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Datasheet for the decision of 23 July 2020

Case Number: T 0305/18 - 3.2.04

Application Number: 11779702.7

Publication Number: 2637492

IPC: A01C7/04

Language of the proceedings: EN

Title of invention:
SEED DISTRIBUTION ELEMENT FOR PRECISION SEED DRILLS, SEED DRILL INCLUDING SAID ELEMENT

Patent Proprietor:
Maschio Gaspardo S.p.A.

Opponent:
Precision Planting LLC

Headword:

Relevant legal provisions:
EPC Art. 54(2), 123(2)
RPBA Art. 12(4)

Keyword:
Novelty
Amendments
Late-filed evidence - admitted (yes)
Late-filed auxiliary requests

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

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Case Number: T 0305/18 - 3.2.04

D E C I S I O N
of Technical Board of Appeal 3.2.04
of 23 July 2020

Appellant: (Patent Proprietor)	Maschio Gaspardo S.p.A. Via Marcello 73 35011 Campodarsego (PD) (IT)
Representative:	Locas, Davide Cantaluppi & Partners S.r.l. Piazzetta Cappellato Pedrocchi, 18 35122 Padova (IT)
Respondent: (Opponent)	Precision Planting LLC 23207 Townline Road Tremont, IL 61568 (US)
Representative:	Uexküll & Stolberg Partnerschaft von Patent- und Rechtsanwälten mbB Beselerstraße 4 22607 Hamburg (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 17 November 2017 revoking European patent No. 2637492 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	A. de Vries
Members:	G. Martin Gonzalez
	N. Obrovski

Summary of Facts and Submissions

I. The patent proprietor lodged an appeal, received on 26 January 2018, against the decision of the Opposition Division posted on 17 November 2017 revoking European patent No. 2637492 pursuant to Article 101(3)(b) EPC, and simultaneously paid the appeal fee. The statement setting out the grounds of appeal was received on 27 March 2018.

II. Opposition was filed under the ground of Article 100(a) EPC for lack of novelty and for lack of inventive step and under the ground of Article 100(c) EPC for added subject-matter.

The opposition division revoked the patent having regard inter alia to the following documents:

(D1) US 7,228,807 B1
(D7) DE 689 16 976 T2

III. The respondent-opponent filed the following further evidence with their reply to the appeal of 14 August 2018.

(D10) US 2003/0183647 A1

IV. The appellant-proprietor requests that the decision be set aside and the patent maintained according to one of auxiliary requests 4,6-11, all filed with the statement of grounds of appeal of 27 March 2018. During the oral proceedings the appellant-proprietor withdrew its main request and auxiliary requests 1-3 and 5.

The respondent-opponent requests dismissal of the appeal. Should any of the appellant's requests be considered allowable with regard to added subject-matter and novelty, they further request that the case be remitted to the opposition division for further prosecution.

V. In preparation for oral proceedings the board issued a communication setting out its provisional opinion on the relevant issues.

Oral proceedings were held on 23 July 2020.

VI. The independent claims according to the relevant requests read as follows:

(a) Auxiliary request 4

"**1**. A seed distribution element (1) for precision pneumatic seed drills (3), of the type including:

- a sowing disc (16) which is rotated by a motor-driven transmission shaft (20) at controlled speed,
- a housing (10) with a fixed portion (11) in which the shaft (20) is supported and a portion (12) which is movable relative to the fixed portion (11) and can be closed against it,
- a seed collection chamber (15) being defined in the fixed portion (11),
- a pneumatic suction chamber (17) being defined in the movable portion (12),
- the sowing disc (16) being interposed between the portions (11, 12) and having opposed surfaces delimiting the chambers (15, 17),
- the sowing disc (16) having at least one ring of selector holes (23) extending between the opposed surfaces, and

- a seal (24) which is arranged on the movable portion (12) and is capable of sliding contact with the facing surface of the disc (16) when the portions (11, 12) are closed against one another, wherein a pressure differential is provided between the opposed surfaces in the region of a circumferential segment of the ring of holes (23),

characterized in that the seed distribution element (1) further comprises a thrust-bearing element (26) of the sowing disc (16), which thrust-bearing element (26) is supported rotatably in the movable portion (12) in order to withstand at least some of the axial load produced by the disc (16) on the seal (24)."

"10. A kit for the retrofitting of seed distribution elements (1) of precision pneumatic seed drills (3) wherein the distribution elements (1) are of the type including:

- a sowing disc (16) which is rotated by a motor-driven transmission shaft (20) at controlled speed,
- a housing (10) with a fixed portion (11) in which the shaft (20) is supported and a portion (12) which is movable relative to the fixed portion (11) and can be closed against it,
- a seed collection chamber (15) being defined in the fixed portion (11),
- a pneumatic suction chamber (17) being defined in the movable portion (12),
- the sowing disc (16) being interposed between the portions (11, 12) and having opposed surfaces delimiting the chambers (15, 17),
- the sowing disc (16) having at least one ring of selector holes (23) extending between the opposed surfaces, and

- a seal (24) which is arranged on the movable portion (12) and is capable of sliding contact with the facing surface of the disc (16) when the portions (11, 12) are closed against one another, wherein a pressure differential is provided between the opposed surfaces in the region of a circumferential segment of the ring of holes (23),

characterized in that the kit comprises:

- the movable portion (12) pre-assembled with:
- a thrust-bearing element (26) of the sowing disc (16), which thrust-bearing element (26) is supported rotatably in the movable portion (12) in order to withstand at least some of the axial load produced by the disc (16) on the seal (24)."

(b) Sixth auxiliary request

Claims 1 and 10 as in the fourth auxiliary request amended to add the following features at the end of both claims 1 and 10:

"..., wherein the thrust-bearing element (26) is mounted on the movable portion, the thrust-bearing element (26) comprising a shaft (27) rotatably mounted by means of bearings (28) in a seat (29) of the movable portion (12)."

(c) Seventh auxiliary request

Claims 1 and 10 as in the sixth auxiliary request amended to add the following features at the end of both claims 1 and 10:

"..., the shaft (27) having flanging (30) by means of which it is fixed to a thrust-bearing plate (31) which can bear on the surface of the disc which faces the

seal (24) in a zone radially inside the ring of holes (23) in order to withstand at least some of the axial load produced by the disc (16) on the seal (24)."

VII. The appellant-proprietor argued as follows:

Claims 1 and 10 of auxiliary request 4 lack novelty over D1. Auxiliary requests 6 and 7 are not admissible. The amendments of auxiliary requests 6 and 7 introduce subject-matter beyond the contents of the application as filed. New document D10 is admissible and justified as a legitimate reaction to the development of the proceedings. Claims 1 and 10 of auxiliary request 7 are not new over D10. In case of any request found by the board to be supported by the application as filed and also to be new over the cited prior art, the case should be remitted for examination of the opposition ground of inventive step raised but not dealt with in the decision under appeal.

VIII. The respondent-opponent argued as follows:

The subject-matter of Claims 1 and 10 of all requests is new over the cited prior art. Auxiliary requests 6 and 7 are a legitimate response to the findings of the opposition division and are admissible. Claims 1 and 10 of auxiliary requests 6 and 7 do not contain added subject-matter. New document D10 should not be admitted into the proceedings.

Reasons for the Decision

1. The appeal is admissible.

2. Background

The invention is directed to a seed distribution element for pneumatic seed drills, see patent specification paragraph [0001]. Pneumatic seed drills use an air pressure differential between the opposed faces of a rotating sowing disc (or selector), the disc having a ring of through holes of smaller section than the size of a seed. As a result of the pressure differential between the opposed faces of the disc, a seed adheres to each hole and is then transported by the rotation of the sowing disc from the seed selection zone to the point at which the pressure differential ceases and the seed is released to drop through a sowing pipe into the furrow or sowing track. Thus, in use, on one of the faces of the disc a strong air suction is exerted, see paragraph [0003]. The disc effects a substantial compression force against the seal that delimits the suction chamber while it slides on it, see paragraph [0004]. According to the claimed invention, in order to avoid severe abrasion of the seal, a thrust-bearing element is included to withstand some of the axial load produced by the disc, see paragraphs [0004], [0010] and claim 1.

3. Auxiliary request 4 - Novelty.

3.1 The appellant-opponent contests the conclusions of the opposition division that claim 1 lacks novelty over document D1, see section II.3.4. of the impugned decision.

3.2 The interpretation of the claimed feature "thrust-bearing element" is in dispute. In the field of mechanical engineering the term "thrust bearing" (without hyphen) has a usual and recognized meaning. For example, Wikipedia under the entry "thrust bearing" cited by the appellant gives the definition that it is "a particular type of rotary bearing. Like other bearings they permanently rotate between parts, but they are designed to support a predominantly axial load", and gives examples (thrust ball bearing, roller thrust bearing, Mitchell type thrust bearing). The Collins online dictionary (www.collinsdictionary.com/dictionary/) also cited gives as definition: "a low-friction bearing on a rotating shaft that resists axial thrust in the shaft", citing as a common example "a collar which bears against a ring of well-lubricated stationary and sometimes tilting pads". Similar definitions can be found elsewhere, as for instance in the online "engineering dictionary" (http://www.engineering-dictionary.org/Thrust bearing), cited by the appellant-proprietor.

However, in the contested claim 1, the hyphenation and unusual combination with the term "element" and the indication that the element prevents axial movement of a disc instead of that of a shaft renders the combined term ambiguous. Thus it is unclear to the skilled person reading the claim from the combined term alone whether the expression is used in its normal (engineering) sense or is meant to convey a different or wider meaning.

To the extent that on first reading of the claim alone they might not fully understand the technical significance of the term "thrust-bearing element" the

skilled reader, with their mind willing to understand, would therefore consult the rest of the patent, its description, figures and other claims in order to resolve any ambiguity. There, the thrust-bearing element is described in detail in paragraphs [0019] to [0023] in reference to figures 1 and 2, as element 26 comprising shaft 27 rotatably mounted by bearings 28 in a seat 29 and with a flange 30 fixed to a "thrust-bearing plate" 31 which bears on the surface of the disc. This element is driven in rotation with the sowing disc 16. The central part of the arrangement is the "thrust-bearing plate" 31 (named so). Plate 31 is, however, not a bearing in the conventional sense, as it is not in sliding or rolling contact with any component - as bearings should be - but rotates with both the shaft 27 and the disc 16, between which it is located. Rather, it bears against the disc 16 and is therefore meant to absorb any thrust produced by the disc on the seal. Neither plate 31 alone nor element 26 including the plate corresponds to what the skilled person would recognize as a classical thrust bearing, cf. the figures of the Wikipedia entry.

Consequently, by drawing on the description and drawings to gain a better understanding of the subject-matter of the claims, the skilled person realizes that the term "thrust-bearing" is used not to define a thrust bearing in the usual sense. Rather, they will conclude that it is used in the contested patent in a general sense to define the function of bearing or providing support against an axial force. Thus, contrary to the submissions of the appellant-proprietor, the claimed feature "thrust-bearing element", in the context of the patent, should not be given the restricted interpretation of the appellant-proprietor of rotary bearings in the form of ball

bearings or similar, but the wider interpretation of an element having a function to provide support against an axial load.

The claim further requires that the thrust-bearing element withstands at least some of the axial load produced by the disc on the seal. This load is produced by the vacuum on the side of the disc where the seal is provided. The vacuum causes the disc to move axially against the seal, thereby producing the load. Thus, any element that restrains the axial movement of the disc when vacuum is applied, as does the thrust-bearing element of the described embodiment, meets the claimed limitation.

3.3 The meaning of the expression "is supported rotatably in the movable portion" in claims 1 and 10 is also in dispute. In the board's understanding the expression only requires that the thrust-bearing element is located within the movable portion, though not necessarily supported by it, as also held by the opposition division. The skilled person has no reason to disregard this interpretation since it is a logical and credible reading of this feature that also makes technical sense and is not in contradiction to the rest of the patent. Indeed, according to the claim, the movable portion of the housing defines a suction chamber. Therefore, a thrust-bearing element located in the suction chamber and thus at the suction side of the rotating disk, is properly located to bear forces caused by that suction, however the element may be supported.

3.4 Turning to D1, this document discloses an element (handle 58) for retaining the seed disk 60 on hub 56, see column 5, lines 63-67 and figure 6. In column 6,

lines 8-15 it is further disclosed how the axial position of the seed disk 60 can be adjusted with respect to the rear wall 54 of the fixed portion 50:

> "...the retaining hub 56 can be rotated with respect to the inner shaft to thereby axially move the retaining hub 56 with respect to the rear wall 54 of the first housing member 50. Rotating the retaining hub 56 clockwise with respect to the drive shaft moves a seed disk 60 retained thereon toward the rear wall 54 and rotating the retaining hub 56 counterclockwise moves a seed disk 60 thereon away 15 from the rear wall 54 of the first housing member 50."

Subsequently it is indicated that the achieved axial relative position or axial adjustment between seed disk and rear fixed wall is locked in use:

> "Adjusting the retaining hub 56 causes the axial adjustment of the seed disk 60, after which the parts are locked into their desired orientation by locking pin 59."

In other words, axial free movement between disk 60 and housing rear wall 54 is constrained in use, when vacuum is applied. The handle 58, located in the movable portion of the housing, retains the seed disk 60 on the hub 56 (see column 5, lines 63-67) and is therefore the element constraining the disk against axial movement towards the seal. It therefore partly withstands the axial load produced on the seal, as claimed. The handle 58 is rotatably supported by the shaft 55 and is in use located in the movable portion, see figure 6 and column 6, lines 1-18.

The board thus considers that the opposition division was right to conclude that the handle 58 of D1 anticipates the claimed thrust-bearing element.

3.5 It is otherwise not in dispute that D1 also describes the other features of claim 1, namely a pneumatic seed distribution element 36 with a housing made of a fixed portion 50 and a movable portion 90, also including a sowing disc 60 with holes, the provision of a pressure differential and a seal 99, as claimed, as has been identified by the opposition division in section II. 3.4. of the impugned decision.

3.6 The board thus concludes that the subject-matter of claims 1 is not new over D1.

4. Auxiliary requests 6,7 and document D10 - Admissibility.

4.1 Auxiliary requests 6 and 7, filed with the statement of grounds, attempt to overcome the added subject-matter objection underlying the decision of the opposition division for the then auxiliary request 2 (corresponding to auxiliary request 5 also filed with the grounds but withdrawn at the oral proceedings before the Board), see written decision section 4, raised during the oral proceedings. They do so by specifying that the element is mounted *on* the movable portion as well as including detail (shaft, bearings, seat and additionally - for auxiliary request 7 - flanging, plate) of the specific mounting arrangement in the close (functional and structural) context in which the former feature is disclosed, as discussed in the impugned decision. The requests also add features further defining the location of the pressure differential, which the respondent argues are missing

from that specific context (see their reply to the appeal, page 20, point (2) at the top). Thus, these amendments can be considered as a normal reaction of a losing party to the impugned decision, as well as pre-emptively addressing issues then raised by the respondent. They do so in an foreseeable manner and at the earliest possible stage of the appeal proceedings so that the respondent has been able to respond and indeed has done so (see section 6 of their reply). It can therefore not be said that it represents a fresh case.

Finally, from the discussion of the novelty and added subject-matter issues for (now withdrawn) auxiliary request 1 in the statement of grounds, pages 7,8, relating to features also present in auxiliary requests 6 and 7 and their basis in the original disclosure, it is immediately evident to the reader why the appellant considers that these requests overcome the novelty and added subject-matter issues in the impugned decision. The statement of grounds therefore also complies with the requirement under Article 12(2) RPBA 2007 of sufficient substantiation for these auxiliary requests.

For the above reasons the Board decided to admit auxiliary requests 6 and 7 into the proceedings, using its discretion under Article 12(4) RPBA 2007.

4.2 Similarly, the filing of the new document D10 by the respondent-opponent with the reply to the appeal (and thus after the expiry of the opposition period) can also be considered as a fair and legitimate reaction to the filing of the above requests, which introduce further, unsearched features from the description. D10 is indeed the sole citation against these new features.

The Board thus also decided to admit D10 under Article 12(4) RPBA 2007

5. Auxiliary requests 6,7 - Added subject-matter.

5.1 The respondent-opponent submits that both requests contain added subject-matter in the form of an unallowable intermediate generalization.

5.2 According to established case law, it will normally not be allowable to base an amended claim on the extraction of isolated features from a set of features originally disclosed only in combination, e.g. a specific embodiment in the description. Such an intermediate generalisation is justified only in the absence of any clearly recognisable functional or structural relationship among the features of the specific combination or if the extracted features is not inextricably linked with those features, see Case Law of the Boards of Appeal, 9th edition 2019 (CLBA), II.E. 1.9. Intermediate generalisations.

5.3 Vis-à-vis auxiliary request 4, claim 1 of auxiliary request 6 has been amended to specify that the thrust-bearing element is rotatably supported on the movable portion, the thrust-bearing element comprising a shaft rotatably mounted by means of bearings in a seat of the movable portion. Textual basis for the amendment can be found on page 5, lines 22-25.

These features have only been described in combination with the shaft having flanging by means of which it is fixed to a thrust-bearing plate which can bear on the surface of the disc which faces the seal in a zone radially inside the ring of holes in order to withstand at least some of the axial load produced by the disc on

the seal, to build the thrust-bearing element structure and are therefore inextricably linked. Moreover, the complete set of features also have a clear and recognisable functional relationship since the essential thrust-bearing function of the element is only described to be provided by the whole set in combination. The inclusion of only part of these features in claim 1 of auxiliary request 6 represents therefore an unallowable intermediate generalisation.

Claim 1 is thus deficient under Article 123(2) EPC.

5.4 Claim 1 of the seventh auxiliary request overcomes the above added subject-matter objection by adding the cited missing features, for which textual basis can be found on page 5, line 25 to page 6, line 4.

The respondent-opponent further objects to the omission of the drive element 32, as also being an unallowable intermediate generalisation, since it is part of the thrust-bearing element and provides it with a rotary driven connection to the shaft 20.

The board notes that the original description further discloses on page 7, lines 2-3 for that embodiment of the thrust-bearing element that: "Provision is also made for the thrust-bearing element 26 to be made idle and not driven in rotation by the shaft 20." In the board's understanding this represents a direct and unambiguous disclosure that the drive element need not be present. In the absence of an inextricable link with the drive element, the omission of the latter does not represent an unallowable intermediate generalization.

The board is thus satisfied that claim 1 of the seventh auxiliary request complies with Article 123(2) EPC.

6. Auxiliary requests 7 - Novelty.

6.1 The respondent-opponent only contests the novelty of the claimed subject-matter in the light of D10. No other prior art is cited with regard to novelty.

6.2 New document D10 describes a seed distribution element of the type of D1. Relevant to the present auxiliary request is the detailed disclosure of the knockout assembly 120 supported on the movable portion 110, see figs 5, 13, 14 and paragraph [0055] of D10. The knockout assembly 120 includes an arm 124 pivotally attached to the movable portion and urged by a spring 128 against the seed disk 60. At the distal end of the arm 124 is a rotatable wheel 130 with a plurality of prongs 132. One prong 132 will extend into each of the passing holes 67 of the seed disk 60 for pushing out seeds that may become wedged in the holes 67 at the seed release area.

The respondent-opponent reads the specific claimed features of the thrust-bearing element in the known knockout assembly 120 of D10.

6.3 These elements are, however, not only functionally but also structurally different elements.

Irrespective of whether the known arm 124 can be considered a shaft in the broad sense of the term, the board does not identify at least the following claimed features in the known knockout element: that the shaft is rotatably mounted by bearings and has flanging by means of which it is fixed to a thrust-bearing plate which can bear on the surface of the disc which faces the seal in a zone radially inside the ring of holes in

order to withstand at least some of the axial load produced by the disc on the seal.

Neither is there explicit mention of such features, nor is the Board able to infer them from the figures. Thus, wheel 30 could easily be mounted on the distal end of the arm 24 without bearings; indeed, considering the dimensions, this seems likely. Moreover, there is no visible flanging of the shaft at the end of arm 124; a shaft is hardly visible, if at all. Furthermore, the wheel 130 cannot be considered a plate, nor is it or any part of it (including prongs 32) seen to bear on the surface of the disc in a zone radially inside the ring of holes as claimed; rather the prongs bear against the plate in the zone of the ring of holes.

6.4 The board thus concludes that the subject-matter of claim 1 is new over D10.

7. It goes without saying that the above conclusions for claim 1 with regard to added subject-matter and novelty also hold for independent claim 10 of auxiliary request 7, which includes the same features as discussed above.

8. Respondent's request for remittal

Under Article 11 RPBA 2020 the board may remit the case to the department whose decision was appealed if there are special reasons for doing so. In the present case, the opposition division did not consider the issue of inventive step, in particular not in the light of the arguments submitted against the relevant requests, see sections 6.2 in reference to section 3.2 of the respondent's reply arguing obviousness for the broader auxiliary request 2 in view of the combination of D7 and D10. Given the primary object of an appeal to

review the decision under appeal in a judicial manner, Article 12(2) RPBA 2020, and the fact that the decision under appeal does not consider the ground of inventive step, a special reason exists for the remittal of the case. Both parties indeed agree regarding the need for remittal.

For these reasons, the board remits the case to the opposition division for further prosecution on the basis of the seventh auxiliary request, that is to examine inventive step in the light of the arguments mentioned above. In this context, the board notes that the question whether the appealed decision, reasons 3.3, was right to hold a further document (D6) not proven to be prior art, need not be answered as it has no bearing on the question of inventive step for auxiliary request 7. This document was not cited in that context.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division for further prosecution.

The Registrar: The Chairman:

G. Magouliotis A. de Vries

Decision electronically authenticated