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D E C I S I O N
of 6 May 1998

Case Number: T 0694/97 - 3.2.1

Application Number: 93903186.0

Publication Number: 0623193

IPC: F16B 21/04, F16K 31/02

Language of the proceedings: EN

Title of invention:
Operating device

Applicant:
Danfoss A/S

Opponent:
-

Headword:

Relevant legal provisions:
EPC Art. 56, 122

Keyword:
"Restitutio - all due care - isolated mistake"
"Inventive step (yes)"

Decisions cited:

Catchword:



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Boards of Appeal

Chambres de recours

Case Number: T 0694/97 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 6 May 1998

Appellant:

Danfoss A/S
Nordborgvej 81
DK-6430 Nordborg (DK)

Representative:

Decision under appeal:

Decision of the Examining Division of the
European Patent Office posted 17 January 1997
refusing European patent application
No. 93 903 186.0 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: F. A. Gumbel
Members: P. Alting van Geusau
J.-C. Saisset

Summary of Facts and Submissions

- I. European Patent application No. 93 903 186.0, filed on 21 January 1993 as the international application PCT/DK93/00019, and published under the publication No. WO 93/15326, was refused by a decision of the Examining Division dated 17 January 1997.

The Examining Division held that the subject-matter of claim 1, filed with a letter dated 23 September 1996, did not involve an inventive step when having regard to the prior art disclosed in:

D1: DE-A-4 013 875 and

D2: US-A-2 374 679.

- II. On 20 February 1997 a notice of appeal was lodged against that decision together with payment of the appeal fee.
- III. With a communication dated 14 July 1997 the appellant was informed that the statement of grounds of appeal had not been filed in due time and that it had to be expected that the appeal was to be rejected as inadmissible. Attention was drawn to the provisions of Article 122 EPC.
- IV. On 5 August 1997 the statement of grounds of appeal was filed and on 17 September 1997 the appellant requested re-establishment of rights according to Article 122 EPC together with a statement of reasons for this request. The required fee was paid by cheque on the same day.
- V. In response to a consultation by telephone, the appellant filed with letter dated 17 March 1998 new claims and an adapted description. Minor further corrections were agreed by telephone on 29 April 1998.

The appellant requested grant of a patent on the basis of these new documents and the Figures 1 to 4 as originally filed.

Claim 1 reads as follows:

"1. An operating device with a top part (2) having an actuating arrangement (5) for driving a control member (6), and a bottom part (3) carrying the top part (2), wherein the top part (2) and the bottom part (3) are releasably connected with one another by means of a bayonet lock, wherein essentially radial projections (18) on one of the parts are held in the other part, the connection being effected by inserting the projections (18) into recesses (19) in the other part and turning the two parts in relation to each other, characterised by the said radial projections (18) being essentially pimple-like projections, the recesses (19) being formed in a resilient locking ring (16) held at its outer circumference in the other part, and the projections (18) being formed to slide in beneath the locking ring (16) when the top part (2) and the bottom part (3) are turned, the locking ring (16) exerting a resilient force on the radial projections (18) so that the two parts are held fixedly in a distinct axial position relative to one another, the part carrying the radial projections (18) comprising a beaker-shaped top part housing (8) which continues in a sleeve-like foot (9) of circular cross-section that carries the projections (18), the housing (8) and the foot (9) being of integral construction and being made of metal."

VI. In support of its requests the appellant relied on the following submissions:

Restitutio in integrum in accordance with Article 122 EPC

The deadline for filing the statement of grounds of appeal was overlooked due to a combination of exceptional circumstances, namely ~~heavy working load~~, a reorganisation of the patent department and a new disposition of fields of responsibility coincident with the situation that secretaries now also being responsible for the internal supervising system were participating in education courses on EPO practice.

Novelty and inventive step

Starting from the operating device known from D1, document D2 did not disclose a resilient ring as required by claim 1 of the present application but rather relied on flat, plate-like side projections. Not only lacked citation D2 any hint to an annular bearing member with resilient surfaces, the bayonet joint of D2 was also not suitable to replace the bayonet joint of D1 so that a combination of the teachings D1 and D2 was neither hinted at nor would such combination lead to the claimed subject-matter. On the contrary, since nothing was disclosed in the citations that would give an indication of a resilient annular bearing member or a foot part of a magnetic valve having pimple-like projections for securing it to the bottom part by means of the annular member, inventive activity was necessary for obtaining such novel bayonet joint.

Reasons for the decision

1. *Admissibility of the appeal*

1.1 Having regard to the requirements for admissibility of the appeal, the Board observes that the appellant failed to submit the statement of grounds of appeal within 4 months after the date of notification of the decision.

1.2 However, on 17 September 1997, thus within the time limit of two month according to Article 122(2) EPC set by the notification of the communication pursuant to Article 108 and Rule 65(1) EPC dated 14 July 1997, the appellant requested re-establishment of rights in accordance with Article 122(2) EPC, submitted grounds why the time limit had not been observed and paid the required fee at the same time. The statement of grounds of appeal had already been filed on 5 August 1997.

The appellant's substantiation of the reasons why in spite of all due care the appellant was unable to observe the time limit are considered to satisfy Article 122(1) EPC. Since also the requirements of Article 122(2) and (3) EPC are met, restitutio in integrum is decided. Consequently the filing of the statement of grounds of appeal on 5 August 1997 is deemed to meet the requirement of Article 108 EPC and, since also the other formal requirements are fulfilled it is concluded that the appeal is admissible.

2. *Amendments*

2.1 Present claim 1 is based on the subject-matter of the originally filed claims 1 and 12 and is further clarified by the features in that the resilient ring is held at its outer circumference and that the locking

ring exerts a resilient force on the radial projections so that the two parts are held fixedly in a distinct axial position relative to one another. These further features are apparent from the originally filed description page 4, lines 5 to 8, and page 9, lines 24 to 30.

Claims 2 to 13 are repetitions of the originally filed claims 2 to 11, 13 and 14.

In view of these assessments, no objections arise in respect of the requirements of Article 123(2) EPC and also Article 84 EPC concerning clarity and support of the claims appears to be met.

2.2 The amendments to the description concern adaptations to bring the description in line with the subject-matter now claimed and do not give rise to objections under the EPC either.

3. *Novelty*

The operating device in accordance with claim 1 comprises a bayonet lock with one part having radial pimple-like projections and the other part having a resilient locking ring exerting a resilient force on the pimple-like projection so that the two parts are held fixedly in a distinct axial position relative to one another. Since none of the available prior art documents discloses such a bayonet lock the subject-matter of claim 1 is deemed novel.

4. *Inventive step*

4.1 An operating device comprising the combination of precharacterising features of claim 1 is known from D1, which document represents the closest prior art.

The bayonet lock of the known operating device is expensive to produce and the magnetic actuator is not locked in the mounted position and may, due to vibration, loosen after some time.

The technical problem underlying the subject-matter of claim 1 relates to the provision of an operating device in which in a simple manner the top part and the bottom part can be joined rapidly with one another and by which at the same time safe mutual locking of the parts may be achieved (see page 3, second paragraph of the description).

- 4.2 This technical problem is solved by the features of claim 1. By use of the bayonet joint specified in the claim the top part and the bottom part merely require to be pushed together and after rotation over a small angle they are joined quickly and in a distinct axial position relative to one another.

The bayonet connection can be constructed from materials that are largely fatigue proof so that over a long period the reliability of the connection remains guaranteed. The beaker-shaped top part housing which continues in a sleeve-like foot of circular cross section that carries the projections and is made of metal ensures that the parts accommodated inside the housing also have a defined position in relation to the other parts of the operating device (see page 4, first paragraph of the description).

- 4.3 Considering the claimed bayonet lock more in detail, the resilient force exerted on the radial projections is essentially a reaction force due to bending of the locking ring. With reference to Figure 3 of the present application, by turning the top part the pimple-like projections slide beneath the corners 22 and then further beneath the inner circumference 20 of the

locking ring (see Figure 3) thereby pushing the inner circumference of the ring upwards while the locking ring is held in place at its outer circumference.

It will be apparent to the skilled person that, because of the particular form of the radial projections (pimple-like which implies a conical or bulbous form), contact between the projections and the ring is essentially on the inner circumference of the ring rather than on the ring itself, thereby using virtually the total radial width of the ring as an arm for providing the resiliency.

- 4.4 Having regard to the cited documents it is to be noted that none of these citations discloses a beaker shaped top part housing which continues in a sleeve-like foot of circular cross-section that carries pimple-like projections for providing a bayonet lock together with a locking ring which acts like a spring nor does any of the cited documents disclose such a resilient locking ring, functioning in the manner as disclosed in the present patent application.

Known bayonet locking arrangements with resilient retainment of the parts to be connected rather rely either on flexible lips which act like springs, such as is known from US-A-2 100 816 and GB-A-2 115 060, cited in the European search report, or elastic rings, such as is shown in FR-A-1 308 899 and DE-A-3 609 366 (see column 8, lines 28 to 32), further documents cited in the European search report.

- 4.5 The prior art disclosed in D2, considered to be pertinent by the Examining Division, concerns a bayonet joint arrangement with a ring on one part having recesses through which projections on another part (a nut 54 in both embodiments of the invention disclosed in D2) are passed and then rotated to slide over the

ring. A screw is tightened to pull the projections on the nut against the ring surface and press the parts to be connected together. With reference to the description of D2 on page 2, right column, line 70 to page 3, right column, line 9, it is clear that the ring in the embodiment of Figures 1 to 11 is not intended to be resilient but rather should be sufficiently stiff and stable to withstand the clamping force exerted by tightening the screw.

The embodiment shown in Figures 12 to 19 differs from the embodiment shown in Figures 1 to 11 in that the ring is fastened in a different manner to one of the parts to be connected (see page 4, right column, lines 53 to 63). However, it does not differ in the manner the two parts are locked because a screw and nut connection of the form shown in the embodiment of Figures 1 to 11 is used here too (see page 5, left column, lines 1 to 29).

In view of the functioning of this known bayonet locking means there is thus neither a disclosure nor a hint derivable from D2 that the ring is resilient in a manner to provide a resilient locking force. The projections on the nut are also not pimple-like projections as in the present application so as to allow contact between the projections and the ring essentially on the inner circumference of the ring only.

- 4.6 In the absence of any disclosure or teaching in the available documents to the combination of features of claim 1 and the resulting functioning of the claimed operating device, the subject-matter of claim 1 does not arise in an obvious manner from the state of the art and therefore is deemed to involve an inventive step. Therefore claim 1 as well as its dependent claims 2 to 13, relating to particular embodiments of

the invention in accordance with Rule 29(3) EPC, are acceptable.

Order

For these reasons it is decided that:

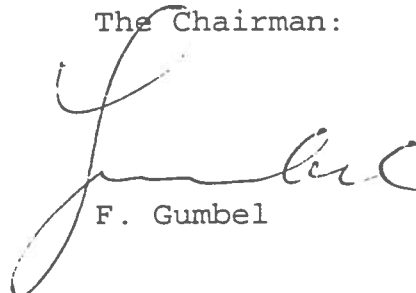
1. The decision under appeal is set aside.
2. The case is remitted to the Examining Division for grant of a patent with the following documents:
 - set of claims 1 to 13 and
 - description pages 1 to 13 both filed with letter dated 17 March 1998,
 - Figures 1 to 4 as originally filed.

The Registrar:



S. Fabiani

The Chairman:



F. Gumbel