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Aktenzeichen / Case Number / N° du recours : T 308/86 - 3.2.2

Anmeldenummer / Filing No / N° de la demande : 81 830 090.7

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Bezeichnung der Erfindung: Combine harvester with removable threshing and
Title of invention: separating unit
Titre de l'invention :

Klassifikation / Classification / Classement : A01F 12/18

ENTSCHEIDUNG / DECISION

vom / of / du 26 May 1988

Anmelder / Applicant / Demandeur :

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Pietro Laverda, S.p.A.

Einsprechender / Opponent / Opposant :

Claas[®] OHG

Stichwort / Headword / Référence :

EPO / EPC / CBE Article 56

Kennwort / Keyword / Mot clé :

Inventive step (yes)

Leitsatz / Headnote / Sommaire

Europäisches
Patentamt

Beschwerdekammern

European Patent
Office

Boards of Appeal

Office européen
des brevets

Chambres de recours



Case Number : T 308/86 - 3.2.2

D E C I S I O N
of the Technical Board of Appeal 3.2.2
of 26 May 1988

Appellant :
(Opponent) Claas OHG
Postfach 1140
D-4834 Harsewinkel

Representative :

Respondent :
(Proprietor of the patent) Pietro Laverda, S.p.A.
I-36042 Breganze (Vicenza) (IT)

Representative :
Jacobacci, Filippo et al
c/o Jacobacci-Casetta & Perani S.n.c.
Via Alfieri 17
I-10121 Torino (IT)

Decision under appeal : Decision of the Opposition Division of the European Patent Office dated 21 April 1986 rejecting the opposition filed against European patent No. 42 824 pursuant to Article 102(2) EPC dispatched on 2 September 1986.

Composition of the Board :

Chairman : K. Stamm
Members : H. Seidenschwarz
F. Benussi

Summary of Facts and Submissions

- I. European patent No. 42 824 comprising nine claims was granted to the Respondent on 22 August 1984 in response to European patent application No. 81 830 090.7 filed on 2 June 1981 and claiming the priority of a previous application of 19 June 1980.
- II. Opposition was filed by the Appellant requesting the revocation of the patent on grounds of lack of inventive step.
- III. After considering the Grounds for Opposition, the Opposition Division rejected it at the conclusion of the oral proceedings of 21 April 1986. The written statement of reasons for the decision was dispatched on 2 September 1986.
- IV. On 5 September 1986, the Appellant filed an appeal against the decision, paying the appropriate fee simultaneously and requesting that the decision under appeal be set aside and that the patent be revoked in its entirety. In the Statement of Grounds, received on 10 December 1986, the Appellant cited for the first time document DE-C-2 812 655.

He considered that separate features of Claim 1 corresponded to separate aspects of the problem and concluded them to be independent and obvious solutions. In particular, he alleged that two augers - one for discharging straw, the other, a transverse auger, for conveying the grain - would not contribute to a solution of the main part of the problem, viz. enabling the assembly, disassembly and transportation of the machine to be effected quickly and simply.

- V. In the oral proceedings of 26 May 1988 the Appellant confirmed his opinion that the subject-matter of Claim 1 had to solve two different problems (a) splitting-up of the combine harvester into different units; b) efficient operation of the threshing and separating unit) and was obvious in view of the combine harvesters known from DE-C-1 223 602, DE-A-1 457 968 and DE-C-2 812 655 and the customary practice followed by a person skilled in the art. He also repeated his objection that the European patent did not disclose the feature that the support structure is releasably fixed to the cutting table (Claim 1, lines 29 and 30) in a sufficiently clear and complete manner (Article 100(b) EPC).

He, therefore, again requested that the decision under appeal be set aside and that the patent be revoked.

Further, he submitted as an auxiliary request that Claim 1 be limited with respect to DE-C-1 223 602 which showed the relevant state of the art.

The Respondent contested the arguments of the Appellant and was of the opinion that the subject-matter of Claim 1 involved an inventive step. Answering a question put by the Board, he affirmed that the features following line 38 in Claim 1 as granted were infact included by the support structure. He requested that the appeal be dismissed and that the patent be maintained with the amendments submitted during the oral proceedings, which concern the replacement of the wording "combine harvester" by "support structure" in Claim 1, lines 38 and 39 as well as in the description, column 1, line 45.

- VI. Claim 1 reads as follows:

"Combine harvester (1) comprising a cutting table (6), and an axial-flow threshing and separating unit (10) mounted transversely relative to the longitudinal axis of the combine harvester (1), said axial-flow threshing and separating unit (10) including a threshing and separating cylinder (11), a counter-beater (12) substantially in the form of a concave grille which surrounds a lower part of a first portion of the threshing and separating cylinder (11), and a separator casing (13) substantially in the form of a tubular grille which surrounds a second portion of the threshing and separating cylinder (11), characterised in that the threshing and separating unit (10) is mounted by a support structure (9) releasably fixed to the cutting table (6), said support structure (9) including a transverse feed cylinder (14) which is located upstream of the threshing and separating unit (10) to feed a harvested crop to said unit, said transverse feed cylinder (14) being mounted on a shaft (18), each end of which is supported on said structure (9) by resilient suspension means (19, 20, 21, 22, 23, 24, 25), said support structure (9) further including an auger (17) located immediately below the delivery end of the threshing and separating unit (10) for discharging straw, a grain collection recess (15) located below the threshing and separating unit (10) and a transverse auger (16) adjacent said recess (15) with oppositely-wound spirals (16a, 16b) which converge towards a central section (16c) including two paddles (16d) for conveying the grain towards a blade elevator (26)."

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rules 1(1) and 64 EPC and is, therefore, admissible.

2. The document DE-C-2 812 655 was cited for the first time by the Appellant in his Statement of Grounds and, therefore, has been submitted late within the meaning of Article 114(2) EPC.

The examination of the facts by the Board of its own motion pursuant to Article 114(1) EPC revealed that the teaching of DE-C-2 812 655 was not relevant for the assessment of the patentability of the subject-matter of Claim 1.

In the exercise of discretion under Article 114(2) the Board, therefore, decided to disregard DE-C-2 812 655 in the appeal.

3. Concerning the amendment in Claim 1, the following is set out:

According to the description as granted the combine harvester has a structure which can be broken down into three main units: the cutting table, the threshing and separating unit support structure and the rear part (cf. EP-B-0 042 824, column 4, line 65 to column 5, line 4). The cutting table includes a feed auger and the rear part comprises the motor unit, the cleaning means and the grain storage tank (cf. EP-B-0 042 824, column 2, lines 17 to 20 and column 5, lines 4 to 6). From this and from the description (cf. column 2, lines 45 to 58) in connection with Figure 1 it follows that the support structure carries not only the threshing and separating unit and the transverse feed cylinder according to Claim 1 as granted, but also the auger for discharging straw, the grain collection recess and the transverse auger with oppositely-wound spirals. The amendment, therefore, reflects clearly the invention as originally disclosed and does not extend the protection conferred by Claim 1 as granted.

The amendment in the description corresponds to the amendment in Claim 1. Hence, the patent complies with Article 123(2) and (3) EPC.

4. The invention relates to a combine harvester comprising a cutting table and an axial-flow threshing and separating unit mounted transversely relative to the longitudinal axis of the combine harvester.
- 4.1 In the description of the invention it is referred to the document US-A-1 932 714 as an example of the relevant state of the art. In the machine known from this document the harvested crop follows a helical path around the threshing and separating cylinder, thus producing an efficient threshing action and better grain separation.
- 4.2 According to the findings of the parties and the Board, however, the combine harvester as disclosed in DE-C-1 223 602 is the closest to the subject-matter of Claim 1 among the multiple combine harvesters known from the prior art documents cited in the search report and those introduced during the opposition and appeal procedures.

DE-C-1 223 602 has all the features indicated in the preamble of Claim 1 and comprises also some features stated in the characterising portion, which are the following:

- the threshing and separating unit is mounted by a support structure fixed to the cutting table,
- the support structure includes a transverse feed cylinder which is located upstream of the threshing and separating unit to feed a harvested crop to said unit,
- the transverse feed cylinder is mounted on a shaft,

- the support structure further includes a grain collection recess located below the threshing and separating unit and a transverse auger adjacent this recess.

The known combine harvester, however, does not comprise the following features:

- the support structure is releasably fixed to the cutting table,
- each end of the transverse feed cylinder's shaft is supported on said support structure by resilient suspension means,
- the support structure also includes an auger for discharging straw located immediately below the delivery end of the threshing and separating unit, and
- the transverse auger is provided with oppositely-wound spirals which converge towards a central section including two paddles for conveying the grain towards a blade elevator.

These differences between the prior art according to DE-C-1 223 602 and the subject-matter of Claim 1 have not been contested by the Appellant.

- 4.3 Hence, the problem to be solved by the invention resides in the provision of a combine harvester of the type known from DE-C-1 223 602, which is simple in structure and easily dismantled into different units of relatively small size, thus enabling the assembly, disassembly and transportation of the combine harvester to be effected quickly and simply, and which enables efficient operation of the threshing and separating unit.

- 4.4 According to the teaching of Claim 1, this problem is solved by a structure allowing the combine harvester to be broken down into three main units (the cutting table, the threshing and separating unit and the rear part) as well as by means improving the operation conditions of the threshing and separation unit.

Claim 1 makes it plain that the two above mentioned augers form part of the support structure, and thus these augers affect also the solution of the main problem. A separation of these features with regard to distinguished aspects of the problem is therefore no more justified.

5. It follows from the statements in the foregoing paragraphs 4.1 and 4.2 that none of the other prior art documents discloses the combine harvester according to Claim 1.

Therefore, the subject-matter as specified in Claim 1 is novel (Article 54 EPC).

6. The question to be considered is, however, whether the subject-matter of Claim 1 involves an inventive step. For the assessment of the matter, the following points emerge:

- 6.1 DE-A-1 457 968 relates to a combine harvester which comprises a cutting table, an axial-flow threshing and separating unit including a transverse feed cylinder and a transverse auger for conveying the grain towards cleaning means.

The teaching of this document is to dispose behind and parallel to the cutting table a housing containing the threshing and separating unit mounted transversely relative to the longitudinal axis of the combine harvester, which threshing and separation unit forms a unit with the cleaning means mounted adjacent and coaxially with the

threshing and separating unit. The purpose of this teaching is to get a compact construction of the combine harvester: cf. page 2, lines 1 to 22 and Claim 1.

According to a particular embodiment of the known combine harvester, the cutting table, the cleaning means as well as the threshing and separating unit are supported by a frame fastened to an agricultural tractor and vertically adjustable by means of levers: cf. page 10, lines 9 to 18, Claim 12 and Figure 13.

DE-A-1 457 968, however, does not mention any support structure, which carries the threshing and separating unit, and which is simultaneously releasably fixed to the cutting table. The person skilled in the art, therefore, does not get any indication to provide the combine harvester known from DE-C-1 223 602 with a simple structure allowing the separation of the whole unit formed by the cutting table and the threshing and separating unit from the rear part of the combine harvester, as well as the removal of the threshing and separating unit from the cutting table, thus simplifying the transportation of the combine harvester.

- 6.2 DE-A-1 457 968 does also not disclose the features concerning the resilient suspension of the shaft of the transverse feed cylinder and the mounting of an auger for discharging straw located immediately below the delivery end of the threshing and separating unit on a support structure as well as the transverse auger provided with oppositely-wound spirals which converge towards a central section including two paddles for conveying the grain. This document, therefore, cannot give any suggestion, which could lead the person skilled in the art to the particular structure and arrangement of the various elements constituting the threshing and separating unit as specified

in Claim 1, which structure and arrangement enable efficient operation of the threshing and separating unit. For these reasons the aforementioned features cannot be considered to be obvious.

- 6.3 The other prior art documents are further removed from the subject-matter of Claim 1 than DE-A-1 437 968, since they also do not deal with the problem to provide a combine harvester with a simple structure which enables the assembly, disassembly and transportation of the combine harvester to be effected quickly and simply as well as the efficient operation of the threshing and separating unit. They could not, therefore, lead (either per se or in combination with DE-C-1 223 602 or DE-A-1 457 968) the skilled person to a combine harvester according to Claim 1.
- 6.4 Hence, in the Board's judgement the subject-matter of Claim 1 involves an inventive step within the meaning of Article 56 EPC.
7. The following comments are made with respect to the Appellant's objection to the feature concerning the releasable fixation of the support structure to the cutting table, which feature in the Appellant's view is not sufficiently and clearly disclosed by the European patent.

EP-B-0 042 824, column 1, lines 55 to 60, column 2, lines 21 to 23, column 4, line 65 to column 5, line 9 in combination with the Figures 1 and 2, discloses the invention, as claimed, in such terms that the solution of the technical problem underlying the invention can be understood (Rule 27(1)(d)) and that the invention can be carried out by a person skilled in the art.

The person skilled in the art does not need more information because it is well within the scope of his customary practice to design the structural details for a releasable connection between the cutting table and the support structure.

Therefore, the objection on the basis of Article 100(b) EPC raised by the Appellant cannot support his request to revoke the patent.

8. With respect to the Appellant's objection relating to the two-part form of Claim 1 not being correct, the Board points out that this objection is no ground for opposition as defined in Article 100 EPC. By virtue of Rule 66(1) EPC, this ground is not to be considered in the appeals procedure as well. The auxiliary request, therefore, has to be rejected.
9. Consequently, the patent can be maintained with Claim 1 in the wording as amended.
10. Claims 2 to 9 concern particular embodiments of the subject-matter of Claim 1 and thus are not open to objection.
11. Since, in the present case, the effect on the scope of the protection conferred by the patent brought about by the amendments in the description and in Claim 1, made during the oral proceedings, was easy to perceive and since, on the other hand, the parties gave no indication during the oral proceedings that they needed more time in order to examine these amendments, the Board was able to dispense with informing the parties in accordance with Rule 58(4) EPC (Decision T 219/83, OJ EPO 7/1986, 211).

Order

For these reasons, it is decided that: ,)

1. The impugned decision is set aside.
2. The case is remitted to the first instance with the order to grant the patent on the basis of the patent specification with the following amendments:

Claim 1, lines 38, 39: "combine harvester (1)" is replaced
by "support structure (9)",

column 1 of the description, line 45: "combine harvester"
is replaced by
"support structure".

3. The auxiliary request of the Appellant is rejected.

The Registrar:

The Chairman:

F.Klein

K. Stamm