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D E C I S I O N
of 5 April 2005

Case Number: T 0739/03 - 3.2.7

Application Number: 96933450.7

Publication Number: 0946338

IPC: B25D 9/26

Language of the proceedings: EN

Title of invention:

Method for adjusting drilling of drilling machine and rock drill

Applicant:

TAMROCK OY

Opponent:

-

Headword:

Novelty (yes), remittal (yes)"

Relevant legal provisions:

EPC Art. 54, 84, 111(1), 123(2)

Keyword:

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Decisions cited:

-

Catchword:

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Case Number: T 0739/03 - 3.2.7

D E C I S I O N
of the Technical Board of Appeal 3.2.7
of 5 April 2005

Appellant:
(Applicant)

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Decision under appeal:

Decision of the Examining Division of the
European Patent Office posted 6 December 2002
refusing European application No. 96933450.7
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: H. Meinders
Members: H. E. Felgenhauer
C. Holtz

Summary of Facts and Submissions

- I. The appellant (applicant) filed an appeal against the decision of the Examining Division to refuse the European patent application No. 96 933 450.7.
- II. According to the decision under appeal the application has been refused since the method defined by claim 1 as annexed to the decision lacks novelty. The claims forming the basis for the decision are mentioned as "claims 1 - 12 filed with letter dated 10.06.2002." Claim 1 filed with letter dated 10 June 2002 reads as follows:

"1. A method for adjusting drilling of a drilling machine said drilling machine comprising a frame (6), a percussion piston (1) arranged to the frame and moving in a longitudinal direction of the frame, an absorber (8) situated in a front end of the travel of a piston portion (1a) of the percussion piston (1), a shank (2) situated in the axial extension of the percussion piston (1) and at least two pistons (4a to 4d; 14a, 14b) arranged to the frame (6) movable in its axial direction, the pistons being situated in longitudinal cylinder spaces parallel to the axle of the percussion piston (1) and arranged to act on the shank (2) and push it towards the front portion of the drilling machine by means of a pressure medium acting on the rear surface of the pistons, whereby at least during drilling such a pressure of pressure medium is set to act on the rear surface of the pistons that the total force of all the pistons acting on the shank and pushing it forwards exceeds feed force acting on the drilling machine during drilling, wherefore some of the

pistons are pushed to the foremost position of their travel by means of the pressure medium, whereby the shank (2) is at its optimal percussion point when being supported by them, characterized by adjusting the pressure acting on at least some of the pistons (4b to 4d; 14b) that are capable of moving towards the front end of the drilling machine from a position corresponding to the optimal percussion point to adjust the position of the shank (2) with respect to the optimal percussion point for providing a desired drilling situation."

The only prior art document relied upon in the contested decision is:

D1: WO-A-9112934.

Document D1 was considered as disclosing a method for adjusting drilling of a drilling machine, the drilling machine having all the features of the drilling machine defined in claim 1 of the application in suit.

Concerning the method for adjusting drilling to which claim 1 is directed the Examining Division was of the opinion that document D1 discloses a method within which the pressure acting on the system can be adjusted such that the pistons of the drilling machine are capable of moving towards the front end of the drilling machine from a position corresponding to the optimal percussion point.

The last feature of claim 1 defining the purpose of the movement of the cylinders as "to adjust the position of the shank (2) with respect to the optimal percussion

point for providing a desired drilling situation" was considered as not introducing any new information or substantial change in the claimed process. This amendment to claim 1 as originally filed did not change the grounds for refusal on which the applicant had already had a chance to comment.

Based on this understanding of claim 1 (cf. grounds for the decision under appeal Nos. 7. and 8.) the subject-matter of claim 1 has been considered as lacking novelty.

III. The appellant requested in its grounds of appeal that the decision under appeal be set aside and that a patent be granted based on the claims forming the subject of the decision under appeal. Auxiliarily oral proceedings were requested.

IV. In a communication pursuant to Article 11(1) RPBA dated 10 December 2004, the Board gave its preliminary opinion and identified in which manner, besides the interaction of the percussion piston and the shank, and at which position of the shank, pistons can act on the shank to move it forward.

Based on the resulting understanding of the method according to claim 1 the provisional opinion has been expressed that the method of claim 1 is novel with respect to the method according to document D1.

With respect to the drilling machine defined by independent claim 8 the provisional view has been expressed, that the machine according to this claim lacks novelty with respect to the drilling machine of

document D1, since claim 8 does not comprise the distinguishing feature claim 1 does.

Concerning the further prosecution of the case the Board expressed the view that if the independent claims were formulated such that they were novel, the case would be remitted to the Examining Division for examination of inventive step, which so far had not been done.

V. Responding to this communication with fax dated 28 January 2005 the appellant sent an adapted set of claims 1 to 12 and an adapted description, pages 1 to 14, stating in which manner claim 8 had been amended and noting that its subject-matter should now be novel like that of claim 1.

VI. Of that set of claims independent claim 1 is identical with claim 1 forming the basis of the decision under appeal. Independent claim 8 reads as follows:

"8. A drilling machine comprising a frame (6), a percussion piston (1) arranged to the frame and moving in a longitudinal direction of the frame, an absorber (8) situated in a front end of the travel of a piston portion (1a) of the percussion piston (1), a shank (2) situated in the axial extension of the percussion piston (1), and an axial bearing arranged to the frame (6) for receiving axial forces directed to the frame via the shank (2), which axial bearing is formed of at least two pistons (4a to 4d; 14a, 14b) which are placed in the frame (6) into axial cylinder spaces parallel to the axle of the percussion piston and arranged to act on the shank (2) and push it towards the front portion

of the drilling machine by means of a pressure medium acting on the rear surface of the pistons (4a to 4c; 14a, 14b), whereby at least during drilling such a pressure of pressure medium is set to act on the rear surface of the pistons (4a to 4c; 14a, 14b) that the total force of all the pistons (4a to 4c; 14a, 14b) acting on the shank (2) and pushing it forwards exceeds the feed force acting on the drilling machine during drilling and whereby the travel of some of the pistons (4a) towards the front portion of the drilling machine is restricted in such a manner that when said pistons (4a) are in their foremost position, the shank (2) is essentially situated at its optimal percussion point when being supported by them, characterized in that it comprises means for feeding pressure fluid to the pressure spaces behind at least some of the pistons (4b to 4d; 14b) that are capable of moving towards the front end of the drilling machine from a position corresponding to the optimal percussion point in such a manner that the shank (2) can be moved from its optimal percussion point towards the front end of the drilling machine by feeding a sufficiently great pressure of the pressure medium at least behind pistons (4b to 4d; 14b) with travel length corresponding to the desired position of the shank (2)."

Reasons for the Decision

1. Since the case is to be remitted to the first instance for further examination (cf. point 8 below), in the present decision only the issues of novelty of the subject-matter of claims 1 and 8 and of the admissibility of the amendments to claims 1 and 8 are

addressed in order not to prejudice the further examination of the first instance.

2. Since the decision under appeal does not comprise the indicated annex with the wording of the then valid claim 1, the Board has considered the wording of claim 1 as filed with letter of 10 June 2002, as also indicated in the decision under appeal.

3. *Amendments*

- 3.1 The Board has convinced itself that claim 1 as amended with the letter of 10 June 2002 satisfies the requirements of Articles 84 and 123(2) EPC.

- 3.2 Claim 8 results from independent claim 9 as originally filed with the following amendments:

The added features defining that the drilling machine "comprises means for feeding pressure fluid to the pressure spaces behind at least some of the pistons (4b to 4d; 14b) that are capable of moving towards the front end of the drilling machine from a position corresponding to the optimal percussion point" are disclosed in claim 2 of the application as originally filed.

The movement the pistons can make due to the means for feeding pressure fluid being "in such a manner that the shank (2) can be moved from its optimal percussion point towards the front end of the drilling machine by feeding a sufficiently great pressure of the pressure medium at least behind pistons (4b to 4d; 14b) with travel length corresponding to the desired position of

the shank (2)" is disclosed by the adjustment method described in the description as originally filed (cf. page 3, line 24 to page 4, line 26), taking into account that in order to perform the described adjustment the drilling machine has to have a corresponding structure. This feature is furthermore disclosed in the part of the description as originally filed relating to an embodiment of the drilling machine (page 5, lines 35 to page 6, line 13) and again by the method for adjusting the drilling described for this drilling machine (page 6, line 14 to page 7, line 1).

The at least two pistons being placed into axial cylinder spaces "parallel to the axle of the percussion piston" are derivable from figures 1, 3 and 4 and page 7, line 25; page 8, lines 16 and 21; page 9, lines 6 to 10.

These amendments thus satisfy the requirement of Article 123(2) EPC.

The Board is furthermore satisfied that the amendments made with respect to claim 8 do not give rise to objections pursuant to Article 84 EPC.

4. *Subject-matter of claim 1*

Claim 1 is directed to a method for adjusting drilling of a drilling machine.

- 4.1 The drilling machine as referred to in claim 1 comprises a frame, a percussion piston moving in a longitudinal direction of the frame, a shank situated in the axial extension of the percussion piston and at

least two pistons arranged to the frame to act on the shank and push it towards the front portion of the drilling machine by means of a pressure medium acting on the rear surface of the pistons.

4.2 The method features of claim 1 define that for adjusting drilling

- (a) the pressure acting on at least some of the pistons that are capable of moving towards the front end of the drilling machine is adjusted so that they move the shank
- (b) from a position corresponding to the optimal percussion point, so as
- (c) to adjust the position of the shank with respect to the optimal percussion point for providing a desired drilling situation.

Consequently feature (c), which according to the contested decision neither introduces any new information nor changes the claimed process substantially, defines an essential feature of the method according to claim 1 in that it sets a reference point for the adjustment of the position of the shank (cf. page 3, line 24 to page 4, line 8).

5. *Disclosure of document D1*

5.1 The structure of the drilling machine according to document D1 corresponds to that of the drilling machine referred to in present claim 1 (cf. D1, page 4, line 20 to page 5, line 14; figures 1, 2).

5.2 According to document D1 the method of adjusting drilling of the drilling machine is such that the shank is at "an optimal percussion point in view of the transmission of the impact power and is not able to move farther as the force acting on the shank through the pistons 4a is smaller than the feed force acting on the drilling machine due to the prevention of the travel of pistons 4b, so that this force is not able to force the shank forwards beyond the percussion point" (page 7, lines 23 to 32).

According to this adjusting method the shank is thus **always positioned at its optimal percussion point** when it is **supported** by the pistons (page 3, lines 6 to 11; lines 18 to 25).

Concerning forward movement of the pistons beyond the optimal percussion point document D1 teaches: "**after the impact** ... some of the pistons are able to **follow the shank** during the percussion movement so that they deaden the return movement of the shank before it reaches the percussion point during the return impulse" (page 3, lines 11 to 18).

Thus the method for adjusting drilling according to document D1 is limited to an **adjustment of the shank so that it is at the optimal percussion point** by means of the pistons, some of which are able to **follow** the shank after an impact.

6. *Novelty of the method according to claim 1*

The method of claim 1 is novel with respect to the method according to document D1 since due to features (a) to (c) (see point 4.2) the pressure acting on at least some of the pistons is adjusted such that they are capable of moving the shank towards the front end of the drilling machine from a position corresponding to the optimal percussion point for providing a desired drilling situation. On the contrary, according to document D1 the pistons are not capable to adjust the position of the shank by forward movement with reference to the optimal percussion point.

The method of claim 1 is thus novel with respect to document D1 (Article 54 EPC).

7. *Novelty of the drilling machine according to apparatus claim 8*

The feeding means for the pistons as defined in claim 8 are such that pressure fluid can be fed such that "the shank can be moved from its optimal percussion point towards the front end of the drilling machine", "with travel length corresponding to the desired position of the shaft".

The drilling machine according to claim 8 thus comprises feeding means for the pistons which enable these to move the shank as defined in claim 1 for the method for adjusting drilling.

As indicated above in paragraphs 4, 5 and 6 such a movement of the pistons is not disclosed for the method

according to document D1. Likewise, within its disclosure relating to the structure of the drilling machine, document D1 does not disclose the drilling machine being provided with means for feeding pressure fluid to the pressure spaces behind at least some of the pistons so that the shank can be moved from its optimal percussion point towards the front end of the drilling machine.

The drilling machine according to claim 8 is thus novel with respect to document D1 (Article 54 EPC).

8. With present claims 1 and 8 the subject-matter of the present claims is novel with respect to D1.

The appellant, in its submission dated 28 January 2005, has not explicitly responded to the intention of the Board, given in its communication dated 10 December 2004, to remit the case to the first instance under these circumstances. The appellant has however argued only with respect to novelty of claim 8, which the Board has now acknowledged.

Since inventive step has not been examined by the Examining Division the Board makes use of its discretionary power according to Article 111(1) EPC to remit the case to the first instance for further prosecution.

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 further prosecution.

The Registrar:

The Chairman:

U. Bultmann

H. Meinders