

Internal distribution code:

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

**Datasheet for the decision
of 10 September 2021**

Case Number: T 2998/18 - 3.2.04

Application Number: 11728299.6

Publication Number: 2595468

IPC: A01D43/10, A01D43/08

Language of the proceedings: EN

Title of invention:

CRACKER ROLLER ASSEMBLY

Patent Proprietor:

AGCO International GmbH

Opponent:

Deere & Company/John Deere GmbH & Co. KG

Headword:

Relevant legal provisions:

EPC Art. 100(a)
EPC 1973 Art. 56

Keyword:

Inventive step - (yes)

Decisions cited:

Catchword:



Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 2998/18 - 3.2.04

D E C I S I O N
of Technical Board of Appeal 3.2.04
of 10 September 2021

Appellant: Deere & Company/John Deere GmbH & Co. KG
(Opponent) One John Deere Place/John-Deere-Str. 70
Moline, IL 61265/US/68163 Mannheim/DE (US)

Representative: Holst, Sönke
John Deere GmbH & Co. KG
Mannheim Regional Center
Global Intellectual Property Services
John-Deere-Strasse 70
68163 Mannheim (DE)

Respondent: AGCO International GmbH
(Patent Proprietor) Victor von Bruns-Strasse 17
8212 Neuhausen am Rheinfall (CH)

Representative: AGCO Intellectual Property Department
AGCO Limited
Abbey Park Stoneleigh
Kenilworth CV8 2TQ (GB)

Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted on 26 October 2018 rejecting the opposition filed against European patent No. 2595468 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman A. de Vries
Members: G. Martin Gonzalez
T. Bokor

Summary of Facts and Submissions

- I. The appeal was filed by the appellant-opponent against the decision of the Opposition Division to reject the opposition filed against the patent in suit.
- II. The Opposition Division held that granted claim 1 was new and involved an inventive step having regard inter-alia to the following evidence:
- D1 EP 1 600 050 A1
 - D2 EP 1 600 049 A1
 - D3 Prospect "Big X", Krone, November 2009
 - D4a Publicity leaflet "Scherer HP Processor", Scherer Design Engineering, April 2010
 - D5 US 7,681,384 B2
- III. The appellant-opponent filed the following further evidence with the statement of grounds:
- D8 EP 1 530 894 A1
 - D9 Manual for a Krone Big X, dated 02.05.2005, pages VII-32 und VII-33
- IV. In preparation for oral proceedings the Board issued a communication, dated 25 November 2020, setting out its provisional opinion on the relevant issues.
- Oral proceedings were held by videoconference before the Board on 10 September 2021.
- V. The appellant-opponent requests that the decision under appeal be set aside, and that the European patent No. 2595468 be revoked.

The respondent-proprietor requests that the appeal be dismissed, i.e. that the opposition be rejected (main request) or alternatively that the decision under appeal be set aside and the patent be maintained in an amended form on the basis of an auxiliary request filed with the response to the grounds of appeal dated 31 May 2019, re-filing an earlier request filed before the Opposition Division.

VI. Claim 1 of the main request reads as follows:

"A roller assembly (7) for a harvesting machine comprising two rollers (12, 13) mounted to two respective frames (10, 11) for rotation about their longitudinal axes, said rollers (12, 13) driven by a belt arrangement, the rollers spaced at an axial distance providing a longitudinal spaced (14) therebetween through which harvested material passes, one frame (10, 11) moveable with respect to the other frame for adjustment of the axial distance and wherein a minimum axial distance is set by adjustable spacing means (33) **characterised in that** the belt arrangement is fitted around a tension pulley (18), said tension pulley (18) maintaining a tension in the belt arrangement so that the rollers (12, 13) are biased towards the minimal axial distance and permitting movement of one frame (10, 11) to increase the axial distance should a foreign body or high volume harvest pass through the longitudinal space".

VII. The appellant's arguments can be summarised as follows: The subject-matter of granted claim 1 lacks an inventive step in the light of D1, D2, D3, D4a, D5, D8, D9 and common general knowledge of the skilled person.

VIII. The respondent's arguments can be summarised as follows:
Granted claim 1 is new and inventive over the submitted prior art.

Reasons for the Decision

1. The appeal is admissible.

2. The invention relates to a cracker roller assembly for a harvesting machine. Cracker units typically comprise two longitudinal cracker rollers driven by a belt. The rollers are arranged with a gap in between, through which harvested crop is fed. Upon entry of a foreign body one or both of the rollers can yield a certain distance against the force of resilient elements such as springs or bracing means, see specification paragraph [0003]. According to the invention the belt is used to bias the yielding roller towards the minimal gap. The use of the belt arrangement to maintain the rollers at a minimum distance reduces the need for springs or bracing means, see paragraphs [0007]-[0008].

In the main embodiment of the patent biasing towards a minimum axial distance is achieved by having the belt 16 meander in a pronounced S shape from the pulley 18 around the outer or right hand roller 13 first and then the inner or left roller 12, see figure 5a and paragraph [0020].

3. Main request - Inventive step.

3.1 The appellant-opponent contests the positive findings of the Opposition Division that granted claim 1 involves an inventive step over the teachings of documents D1, D2, D3, D4a, D5, D8, D9 and common general knowledge of the skilled person.

3.2 The main point of contention is whether the submitted prior art or common general knowledge discloses or suggests the claimed functional feature that the tension in the belt arrangement is so that the rollers are biased towards the minimal axial distance, as claimed. In the Board's view, it does not.

3.3 According to established case law, the skilled person when reading a claim should try, with synthetical propensity, to arrive at an interpretation which is technically sensible and takes into account the whole disclosure of the patent, see Case Law of the Boards of Appeal, 9th Edition 2019 (CLBA), II.A.6.1.

In the present case, the claimed functional feature requires that the rollers are biased towards the minimal axial distance. It thus calls for a configuration that effectively acts to restore the rollers to its minimal axial distance position during normal use. This force, consequently, must be of sufficient magnitude to overcome opposing forces in that direction, such as those made by harvested crop flowing between the rollers and other frictional forces. The contested feature therefore requires a substantial minimum force or force component in the direction towards the minimal axial distance position so as to have the technically meaningful effect of

obtaining movement of the roller, that is to effectively bias the roller.

3.4 The appellant-opponent contends that the above feature is suggested in an obvious manner by the combination of teachings of D1 and D2. It is readily evident that D1 and D2 are from the same manufacturer and describe as main embodiment the same machine with the same elements, at least in respect of the cracker assembly. The skilled person would thus quite naturally combine the teachings of both documents when seeking to carry out the described embodiment of cracker assembly. The question is whether such a combination would lead as a matter of obviousness to an arrangement having the contested feature.

3.4.1 There is no explicit disclosure in D1 or D2 of any force in the direction towards urging the rollers together due to the tension on the belt other than what might be inferred from the figures. The appellant-opponent mainly relies on the disclosure of figure 6 of D1. This figure shows a known arrangement of grinding rollers 57' with a tensioned driving belt. As described in paragraphs [0016]-[0018] of D2, the left roller (18 in D2 or left 57' roller in figure 6 of D1) is movable and pivots about an axis above it, depicted in figure 6 of D1 and identified as 16 on figure 1 of D2. The rollers 57' in figure 6 of D1 are positioned at their minimal axial distance (determined by wedges as described in paragraph [0018] of D2). In this position the movable roller 57' is at an intermediate position equally spaced between the other roller 57' (the fixed roller) and the turn pulley (the leftmost pulley on figure 6 without a reference numeral). The belt thus loops around the movable roller 57' substantially symmetrically. The resulting force applied by the

tensioned belt in the position shown is therefore largely perpendicular to the line joining the two rollers' 57' axes, on the plane of figure 6, and thus neither urging the rollers together nor away. This is so since the force components in the direction along that joining line - that are urging together or away the two rollers - symmetrically applied at each side of the roller 57' by the belt ends cancel each other out.

3.4.2 In use, by widening the gap between rollers either through setting an increased minimal distance or upon entry of a foreign body, the left roller 57' yields to the left from its intermediate position. The tensioned belt applies a resulting force in this position that is correspondingly at an angle and has thus a component (parallel to the line connecting the rollers 57') towards the minimal distance. It is however difficult to infer its magnitude from the information in figure 6 of D1, other than it will be small due to the cancellation effect in this direction of the two force components applied by the belt at opposite sides of the roller as explained above. This appears to be all the more so in the light of the dimensions of the roller and the range of yielding movement as explained by the parties at the oral proceedings. The parties agreed that movable roller 57' has a diameter in the order of 25 to 30 cm, while its range of movement would be about 5° about a pivot point (at 16 in figure 1 of D1 corresponding in figure 6 of D2 to unreferenced bolt slightly to the left and between roller 57' and a spring rod some centimeters above roller 57'). Any sideways yielding movement due to widening of the gap caused by foreign objects or a different minimal axial distance setting would be relatively small compared to the dimensions of the roller and pivot arm length. The Board can thus but conclude that the component towards

the minimal distance would be rather small indeed in comparison to the main perpendicular component. If the movable roller 57' were to be moved to the right in figure 6 by reducing the spacing, that component would in a first portion of its yielding movement be directed towards the *left* i.e. away from the (adjusted) minimal distance. There is therefore no indication either from the description or inferable from the drawings that might lead the skilled person to perceive that force component other than incidental and negligible in the context of biasing the rollers against each other. The skilled person would certainly not perceive the belt in D1/D2 as designed or arranged to contribute in a meaningful way to restoring the roller 57' to its normal position. On the contrary, the only explicit teaching in D1 and D2 in this regard is that the rollers are urged together by a spring (cf. D1, figure 6, spring underneath right hand roller 57'; D2, figure 2, spring 38 and paragraph [0018]). The skilled person would thus not regard the arrangement depicted in figure 6 of D1 as an arrangement where the belt tension biases the roller to its minimal axial distance position, as the claim requires. He would also not regard the arrangement as implicitly teaching the use of the belt tension to that effect.

- 3.4.3 The Board thus holds that the combination of teachings of D1 and D2, starting from either document, would not lead the skilled person to the claimed subject-matter as a matter of obviousness, since the feature of maintaining a tension in the belt arrangement so that the rollers are biased towards the minimal axial distance is neither taught nor suggested by this combination.

3.5 The same conclusion holds when combining D4a with D5 or D3 with common general knowledge, D1, D4a, or D8/D9. As the appellant acknowledged at the oral proceedings, these combinations all rely on D1, D4a, D8 or D9 teaching how to configure the belt in a harvesting machine. In all three documents the arrangement of the belt about the various rollers is essentially as shown in figure 6 of D1, cf. the bottom right hand figure of D4, and the inset in the bottom figure on page 32 of D9. Here also the argument is that when the yielding roller has moved from its rest position nearest the other roller, the force exerted by the tension belt on the yielding roller will have a component towards the minimal distance. For the reasons given above the Board does not believe the skilled person would recognize that these belts contribute in any meaningful way to restoring the roller to its rest position. This is all the more so in the case of the figures of D4a and D9 which offer very little detail.

The Board thus concludes that none of these combination documents describes or teaches the use of a tensioning belt so that the cracker rollers are biased towards each other at a minimal distance, as claimed.

As regards the combination of D3 with common general knowledge, absent any evidence the Board has no reason to believe that the skilled person would as a matter of course use a tensioning belt rather than say a commonly known urging spring as restorative means. Otherwise, when seeking to provide a belt set up for moving the pulley wheels of the known cracker assembly of D3 they would most likely use the usual, customary set-up, as represented by D1 or D4a, or similar. As discussed above, such set-ups do not teach the relevant differentiating feature.

- 3.6 In the light of the above, the Board concludes that none of the cited documents, or common knowledge, teaches or suggests a tensioned belt arrangement so that the cracker rollers are biased towards their minimal distance, as claimed in the characterizing portion of claim 1. The subject-matter of claim 1 as granted thus involves an inventive step in the light of the prior art cited. The Board thus confirms the findings of the decision for inventive step.
4. As the appellant has only challenged the decision's findings regarding inventive step, their appeal fails.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



G. Magouliotis

A. de Vries

Decision electronically authenticated