

Internal distribution code:

- (A) [] Publication in OJ
(B) [] To Chairmen and Members
(C) [X] To Chairmen
(D) [] No distribution

D E C I S I O N
of 20 January 2004

Case Number: T 0709/01 - 3.5.3

Application Number: 96202782.7

Publication Number: 0768585

IPC: G05B 19/18

Language of the proceedings: EN

Title of invention:
Operating unit for intermittent drives

Patentee:
DIPLOMATIC AUTOMAZIONE S.p.A.

Opponent:
Sauter Feinmechanik GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (no)"
"Late filed request (not admitted)"

Decisions cited:
T 0021/81

Catchword:
-



Case Number: T 0709/01 - 3.5.3

D E C I S I O N
of the Technical Board of Appeal 3.5.3
of 20 January 2004

Appellant:
(Opponent)

Sauter Feinmechanik GmbH
Carl-Zeiss-Str. 7
D-72555 Metzingen (DE)

Representative:

Bartels, Martin Erich Arthur
Patentanwälte
Bartels und Partner
Lange Strasse 51
D-70174 Stuttgart (DE)

Respondent:
(Proprietor of the patent)

DIPLOMATIC AUTOMAZIONE S.p.A.
Via T. Tasso 5
I-21052 Busto Arsizio (Varese) (IT)

Representative:

Perani, Aurelio
Perani Mezzanotte & Partners
Piazza San Babila 5
I-20122 Milano (IT)

Decision under appeal:

Decision of the Opposition Division of the
European Patent Office posted 5 April 2001
rejecting the opposition filed against European
patent No. 0768585 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: A. S. Clelland
Members: A. J. Madenach
M.-B. Tardo-Dino

Summary of Facts and Submissions

- I. The present appeal is from the decision of the opposition division to reject an opposition against European Patent No. 0 768 585.
- II. The opposition was on the grounds of lack of novelty and lack of inventive step in view of the following documents:
- D1: Technical drawing Z-99 0.5.480.525 of a machining turret, bearing the date 21 May 1992
- D2: DE-A-41 29 651
- III. In its decision the opposition division held *inter alia* that the claimed invention required two distinct motors whereas D2 related to a single motor. The skilled person would not be led to the claimed invention involving two motors because of the higher complexity of the operating and control means for such a device.
- IV. The opponent (appellant) appealed, requesting that the decision be set aside and that the patent be revoked. The appellant argued *inter alia* that the claimed invention did not necessarily require two motors. D2, therefore, constituted relevant prior art. The appellant further introduced
- D3: Technical drawing of a machining turret, ref. no. 0.5.48.140-031470 with annexes relating to sale of the same before 02 March 1995

and argued that the subject-matter of claim 1 lacked novelty or an inventive step with respect to the device shown in D3.

- V. The respondent (patentee) requested that the appeal be dismissed. It was argued that the claimed invention required two distinct motors and in particular electronic operating and control means for coordinating both motors. Placing these electronic operating and control means in a box shaped housing with at least one of the motors only appeared obvious in hindsight.
- VI. The parties were summoned to oral proceedings, both parties having made an auxiliary request for oral proceedings. In a communication accompanying the summons the Board made a preliminary assessment relating to the question of novelty and inventive step in view of the cited prior art.
- VII. Oral proceedings were held on 20 January 2004. At the commencement of the oral proceedings the parties maintained their requests, the respondent also filing a technical drawing of a machining turret to assist in understanding the invention in the patent in suit. Towards the end of the oral proceedings, the respondent filed an independent claim of an auxiliary request. The appellant requested that the auxiliary request not be admitted as it was late filed.
- VIII. Claim 1 according to the main request, which is the same as claim 1 considered allowable by the opposition division, reads:

"Operating unit for intermittent drives in general, of the type comprising at least one stationary element made integral with the machine tool or machining centre, an element which can be moved between different operating positions spaced apart angularly or linearly, a mechanism for locking and releasing the moving element with respect to the stationary element, motor means to move the moving element from one operating position to another, motor means to operate the said locking and release mechanism, and finally electronic operating and control means to operate the motor means and to coordinate them in the sequence required by the operating program of the intermittent drive, characterized in that it comprises a box-shaped housing (1) in which are fitted at least the said motor means (6) for moving the moving element of the intermittent drive, together with the electronic operating (11) and control (12) components, the said box-shaped housing (1) being connectable mechanically to the intermittent drive (8)."

IX. The independent claim according to the auxiliary request reads (amendments with respect to claim 1 of the main request in bold):

"Operating unit for intermittent drives in general, of the type comprising at least one stationary element made integral with the machine tool or machining centre, an element which can be moved between different operating positions spaced apart angularly or linearly, a mechanism for locking and releasing the moving element with respect to the stationary element, **first** motor means to move the moving element from one operating position to another, **second** motor means to

operate the said locking and release mechanism, and finally electronic operating and control means to operate the **said first and second** motor means and to coordinate them in the sequence required by the operating program of the intermittent drive, characterized in that it comprises a box-shaped housing (1) in which are fitted at least the said **first** motor means (6) for moving the moving element of the intermittent drive, together with the electronic operating (11) and control (12) components **for operating said first and second motor means and for coordinating them**, the said box-shaped housing (1) being connectable mechanically to the intermittent drive (8)."

Reasons for the Decision

Background of the invention

1. The invention of the patent in suit relates to an operating unit for intermittent drives of the kind typically used for rotating and positioning machine tool turrets. Prior art intermittent drives usually comprise two motors, one for rotating the turret and one for locking and releasing machine tools. The controller of the two motors is typically located away from the motors. Such a prior art device is shown in the technical drawing submitted by the respondent during the oral proceedings. In order to overcome cabling and installation problems arising from the remote location of the controller, the present invention places the controller in the same housing as the rotating motor.

Interpretation of claim 1 (main request)

2. Claim 1 relates to an operating unit **for** intermittent drives in general.

2.1 The only features of the claim which clearly form part of the operating unit are motor means and electronic operating and control components arranged in a box shaped housing, as follows from the characterising portion of claim 1.

2.2 The further features of claim 1 relate to the intermittent drive and thus do not directly contribute to the definition of the operating unit. There is, however, an indirect contribution in that the electronic operating and control components of the operating unit have been defined in connection with the intermittent drive.

2.3 These "operating and control means" are, according to the preamble of claim 1, "to operate the motor means and to coordinate them in the sequence required by the operating program of the intermittent drive"; the motor means serve "to move the moving element from one operating position to another" and "to operate the said locking and release mechanism". From this it appears that the operating and control components of the operating unit relate to two motor means.

2.4 It was argued by the appellant that the claim language did not require the two motor means to be different. A single motor for both functions was technically conceivable and was covered by the wording of the claim.

Nothing in the description pointed to two different motor means. The example shown in the Figures comprised only a single motor.

- 2.5 Although the Board tends to agree with this interpretation it has not proved necessary to reach a conclusion on the matter since the main argument with respect to patentability is based on a reading of claim 1 which requires the provision of two motor means. It thus applies equally to the broader case of a single motor means.

The prior art

3. Document D2 is considered by the Board to constitute the closest prior art. This was not contested by the parties.
- 3.1 D2 shows in Figure 1 a drive unit 1 comprising an electric motor 2 and control and operating means 3 in a casing 4, which can be a single casing (see column 2, lines 50 to 54). The object of D2 is to reduce the amount of cabling between motor and control and operating means by arranging them close to each other (see column 1, lines 18 to 29).

Novelty and inventive step (main request)

4. The drive unit 1 of D2 is considered to correspond to the operating unit in the language of claim 1.
- 4.1 The drive unit of D2 is also **for** intermittent drives in general.

According to column 1, lines 5 to 9 of the patent in suit, an "intermittent drive" is to be interpreted as referring to a system of mechanical elements designed to execute angular or linear movements of programmable magnitude with predetermined acceleration, velocity and deceleration. The control and operating means of D2 allow for a variety of motor controls (see column 2, lines 58 to 61) particularly including angular positioning; this follows from the presence of an angular encoder 13 in Figure 2 and column 2, lines 31 to 49, which implies such a function. Furthermore, the motor shaft 12 permits the drive unit to be connected to a device to be driven.

As a consequence, the drive unit of D2 can be said to be for intermittent drives in general.

4.2 Furthermore, according to claim 1, the intermittent drive is of the type comprising a stationary element, a movable element, a mechanism for locking and releasing the movable element with respect to the stationary element, motor means for moving the movable element, motor means for operating the locking and release mechanism and electronic operating and control means. The mechanical features of the intermittent drive form a unit separate from the operating unit, which is only mechanically connectable to it and does not impose any limitation on the operating unit. According to the example of Figure 1 of the patent in suit, the mechanical connection between the operating unit and the intermittent drive consists of an output shaft 7 and a flat wall 8. The drive unit of D2 comprises a comparable output shaft (see reference numeral 12 of Figure 1). The bottom wall section of casing 4 of D2 is

considered to correspond to the wall 8 of the patent in suit.

Therefore, as far as the above defined mechanical features are concerned, the drive unit of D2 is also suitable for an intermittent drive of the type defined in claim 1.

4.3 The operating unit according to claim 1 of the patent in suit is characterized in that it comprises a box-shaped housing. According to D2 (see column 2, lines 50 to 54 and Figure 1) the motor unit is formed in what appears to be a cylindrical housing.

4.4 Furthermore, according to claim 1, at least the said motor means for moving the moving element of the intermittent drive is fitted in said housing. This is also the case in D2 (see Figure 1 and column 2, lines 50 to 54).

4.5 Claim 1 specifies that the motor means are fitted into said housing together with the electronic operating and control components of the intermittent drive, defined as "electronic operating and control means to operate the motor means and to coordinate them in the sequence required by the operating program of the intermittent drive". As noted at point 2.5 above, the Board has for the sake of the argument adopted the respondent's contention that this relates to the operation and coordination of two motor means, i.e. motor means for moving the movable element and motor means for locking and releasing. According to D2, the operating and control means 6 in the housing 4 appear to relate only to a single motor 2.

- 4.6 Finally the box-shaped housing is connectable mechanically to the intermittent drive. This feature has already been shown to be disclosed in D2, see sections 4.2 and 4.3 above.
5. There are therefore two differences between the subject-matter of claim 1 (on the narrow interpretation) and the device of D2, namely that (i) the housing is box-shaped and (ii) the electronic operating and control means in the housing relate to operation and coordination of two motor means.
- 5.1 With respect to the housing the Board is of the opinion that the actual form of the housing is not related to a particular technical problem and does not, therefore, contribute to an inventive step. Such an argument has, in fact, never been brought forward by the respondent.
- 5.2 With respect to difference (ii), the skilled person, would be aware of four potential solutions for arranging the electronic operating and control means to operate two motor means and to coordinate them in the sequence required by the operating program of the intermittent drive: (1) at the first motor means for locking and releasing; (2) at the second motor means for moving the moving element; (3) at a common position elsewhere; and (4) distributed between the two motor means.
- 5.3 The technical problem to be solved can be seen in reducing the amount of cabling between the two motor means and the operating and control means. D2 addresses a similar problem in relation to a single motor (see

section 4.2 above) which is solved by arranging the controller close to the motor. Faced with the problem of arranging operating and control means for two motors the skilled person, in accordance with the general teaching of D2, would not consider arranging the electronic operating and control means elsewhere, solution (3), or distributed between the two motor means, solution (4), as these solutions would require the most extensive cabling and would be contrary to the teaching of D2. Instead, he would be most likely to place it with the motor means for moving the moving element, solution (2), since the starting configuration of Figure 1 of D2 has the controller for the motor means for the moving element already in place in a common housing. It would appear simplest to place any additional controls at the same place. Therefore, this latter solution, although its demand in cabling is similar to that of solution (1), would appear the most readily available.

5.4 The above arguments consider the motor means of claim 1 to relate to two different motors. If, however, the motor means relate to one and the same motor, which is in the Board's opinion a valid interpretation of claim 1 (see section 2.5 above), difference (ii) would not arise as the motor operating and control means would be placed with the single motor as in D2.

5.5 As a consequence and irrespective of the interpretation of the number of motors required according to claim 1, the subject-matter of claim 1 does not involve an inventive step as required by Article 56 EPC.

6. The main argument of the patentee was, apart from the interpretation of the claim as requiring two distinct motors, which has been discussed above, that the invention according to the patent in suit related to an object different to that of D2 and was to overcome the problem of "a considerable amount of fine tuning of the operating program for satisfactory adaptation of the operating and control equipment to the mechanical device" if the control unit were remote from the motor units. Reducing the amount of cabling would only be a by-product of the solution according to the patent in suit. Nowhere in D2 was such a problem dealt with. Therefore, the skilled person would not consider placing the control unit for a locking and releasing motor to be added to the device of D2 together with the already existing control means for the motor 2. In the Board's view, in present case the object of reducing the amount of cabling in D2 leads to the claimed invention in an obvious manner as demonstrated above. The additional object mentioned in the patent in suit has to be considered as a bonus effect (see T 21/81, OJ 1984, 401, point 6 of the reasons).

Admissibility of auxiliary request

7. In the course of the oral proceedings the respondent presented a revised claim 1 as an auxiliary request which, it was stated, did not alter the scope of the claim but merely served to clarify it.

Since the above inventive step argument is independent of the interpretation of claim 1 of the main request as requiring two distinct motor means, all arguments

brought forward in favour or against such an interpretation have no bearing on this decision.

The amendments introduced by claim 1 of the auxiliary request are not occasioned by grounds of opposition specified in Article 100 EPC as required by Rule 57a EPC since they relate only to clarity and do not serve to render the subject-matter of the claim inventive with respect to the disclosure of D2. Therefore, the request was not admitted into the procedure.

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:

D. Magliano

A. S. Clelland