 7** comprises the additional features over claim 1 of auxiliary request 6: "the cylindrical barrel (60) being fitted with anti-translation keying means (70)".

Claim 1 according to **auxiliary request 8** comprises the additional features over claim 1 of the main request: "characterized in that the automated spraygun comprises at least one tubular socket (72) able to enter a junction between a first feed conduit (24) of the spraygun body (2) and a complementary second feed conduct (34) of the foundation (3), said tubular socket (72) comprising a first portion able to enter the first orifice and a second portion able to enter the corresponding second orifice".

III. The following prior art documents considered in the impugned decision are referred to:

D1 EP-A-0 841 097

D2 Prospectus VBH "Technik System Küchen
Schlösser Bänder"

D3 DE-U-298 02 610

D4 DE-B-102 42 787.

IV. Impugned decision

- (a) According to the impugned decision (reasons, point 3.2) it is agreed that D1, representing the closest prior art, discloses an automated spray gun according to the pre-characterising portion of claim 1. Furthermore it is agreed that D2, D3 or D4 each discloses the features of the characterising part of claim 1.

- (b) Concerning the combined consideration of the teaching of D1 with the teaching of D2, D3 or D4 it is referred to the disclosures of D2 and D3 relating to quick couplings for furniture and to the disclosure of D4 relating to a quick coupling for parts of a car body.

In this respect it is also referred to T 176/84 (OJ EPO 1986, 50) according to which "solutions from a different field can only be regarded as being obvious, when they solve the same problem".

Applying the principle of this decision it is further noted with respect to the problem, that the patent in suit states "Here, the problem is supposed to be the avoidance of wear in the sealing rings".

Based on this understanding of the problem underlying the patent in suit and the disclosures of D2, D3 or D4 it is concluded "However, no sealing ring or corresponding problem is present in D2, D3 and/or D4".

- (c) Apparently for the situation in which the teaching of D2 is considered in combination with the teaching of D1 it is stated: "... there are numerous variations of quick couplings which do not require rotational movement of the parts to be interconnected. Although the skilled person "could" choose a quick coupling as disclosed in D2, there is no hint why he "should" choose this coupling. The combination of D1 with D2 as suggested by the opponent is based on an "ex-post analysis".
- (d) The subject-matter of claim 1 according to the then main request being identical with claim 1 of the present main request, the latter has thus been considered as involving an inventive step (reasons, point 3.3).

V. The submissions of the appellant can be summarised as follows:

- (a) Claim 1 of the main request comprises a combination of features defining a spraygun body, a foundation and rapid assembly and locking means allowing quick assembly and locking of the spraygun body to the foundation. The features of the pre-characterising portion of claim 1 are known from D1, which in the impugned decision has been considered correctly as the closest prior art. The features of the characterising portion define a different type of rapid assembly and locking means than the one involved in the spraygun of D1.

- (b) The rapid assembly and locking means defined by the features of the characterising portion of claim 1 are known from D2, D3 or D4. The impugned decision erroneously has not properly considered these documents, for the reason that they belong to a different technical field. Despite the circumstances under which the rapid assembly and locking means according to these documents are used it needs to be considered that they all belong to the general field of rapid assembly and locking means. Consequently, the person skilled in the art would have considered the teaching of any one of these documents in an attempt to improve the bayonet type rapid assembly and locking mechanism of D1.
- (c) The fact that neither D2, D3 nor D4 discloses rapid assembly and locking means that have to fulfil the condition that the parts assembled and locked are connected and **sealed in a liquid / gas tight manner** would not have hindered the person skilled in the art to take the teaching of any one of these documents into account. The reason is that such a condition is already known from the closest prior art D1 and it is apparent from D2, D3 or D4 that the respective rapid assembly and locking means can be used for the spraygun of D1 without the required sealing being impaired. It is furthermore evident that replacing the bayonet type rapid assembly and locking means of D1 with the type known from either D2, D3 or D4 leads to an improvement reducing seal degradation since, unlike the bayonet type rapid assembly and locking means according to D1, this type of rapid assembly

and locking means does not require rotation of the spraygun body relative to the foundation during assembly and locking.

(d) Considering any one of documents D2, D3 or D4 it is apparent for the person skilled in the art that the respective rapid assembly and locking means can be used to replace the rapid assembly and locking means of the bayonet type in the spraygun of D1. This can be done without modifications going beyond the common technical practice required concerning the spraygun body, the foundation as well as the rapid assembly and locking means.

(e) The above reasons given with respect to the spraygun according to claim 1 of the main request apply likewise with respect to the subject-matters of the claims 1 of the auxiliary requests 1 to 8 since in these claims the structure of the rapid assembly and locking means as well as of the positioning means, which in claim 1 according to the main request is only defined in general terms, is merely further defined. These further definitions do not go beyond the structure of the rapid assembly and locking means as well as of the positioning means disclosed in any of the documents D2, D3 or D4 or as derivable therefrom in an obvious manner.

VI. The submissions of the respondent can be summarised as follows:

- (a) Claim 1 of the main request comprises a combination of features defining a spraygun body, a foundation and a rapid assembly and locking means. According to the established case law the subject-matter of such a claim is to be considered as involving an inventive step if, as it is presently the case, it comprises in addition to features which may be known from the closest prior art D1, features which are not known from any other document taken into account by the person skilled in the art.
- (b) According to D1 the spraygun body is connectable to the foundation via a rapid assembly and locking means of the bayonet type. Since such a rapid assembly and locking means inherently requires that the spraygun body is rotated relative to the foundation, seals present between mating surfaces of the spraygun body and the foundation are subject to degradation. This may also result in product and pressurised gas leaks at the mating surfaces, which should be maintained leak-proof.
- (c) Documents D2, D3 or D4, which define rapid assembly and locking means of a type different to the bayonet type provided according to D1, will not be considered by the skilled person since, as correctly stated in the impugned decision, they relate to different technical fields. Thus D2 and D3 relate to quick couplings for furniture elements and D4 for parts of a car body. In no

case seals are provided or required. Only with inadmissible relying on hindsight, is it apparent for the person skilled in the art to apply, in combination with the closest prior art according to D1, the teaching of D2, D3 or D4.

- (d) Even if the person skilled in the art, starting from the spraygun according to D1, had taken D2, D3 or D4 into account this would not have led in an obvious manner to the spraygun according to claim 1 of the main request since it is evident that the rapid assembly and locking means of D2, D3 or D4 are, due to their different purposes, not suited for use with the rapid assembly of the spraygun according to D1. Such sprayguns allow for frequent assembly and disassembly of the spraygun body with and from its foundation due to e.g. maintenance reasons. This is not the case for furniture parts for which it is rare that they are disassembled.
- (e) The above reasons given with respect to the spraygun according to claim 1 of the main request apply even more with respect to the subject-matters of the claims 1 of the auxiliary requests 1 to 8 since in these claims the rapid assembly and locking means as well as the positioning means are further defined.
- (f) Auxiliary requests 1 to 8 should be admitted despite their substantiation as late as at the oral proceedings. They have been filed with the response to the grounds of appeal and are based on the combination of the features of claim 1 and of

dependent claims as granted. Submission of such auxiliary requests was thus to be expected and neither the Board nor the appellant were required to make investigations on their own to understand the subject-matter of the claims 1 of these auxiliary requests and/or the reasons why such requests have been filed.

VII. In the annex to the summons for oral proceedings (in the following: the annex) i.a. the following was referred to:

- (a) The pre-characterising portion of claim 1 of the main request is known from D1 and the characterising portion of this claim defines a different type of rapid assembly and locking means.
- (b) Unlike the rapid assembly and locking means of D1, which is of the bayonet type, the ones disclosed in D2, D3 or D4 do not require rotational movement when the spraygun body is locked into or unlocked from the foundation.
- (c) Based on this understanding of the subject-matter of claim 1 and the teachings of D1, D2, D3 or D4 it was indicated that for the examination of inventive step it is of importance which person skilled in the art is to be considered and whether the person skilled in the art would, starting from the closest prior art according to D1, take the teaching of any one of the documents D2, D3 and D4 into consideration.

- (d) Furthermore, the question was raised whether, in case it applies, combined consideration of the teaching of D1 with the teaching of D2, D3 or D4 would have led to the replacement of the rapid attachment and locking means of the spraygun of D1 with one of the types known from these further prior art documents.
- (e) Concerning the auxiliary requests filed in response to the grounds of appeal it was indicated (annex, point 9) "It appears to be premature to comment on the auxiliary requests 1 to 8 filed with respondent's letter dated 4 November 2011 (cf. page 10, last paragraph) since the respondent has not given any explanation with respect to the amendments introduced, the basis in the application as originally filed for these amendments and the merits of the claims of these requests in addressing the issue of inventive step".

VIII. Oral proceedings before the Board, at the end of which the decision was announced, took place on 18 February 2014.

Reasons for the Decision

1. *Subject-matter of claim 1 according to the main request*
- 1.1 Claim 1 is, as defined by its pre-characterising features, directed to an automated spraygun comprising a spraygun body with a rest face and a foundation with a seating face. These faces are forced against each

other whereby first openings of conduits in the rest face feeding a product to be sprayed and a pressurized gas coincide with second openings of complementary conduits in the seating face.

Seals are to be inserted between the seating face and the rest face and are peripherally located at each junction between a first and second orifice, respectively.

Furthermore, means allowing quick assembly and locking of the spraygun body to the foundation and means positioning the spraygun body are provided.

It is to be noted that the features directed to the provision of seals and the features directed to the means allowing quick assembly and locking are, as referred to by the appellant, given without establishing any relationship between them.

- 1.2 The characterising features of claim 1 solely define the means allowing quick assembly and locking, referred to as rapid assembly and locking means (which in the following for the sake of brevity is addressed as: rapid locking means).

According to this further definition the rapid locking means comprise:

- (a) a **locking stub projecting perpendicularly** from one of said faces and orthogonally translating into the other of said faces; and

(b) **quick locking means applying an axial pull on said locking stub** to keep said rest and seating faces forced against each other.

1.3 It is to be noted that both the locking stub and the quick locking means as well as their cooperation are defined by the general manner of features (a) and (b) only.

Furthermore it is to be noted that the rapid locking means are defined according to the characterising features of claim 1 without any reference to the seals to be inserted between the mating faces of the spraygun body and the foundation. What is established about them is as it is the case for the features of the pre-characterising portion of claim 1 (cf. point 1.1 above).

1.4 The effect of the rapid locking means defined by features (a) and (b) is that for the locking of the spraygun to the foundation only an axial pull between these two parts occurs. Thus no additional rotational movement between the parts to be locked is required as it is the case for the spraygun according to the closest prior art D1 (cf. point 2 below).

With respect to the seals inserted between the seating and the rest face being compressed via the axial pull, this leads to the seals not being subjected to friction and shearing as it would be the case if a rotational movement is required for locking.

Further effects as discussed in the following (cf. point 3) can possibly be derived concerning the structure of the rapid locking means according to

features (a) and (b) and the manner in which it is used to lock or unlock the spraygun body to / from the foundation.

2. *Disclosure of D1*

2.1 It is common ground that, corresponding to the impugned decision (reasons, point 3.2), D1 discloses an automated spraygun as defined by all the features of the pre-characterising portion of claim 1. The known automated spraygun thus comprises a spraygun body 2, a foundation 70, conduits terminating in orifices 24, 26, 28, 30 and 32 surrounded by seals 16, rapid locking means (Dreh-Spann-Verbindungsmittel 6, 7) and means 34 for positioning the spraygun body on the foundation (cf. D1, paragraphs [0010] and [0011]; figures 1, 2).

2.2 The rapid locking means according to D1 is of the bayonet type which, as referred to in the patent in suit (paragraph [0005]), requires that for locking or unlocking, the spraygun body is rotated relative to the foundation. According to D1 this rotation makes an inclined surface 40 of a locking stub 8 projecting perpendicularly from the spraygun body run against a locking part 37 of the foundation, such that an axial pull is generated as required for a liquid proof sealing between the faces of the spraygun body and the foundation (cf. D1, paragraphs [0013] and [0014]; figures 4, 5).

3. *Features distinguishing the spraygun according to claim 1 (main request) from the spraygun according to D1 and their effect(s)*

It is common ground that the spraygun according to claim 1 is distinguished from the one known from D1 by the characterizing features of claim 1 recited above (point 1.2) as features (a) and (b).

It is further common ground that one effect of these features is that in order to lock the spraygun body on the foundation use of the rapid locking means results in an axial pull being provided to force the rest and seating faces against each other, just as the bayonet means of D1 obtain.

Further effects can, as argued by the appellant, be seen in the structure and the use of the rapid locking means of claim 1 being simplified as compared to the rapid locking means of the bayonet type according to D1.

According to the respondent a further effect to be considered is that, as stated in the patent in suit (paragraph [0006], [0007]), seal degradation, due to the spraygun body no longer being rotated with respect to the foundation according to D1, is eliminated.

4. *Objective technical problem*

- 4.1 The Board considers the argument of the appellant not to be without merit, that the elimination of seal degradation is not to be considered as an immediate effect resulting from the distinguishing features as such, but one resulting from the application of the

rapid locking means according to the distinguishing features (a) and (b) in that an axial pull is provided to force the rest and seating faces against each other without rotational movement of the spraygun body relative to the foundation being required. This view appears to be also supported by the fact that neither in the pre-characterising portion of claim 1 nor in its characterising portion a relationship is established between the rapid locking means on the one hand and provision of seals on the other hand (cf. points 1.1 and 1.3 above).

4.2 This aspect needs not be further treated since in the following, based on the arguments of the respondent, in line with the approach according to the impugned decision (reasons, point 3.1) and to the advantage of the respondent, the effect of elimination of seal degradation (cf. patent in suit, paragraphs [0006] and [0007]) will be taken into account. This reflects also the essence of the related discussion during the oral proceedings.

4.3 Considering this effect the **problem** which is solved in view of D1 is, as referred to in the patent in suit (paragraph [0007]) and the impugned decision (reasons, point 3.1), namely to provide a rapid locking mechanism such that seal degradation is eliminated.

5. *Solution of the problem according to claim 1 (main request)*

It is not in dispute that the above problem is solved by the spraygun according to claim 1 (main request), given that the rapid locking means according to

features (a) and (b) requires only axial movement for locking and unlocking of the spraygun body with respect to the foundation. Although the appellant raised doubts concerning the validity of this understanding of features (a) and (b) neither this point nor a different understanding of the characterising features of claim 1 to the detriment of the respondent, have been further considered during the oral proceedings and in this decision.

6. *Disclosures of D2, D3 and D4*

6.1 It is common ground that, as stated in the impugned decision (reasons, point 3.2), D2, D3 or D4 disclose rapid locking means of the type as defined by the characterising portion of claim 1 of the main request.

6.2 As indicated in the annex (point 8.4.2) D3 for example discloses rapid assembly and locking means which comprise, corresponding to features (a) and (b), a locking stub 3 projecting perpendicularly from one of the faces and orthogonally translating into the other of said faces and quick locking means (eccentric part 2) applying an axial pull on said locking stub 3 to keep said rest and seating faces forced against each other (cf. description of D3, page 2, paragraph 3 from the bottom and figure 1).

6.3 Similar disclosures with respect to the locking means are given by D2 and D4 (cf. the figures of D2 and D4, paragraphs [0025] and [0026] and figure 2).

6.4 Following the discussion during the oral proceedings the focus will be mainly on the teaching of document D3.

7. *Consideration of the teachings of documents D2, D3 or D4 as further prior art*

7.1 The parties are of different opinion whether or not the rapid locking means of the type as known from D2, D3 or D4 are to be considered in the examination of inventive step in combination with the closest prior art according to the spraygun of D1.

7.2 According to the appellant the spraygun according to claim 1 (main request) does not comprise any features relating the rapid locking means to the seals provided. Moreover, the spraygun of claim 1 is distinguished from the one according to D1 by features solely relating to the structure of the rapid locking means and the manner in which this means functions, with no further reference to the seals.

The person skilled in the art, aware of the fact that the rapid locking means of D1 is of the bayonet type which inherently requires rotation of the spraygun body relative to the foundation, would, in an attempt to replace this type of rapid locking means by one having a simplified structure and which can be activated with less effort, take documents like D2, D3 and D4 into consideration, which disclose another type of rapid locking means. Because of this, the skilled person has every reason to take these documents into consideration in an attempt to improve the rapid locking means referred to in D1.

This holds true despite the particular applications of the rapid locking means referred to in particular in

documents D2, D3 or D4 since it is evident that these rapid locking means are not limited to these particular applications, but can be applied to connect different parts as well, like for example the spraygun body and the foundation of the spraygun according to D1.

This applies according to the appellant all the more if, starting from the spraygun of D1, the problem to be considered is to eliminate seal degradation occurring in this spraygun, since it is apparent that such seal degradation is associated with the rotational movement required for the activation of the rapid locking means of the bayonet type and that such a rotational movement does not occur if a rapid locking means according to D2, D3 or D4 is used to replace the one foreseen according to D1.

- 7.3 According to the respondent the skilled person would not have considered any of the documents D2, D3 or D4 for the reasons as given in the impugned decision (reasons, point 3.2).

The reasons are that none of these documents relates to rapid locking means to be used to lock a **spraygun body to a foundation**, which requires that seals are provided such that any product or pressurised gas leak is precluded as referred to in the patent in suit (cf. paragraph [0007]).

There is thus no reason or incentive for the person skilled in the art to consider documents disclosing rapid locking means if it is evident that they not even remotely relate to sealing and the avoidance of leakage problems associated with the use of their rapid locking

means. The latter definitely holds true concerning the rapid locking means of D2, D3 and D4.

The skilled person would not have taken any of these documents into account due to the fact that D2 and D3 relate to the connection of furniture parts whereas D4 relates to connection of car body parts.

7.4 In the annex (point 8.4.3) it has been indicated that it appears to be questionable whether the conclusion of the impugned decision not to take D2, D3 or D4 into account as further prior art is correct, considering that the spraygun according to D1 represents the closest prior art and the problem to be solved (cf. point 4.3 above) has been formulated in view of this known spraygun, which already has seals in place at the interface between the spraygun body and the foundation.

7.4.1 As further referred to in the annex as a preliminary opinion, the respondent is correct in its assessment that the disclosure of D3 relates to locking means for which as sole application the connection of wooden parts is disclosed. Considering the disclosure of D3 it is, however, apparent that the locking means need not exclusively be used for the connection of wooden parts but can act in a similar manner also for other elements to be connected by a perpendicular movement, as it is shown for the furniture parts 5 and 7 (cf. figure 1 of D3).

7.4.2 As further stated in the annex this more general understanding of the disclosure of D3 is, as discussed during the oral proceedings, supported by the IPC

classification F16B of this document which concerns devices for fastening or securing **constructional elements** or **machine parts** together, with the subclass 31/00 referring to screwed connections specially modified in view of the tensile load.

7.4.3 It is, as further indicated in the annex (point 8.4.4), of great importance to determine which **person skilled in the art** is to be considered, in order to be able to assess which kind of documents will be taken into account when attempting to solve the problem starting from the spraygun of D1.

7.4.4 As stated in the annex as a preliminary opinion and as referred to by the appellant during the oral proceedings, since the solution according to claim 1 of the patent in suit lies essentially in the provision of locking means, by which e.g. degradation of the seals due to relative rotation of the faces to be connected is avoided, the person skilled in the art is

- either one of whom it can be expected to consider the technical field of fastening / securing constructional parts, in particular with respect to tensile load, which corresponds to the IPC classification F16B 31/00 (i.e. of D3) or

- one who consults an expert in this technical field ("the" skilled person is actually a team of skilled persons).

7.4.5 Either way it has, as indicated by the Board during the oral proceedings, to be concluded that in the examination of inventive step starting from the

spraygun of D1 the rapid locking means according to D3 needs to be taken into account.

7.5 The opinion of the impugned decision (reasons, point 3.2) "As set out in decision T 176/84 (*supra*) solutions from a different field can only be regarded as being obvious, when they solve the same problem." does not justify that document D3 is not considered as further prior art in combination with the closest prior art according to D1.

7.5.1 The reason is that the problem needs to be solved taking proper account of the spraygun according to the closest prior art and that starting from the spraygun according to D1 application of the teaching of D3 concerning the structure and function of the respective rapid locking means contributes, as can be derived from the following, to solve the problem (cf. point 4.3 above) in a manner rendering the subject-matter of claim 1 obvious.

In other words it is not required that the further prior art document D3 relates to rapid locking means disclosed in connection with seals of the kind referred to in D1.

What is required for the person skilled in the art to take the teaching of D3 into consideration is that - as is presently the case - it is apparent that the teaching of this document is such that this type of rapid locking means is suited to be used under the condition imposed by D1, that seals between the mating faces of the spraygun body and the foundation are to be

considered and do not get into the way of the proper functioning of the rapid locking means according to D3.

Presently (as in D1) the rapid locking means evidently not only fulfil this requirement but moreover contribute to seal degradation due to relative rotation of the spraygun body versus the foundation being eliminated.

This holds true all the more considering that, as indicated above, claim 1 of the main request does not comprise any indication pointing to a relationship between the rapid locking means on the one hand and the provision of the seals (cf. points 1.1 and 1.3 above).

- 7.6 Concerning the consideration of document D3 the respondent furthermore failed to convincingly counter the argument of the appellant that no prejudice is apparent which would have led the skilled person not to take this document into account.

The respondent further stated that only based on **hindsight** it can be assumed that the skilled person would have considered the teaching of D2, D3 or D4 in combination with the teaching of D1 as closest prior art. From the reasoning developed above it can be derived that the Board does not agree. Moreover, the statement was not supported by facts other than the objection that the person skilled in the art would not take any of documents D2, D3 or D4 into account.

- 7.7 According to the Board's reasoning the person skilled in the art considers, next to the spraygun according to the closest prior art document D1, further prior art documents like D3, the teaching of which evidently can

be expected to contribute to the solution of the problem starting from D1.

8. *Obviousness*

8.1 As indicated in the annex (point 8.5) and discussed during the oral proceedings, applying the well known problem-solution approach in the examination of inventive step (as also referred to in respondent's letter dated 4 November 2011, page 7, point "G) Patent legal aspects), it is necessary to examine whether, starting from the closest prior art according to D1 in an attempt to solve the problem (point 4.3 above) consideration of the locking means of e.g. D3 (cf. point 7.7 above) leads without inventive skills being involved to the subject-matter of claim 1 (main request).

8.2 As referred to in the annex (point 8.5.3) the arguments given by the respondent that even if one of the documents D2, D3 or D4 is considered as further prior art, this would not lead in an obvious manner to the solution of claim 1 according to the main request are as follows

- (a) none of these known locking means is suited for the application referred to in claim 1 of the patent in suit (or disclosed by D1), namely to provide a **liquid tight seal** between an spraygun body and a foundation
- (b) the frequency of locking / unlocking is much higher for the locking means of claim 1 of the patent in suit than for the furniture elements to

be locked according to D2 or D3 or the automotive parts according to D4; the locking means according to these documents is therefore not suited for the use according to claim 1.

Furthermore, the respondent argued that

(c) according to D2 or D3 only faces of wooden boards arranged perpendicularly to one another are locked via the rapid locking means. For that reason the person skilled in the art would not consider these documents in case mating faces of the spraygun body and the foundation arranged parallel to each other are to be axially pulled together.

8.3 As indicated in the annex and discussed during the oral proceedings, as far as these arguments can be considered supported by features of claim 1, the Board finds that it has to be taken into account that the starting point for the examination of inventive step is the spraygun of D1 which already allows a liquid tight sealing of a spraygun body with a foundation and has a frequency of locking / unlocking as required for such an automatic spray gun.

8.3.1 Taking this disclosure of D1 into consideration the person skilled in the art charged with the task to solve the problem (cf. point 4.3 above) takes D3 into account as further prior art (cf. point 7.7).

8.3.2 It is evident that, as argued by the appellant, the person skilled in the art considering the teaching of D3 inevitably becomes aware of the fact that this document not only discloses rapid locking means of a

type different to the bayonet type rapid locking means of D1, but also of a type which allows locking / unlocking where only axial movement of the parts to be connected is required or involved. Consequently, since no rotation of these parts occurs, it is also evident that degradation of the seals of the apparatus of D1 due to such a rotation will be avoided by replacing the bayonet type quick locking means of D1 by the rapid locking means as disclosed in D3.

8.3.3 As a consequence consideration of the spraygun according to the closest prior art D1 together with the teaching of D3 leads, in an attempt to solve the problem (point 4.4 above) in a straightforward manner to the spraygun of claim 1 (main request) which therefore does not involve an inventive step (Article 56 EPC).

8.3.4 According to the respondent due to the different nature of the parts to be connected and the frequency at which connection / disconnection occurs according to D1 (according to the patent in suit, paragraph [0005]: for maintenance) or D3 (mainly once in a product-lifetime of the products assembled via the rapid locking means) it would not be obvious to replace the rapid locking means of D1 with the type of locking means as known from this document. Furthermore, the rapid locking means known from D3 apparently lacks the strength of the rapid locking means used in the spraygun of D1.

Concerning these arguments the Board considers the argument of the appellant to be more convincing, namely that the person skilled in the art realises that the bayonet type rapid locking means of the spraygun of D1

can be replaced by the principle of the rapid locking means of D3 without essential modifications lying outside common technical practice being required. In doing so the rapid locking means replacing the bayonet type locking means of D1 will of course be provided with a strength such that it can sustain the forces acting on the rapid locking means it replaces.

Indeed, considering e.g. the quick locking means of D3 with a locking stub 4 and a quick locking means (excenter 2) it is evident that these elements can replace the locking stub 50 and the quick locking means according to D1 without essential modifications concerning the spraygun body and the foundation to be locked to each other and the rapid locking means as known from D3 being required. The fact, referred to by the respondent, that as shown in figure 1 of D3 two panels of approximately equal thickness which are perpendicularly arranged with respect to each other are joined by the rapid locking means does not hinder the person skilled in the art to use this rapid locking means also in the situation given for the spraygun according to D1 where, as derivable from figures 1 to 3, two elements are joined via parallel mating surfaces of approximately equal size.

- 8.3.5 For completeness' sake the Board wishes to point out that the affirmative answer to the question of whether or not the rapid locking means of D3 is suited to replace the one provided according to D1 holds true all the more considering that these means are in any case defined in claim 1 only in general terms (cf. points 1.1 and 1.3).

8.3.6 For completeness' sake the Board further indicates that, as stated in the annex (point 8.5.4), the reason given in the impugned decision: "Furthermore, as also stated by the opponent, that there are numerous variations of quick couplings which do not require rotational movement of the parts to be interconnected" (reasons, point 3.2), which is not further supported by facts or evidence and is not related to the actual subject-matter of claim 1. It is claim 1 which is to be examined with respect to inventive step and not subject-matter concerning possible other solutions.

This applies likewise with respect to the corresponding argument raised by the respondent: "The person skilled in the art would have had several other ways to solve this given problem, such as modifying the seals, improving the rotation, etc." (cf. respondent's letter dated 4 November 2011, page 5, paragraph 3).

8.4 Concerning the application of the so called "could-would" question in the examination of inventive step (cf. impugned decision, reasons, point 3.2; respondent's letter dated 4 November 2011, page 7, point "G) Patent legal aspects") it is, as stated in the annex (cf. point 8.5.5) and discussed during the oral proceedings, necessary to take into account that following the problem-solution approach in the examination of inventive step it needs to be determined whether or not the skilled person **would**, starting from the closest prior art - presently the spraygun according to D1 - take further prior art - presently the teaching of D3 - in consideration to solve the problem (and thus "in expectation of an improvement" as referred to in the above mentioned respondent's letter).

The problem concerned is the one formulated based on the effects of the distinguishing features of the spraygun according to claim 1 over the spraygun of D1 (cf. point 4.3).

As indicated above the Board finds that the person skilled in the art **would** - not only could - consider the teaching of document D3 since this teaching relates to a rapid locking means evidently solving the problem (cf. point 7.7 above).

8.5 Proceeding in this manner also an inadmissible *ex post facto* approach is, as indicated in the annex (cf. point 8.5.6) and discussed during the oral proceedings, avoided in that no knowledge of the invention is retrospectively used and proper account is taken of the actual distinguishing features of claim 1 and their technical effect.

9. *Inventive step concerning claims 1 of auxiliary requests 2 to 7*

9.1 Auxiliary requests 2 to 7 have been admitted into the appeal proceedings despite their substantiation as late as at the oral proceedings (cf. point 10 below where it concerns auxiliary requests 1 and 7). In that respect it has been taken into account that the claims 1 of these requests comprise additional features of dependent claims, which further continue to define the rapid locking means of claim 1 according to the main request, in a general manner, without reference to structural features required to obtain the cooperation of the locking stub with the quick locking means

according to feature (b). Moreover, admission of these claims has not been objected to by the appellant.

9.2 The main argument of the respondent concerning inventive step was that even if it is assumed - contrary to the opinion of the respondent - that the person skilled in the art would consider the rapid assembly means of D3 in combination with the spraygun of D1, this would not render the additional features of the claims 1 of auxiliary requests 2 to 7 obvious, since various other possibilities would have existed to implement rapid locking means of the kind disclosed in D3 in a spraygun according to D1.

As indicated during the oral proceedings, such an argument which is based on subject-matter lying outside that defined by the claims 1 in question, cannot support the position that the sprayguns according to the claims 1 of auxiliary requests 2 to 7 involve an inventive step.

Concerning the subject-matter of each claim 1 of the auxiliary requests 2 to 7 it needs to be examined whether or not the additional features lead to subject-matter involving inventive step. In that respect the Board found, as indicated during the oral proceedings, the arguments of the appellant to be more convincing, according to which these additional features are either known from D3 or obvious in view of the structure of the rapid locking means disclosed by this document. In any case it does not go beyond common design practice to implement the rapid locking means known from D3 in the spraygun of D1 in a manner resulting in a spraygun according to the claims 1 of auxiliary request 2 to 7.

9.3 Applied to the subject-matters of claims 1 of auxiliary requests 2 to 7 the above considerations lead to the following.

9.3.1 Claim 1 according to **auxiliary request 2** comprises the additional feature over claim 1 of the main request: "characterized in that said locking means (60) for said locking stub (50) are rotatably mounted about an axis which is substantially perpendicular to said stub and are able to convert their rotation about their axis to an axial pull motion of said locking stub".

As argued by the appellant and discussed during the oral proceedings such a locking means is known from D3 and thus cannot contribute to inventive step over the combination of the teachings of D1 and D3 as referred to for the subject-matter of claim 1 of the main request. According to D3 the excenter 2 cooperates with the locking stub 3 (page 2 of the description, paragraph 6, figure 1) in the manner defined in this claim 1.

9.3.2 Claim 1 according to **auxiliary request 3** comprises the additional feature over claim 1 of the main request: "characterized in that the locking stub (50) is fitted with a rod (54) and a projecting head (57) of which the width exceeds that of said rod".

As argued by the appellant and discussed during the oral proceedings such a locking means is known from D3 and thus cannot contribute to inventive step over the combination of the teachings of D1 and D3 as referred to for claim 1 of the main request. According to D3 the

locking stub 3 is fitted with a rod 3 and a projecting head 4 (page 2 of the description, paragraph 6, figure 1).

- 9.3.3 Claim 1 according to **auxiliary request 4** comprises the additional features over claim 1 of the main request: "characterized in that said locking means (60) for said locking stub (50) are rotatably mounted about an axis which is substantially perpendicular to said stub, are able to convert their rotation about their axis to an axial pull motion of said locking stub and are configured in a hollow (62) which is substantially perpendicular to and converging with a receptacle (61) entered by said projecting locking stub (50)".

As argued by the appellant and discussed during the oral proceedings such a locking means cooperating with a locking stub is known from D3 and thus cannot contribute to inventive step over the combination of the teachings of D1 and D3. See also the reasons given above for the claims 1 of auxiliary requests 2 and 3.

- 9.3.4 Claim 1 according to **auxiliary request 5** comprises the additional features over claim 1 of the main request: "characterized in that:
- said locking means (60) for said locking stub (50) are rotatably mounted about an axis which is substantially perpendicular to said stub and are able to convert their rotation about their axis to an axial pull motion of said locking stub,
 - said locking stub (50) is fitted with a rod (54) and a projecting head (57) of which the width exceeds that of said rod,

- said locking means (60) are configured in a hollow (62) which is substantially perpendicular to and converging with receptacle (61) entered by said projecting locking stub (50), and that

- said locking means include a geometry-of-revolution barrel (69) fitted with a cavity (63) that runs parallel to its axis and that intersects with a radial cavity (64) exhibiting a width larger than that of the head (57) of said locking stub (50), said axial and radial cavities (63, 64) communicating with a slot (65) which is transverse to said barrel and which exhibits a width larger than that of the rod (54) of said locking stub (50) but less than that of the head (57) of said locking stub (50)".

With the exception of the features relating to the locking means including a geometry-of-revolution barrel the reason given above with respect to lack of inventive step for the subject-matter of claim 1 according to auxiliary request 4 apply.

As argued by the appellant and discussed during the oral proceedings the feature of the locking means including a geometry-of-revolution barrel are also known from D3 (cf. the excenter 2 and its geometry enabling cooperation with the locking stub 3 as described on page 2 of the description, paragraphs 5, 6 and shown in figure 1). These features thus cannot contribute to inventive step over the combination of the teachings of D1 and D3 as referred to for claim 1 of the main request.

9.3.5 Claim 1 according to **auxiliary request 6** comprises the additional features over claim 1 of the fifth auxiliary request: "and that
- said locking means (60) of said locking stub (50) comprises at least one ramp (68) able to rest against the base of said stub's head (57) and created by a thickness variation in said hollowed barrel and enabling pulling said locking stub (50)".

As argued by the appellant and discussed during the oral proceedings the features relating to the provision of a ramp and its cooperation with the stub's head are known from D3 (cf. the excenter 2 forming a ramp and its cooperation with the locking stub 3 as described on page 2 of the description, paragraphs 5, 6 and shown in figure 1). These additional features thus cannot contribute to inventive step over the combination of the teachings of D1 and D3 as referred to for claim 1 of the main request.

9.3.6 Claim 1 according to **auxiliary request 7** comprises the additional features over claim 1 of auxiliary request 6: "the cylindrical barrel (60) being fitted with anti-translation keying means (70)".

According to the description of the patent in suit the anti-translation keying means serves to keep the barrel in its housing (cf. paragraph [0063]).

It is correct that, as stated by the respondent, such keying means are not provided for the barrel (excenter 2) of D3. Apparently the cooperation of the locking stub with the excenter suffices, as can be derived from figure 3 of D3, to keep the barrel (excenter 2) in its

housing. The Board furthermore considers the opinion of the appellant correct that in case further means would be required to keep the excenter in its housing, provision of anti-translation keying means comes within the general technical practice of the skilled person, i.e. without inventive step being involved.

9.4 Thus none of these additional features can contribute to inventive step being involved by the subject-matter of any one of these claims 1 (Article 56 EPC).

10. *Admissibility of auxiliary requests 1 and 8*

10.1 Claim 1 according to **auxiliary request 1** comprises the additional features over claim 1 of the main request: "characterized in that positioning means at least comprise one centering pin (51) configured in a manner to perpendicularly project from one (20) of said faces and able to enter at least one receptacle (53) fitted into the other (20) of said faces and able to enter at least one receptacle (53) fitted into the other (30) of said faces by translating perpendicularly to said faces (20, 30)".

10.2 Claim 1 according to **auxiliary request 8** comprises the additional features over claim 1 of the main request: "characterized in that the automated spraygun comprises at least one tubular socket (72) able to enter a junction between a first feed conduit (24) of the spraygun body (2) and a complementary second feed conduit (34) of the foundation (3), said tubular socket (72) comprising a first portion able to enter the first orifice and a second portion able to enter the corresponding second orifice".

10.3 Among the circumstances to be taken into account concerning the question of whether auxiliary requests 1 and 8 are to be admitted or not, it needs to be considered that the auxiliary requests 1 to 8 have been filed with the respondent's response to the appeal dated 4 November 2011 indicating "The patent holder requests that oral proceedings take place and files a main request (identical as the one allowed by the Opposition Division) and several auxiliary requests" (page 10, last paragraph).

The respondent at that time did not submit a single argument why the grounds of the appeal should be regarded as unfounded in view of these auxiliary requests.

10.4 Indeed, these auxiliary requests have only been substantiated with respondent's letter dated 16 January 2014 after receipt of the Board's annex to the summons in which it was stated (point 9) "It appears to be premature to comment on the auxiliary requests 1 to 8 filed with respondent's letter dated 4 November 2011 (cf. page 10, last paragraph) since the respondent has not given any explanation with respect to the amendments introduced, the basis in the application as filed originally for these amendments and the merits of the claims of these requests in addressing the issue of inventive step".

10.5 The statement of the Board given in the annex concerning the lack of substantiation of the auxiliary requests cannot justify the late substantiation and the admittance of these requests, since this statement only

establishes the factual situation and does not introduce any new issue.

- 10.6 The Board, essentially following its earlier decision T 1732/10 (not published in OJ EPO, reasons point 1.5, 4th paragraph) in a different composition, considers that unsubstantiated requests in principle become effective only at the date on which their substantiation takes place. Since the substantiation is only provided as late as at the oral proceedings, the Board is of the opinion that admittance of these requests is subject to its discretion according to Article 13(1) RPBA, which, according to the established jurisprudence, is exercised taking due account of the circumstances of the case. Among the circumstances to be taken into account is i.a. the question whether the claims 1 of the auxiliary requests converge in the sense that the subject-matter of the lower ranking requests is further defined i.e. with the intention to counter objections with regard to the preceding requests. See in this respect also T 1685/07 (not published in OJ EPO, point 6 of the reasons).

It is apparent that, as discussed during the oral proceedings, these criteria are not fulfilled with respect to the claims 1 of auxiliary requests 1 and 8, now taken in the order of the auxiliary requests as determined by the respondent during the oral proceedings. Auxiliary requests 2 to 7 were to be treated first, followed by auxiliary requests 1 and 8.

- 10.7 The claims 1 according to auxiliary requests 1 and 8 do not further limit features of the claims 1 of the preceding auxiliary requests 2 to 7, all relating to

the rapid assembly and locking means, but instead comprise additional features added to claim 1 of the main request (cf. point II above) relating to the centering pin and the tubular socket, respectively.

Since these claims 1 thus do not define subject-matter convergent with the preceding requests and the respondent did not give a convincing justification for their late substantiation, the Board for reasons of procedural efficiency exercised its discretion to not admit these requests into the proceedings.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

G. Nachtigall

H. Meinders