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# Datasheet for the decision of 15 October 2014

**Case Number:** T 1484/12 - 3.2.01

**Application Number:** 06100904.9

**Publication Number:** 1650108

**IPC:** B62D7/18

**Language of the proceedings:** EN

**Title of invention:**
Tractor with front suspension

**Patent Proprietor:**
Deere & Company

**Opponent:**
AGCO GmbH

**Headword:**

**Relevant legal provisions:**
EPÜ Art. 56

**Keyword:**
Inventive Step - YES

**Decisions cited:**

**Catchword:**

Beschwerdekammern
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**Case Number: T 1484/12 - 3.2.01**

# D E C I S I O N
## of Technical Board of Appeal 3.2.01
## of 15 October 2014

| | |
|---|---|
| **Appellant:** (Opponent) | AGCO GmbH<br>Johann-Georg-Fendt Strasse 4<br>87616 Marktoberdorf (DE) |
| **Representative:** | Smith, Louise Marie<br>AGCO Limited<br>Abbey Park<br>Stoneleigh<br>Kenilworth, Warwickshire CV8 2TQ (GB) |
| **Respondent:** (Patent Proprietor) | Deere & Company<br>One John Deere Place<br>Moline, IL 61265-8098 (US) |
| **Representative:** | Magin, Ludwig Bernhard<br>John Deere GmbH & Co. KG<br>Global Intellectual Property Services<br>John-Deere-Strasse 70<br>68163 Mannheim (DE) |
| **Decision under appeal:** | **Interlocutory decision of the Opposition Division of the European Patent Office posted on 2 May 2012 concerning maintenance of the European Patent No. 1650108 in amended form.** |

**Composition of the Board:**

| | |
|---|---|
| **Chairman** | G. Pricolo |
| **Members:** | H. Geuss |
| | D. T. Keeling |

## Summary of Facts and Submissions

I. The appeal of the opponent is directed against the interlocutory decision of the Opposition Division of the European Patent Office posted on 2 May 2012 concerning maintenance of the European Patent No. 1650108 in amended form.

II. The opposition division decided that the subject-matter of claim 1 as amended during the opposition proceedings was not rendered obvious in the light of the state of the art:

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| EP 0 807 543 A2 | (O1) |
| US 2,775,307 | (O10) |
| US 2,105,781 | (O11) |
| UK 433,510 | (O15) |

III. Oral proceedings were held on 15 October 2014. The appellant (opponent) requested that the decision under appeal be set aside and that the European patent be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed.

IV. Claim 1 according to the patent as amended during the opposition proceedings reads as follows:

A tractor comprising:
rear wheels(12);
front wheels (14);
a chassis (16) to which the front and rear wheels (14, 12) are mounted;
left and right upper and lower control arms (42, 62) having inboard ends (44, 68) mounted to the chassis

(16) for pivotal motion about upper and lower axes (40, 84) respectively for up and down motion of outboard ends (52, 86) of the control arms (42, 62);
left and right steering knuckles (88) pivotally attached to the outboard ends (52, 86) of the left and right control arms (42, 62) respectively for pivotal motion about turning axes (90), the steering knuckles (88) carrying the final drive assemblies (92);
left and right drive shafts (96) extending to final drive assemblies (92) carried by the steering knuckles (88),
the chassis (16) including a cast front wheel drive differential case (26) with front drive shafts (96) extending laterally therefrom to the left and right final drive assemblies (92) coupled to left and right front wheels (14) to drive the front wheels (14),
the differential case (26) being integrally cast with an upper mounting boss (36) to which the upper control arm (42) is attached,
the differential case (26) being integrally cast with a lower mounting bose [*sic*] (58) to which the lower control arm (62) is attached,

**characterized in that,**

the differential case (26) is an integral part of the tractor frame, and
the differential case has a pair of bolt holes (83,85) receiving bolts (80,82) to mount a rear pivot pin (76) for attaching the lower control (62) arm thereto.

V. The appellant's submissions may be summarized as follows:

The subject-matter of claim 1 of the patent as amended during the opposition proceedings does not involve an

inventive step. The invention in suit differs from the tractor according to document O1 only by the feature of the characterizing portion that "the differential case has a pair of bolt holes (83,85) receiving bolts (80,82) to mount a rear pivot pin (76) for attaching the lower control (62) arm thereto" (referred to as feature ii).
The feature that "the differential case (26) is an integral part of the tractor frame" (referred to as feature i)) is also shown in O1. In particular, one embodiment of O1 discloses that the axle 1 and thereby the central body (i.e. the differential casing) is fixedly mounted on the supporting structure of the tractor.
In the patent in suit feature i) must be understood as meaning that the differential case is mounted to the supporting structure. However, the differential case and the tractor frame structure are different technical elements since it is not possible that the frame and the differential case form a one piece part. As a consequence the technical situation in O1 and the contested invention is the same: the differential case is fixedly mounted to the tractor frame.

Even if one would follow the respondent's argument that the differential case is not only fixedly mounted to the tractor frame but the differential case is (a part of) the tractor frame, feature (i) is rendered obvious by document O11, which discloses a differential case integrated in a vehicle frame structure: the "differential mechanism is contained within a housing 24 forming part of the chassis tube" (cf. description, page 2, left column, lines 41 to 42). In this context, it is irrelevant that O11 does not shows a tractor but a chassis for motor driven vehicles in general. The skilled person would immediately recognise the

technical advantage by application of this feature in the tractor frame according to O1 and would consider this measure without involving an inventive step.

Furthermore, feature ii) which defines that "the differential case has a pair of bolt holes (83,85) receiving bolts (80,82) to mount a rear pivot pin (76) for attaching the lower control (62) arm thereto" is also rendered obvious by the state of the art, in particular O10 and O15.

VI. The respondent replied to the arguments as follows:

A differential case being an integral part of the tractor frame according to feature i) is not disclosed in document O1. "Being an integral part" does not only mean that the differential case is fixedly mounted to the vehicle structure. According to the patent in suit the differential case is the frame – at least a part of it, in the meaning of that the differential has a load-bearing and stabilizing function for the tractor structure.

From technical point of view, the design situation is thus simplified, because no differential case must be placed in addition to the frame-structure.

Feature i) results in the advantage that the axle suspension of the tractor requires relatively few components which results in a good ground visibility and a high crop clearance (cf. patent description, paragraphs [0005], [0006],[0010]).

In addition, the skilled person would not rely on document O11. O11 addresses a vehicle frame structure in general. The specific situation of a tractor, which

was the reason for the underlying invention, is completely different to a vehicle. In particular, the requirement for sight conditions for a tractor driver demands that the ground between the engine block and the front wheels is visible. In a normal vehicle this area is covered by the car body.

For this reason, feature ii) which defines the specific attachment of the lower control arm provides a synergetic effect to feature i). The attachment of the lower control arm with a pair of bolt holes receiving bolts to mount the rear pivot pin supports the requirement of a good sight to ground in this vehicle area.

## Reasons for the Decision

1. The appeal is admissible.

2. The invention as defined in claim 1 of the patent as amended by the opposition division is considered as involving an inventive step, having regard to the cited documents O1, O10, O11 and O15, cf. Article 56 EPC.

2.1 The invention according to claim 1 differs from the tractor according to O1 by the characterizing portion:

i) the differential case (26) is an integral part of the tractor frame, and

ii) the differential case has a pair of bolt holes (83,85) receiving bolts (80,82) to mount a rear pivot pin (76) for attaching the lower control (62) arm thereto.

2.2 The appellant states that feature i) is also disclosed in O1 since this feature has to be understood as meaning that the differential case is fixedly mounted to the frame.

However, the Board holds that feature i) and the corresponding description define that the differential case is itself the relevant frame part in the front region of the tractor, cf. paragraph [0010]: "There are no frame members extending longitudinally of the tractor along side or beneath the engine. The differential case is the frame".

Accordingly, the Board follows the respondent's argument that the main difference between the present invention and the tractor according to O1 is that the differential case is essential for the structure in terms of load-bearing and stability.

2.3 The problem to be solved by feature i) is to improve the sight condition and the crop clearance, cf. paragraphs [0005] and [0006] of the patent specification.

2.4 The integration of feature i) in a tractor structure according to O1 involves an inventive step. The skilled person would not get a hint in the state of the art to integrate the differential case into the frame structure.

2.4.1 The appellant submits that the integration of the differential case is merely an alternative to the structure as shown in O1 which the skilled person would consider in order to solve the given problem. In particular O11 would lead the person skilled in the art to integrate the differential case in the frame

structure of a vehicle.

2.4.2 First, the Board states that a differential case being an integral part of the framework of a tractor structure is no commonly known alternative to the well-known design according to O1.

Document O11 is the sole document on file mentioning that the differential case is an integral part of the frame structure. However the vehicle of O11 is of a very special structure and consists of a central tubular girder with independent axle units, whereby "front and back wheel steering may be employed", cf. page 1, left column, lines 51 et seq. and figure 1.

Further, the appellant does not demonstrate any motivation on the part of the skilled person as to why O11 should be considered in order to solve the problem of increasing the sight conditions and the crop clearance.
Both aspects are not addressed in O11 and the restrictions to sight conditions on a tractor differ significantly from those of a vehicle: the area of the wheels and axles between the engine and the wheels, which is normally covered by the car body in conventional motor vehicles, is advantageously visible for the farmer. In the Board's view, the idea that document O11 would be considered in order to implement the differential case as an integral part of the vehicle frame is based on hindsight.

2.5 Since already it is not obvious to integrate feature i) into the tractor according to O1, it is not necessary to examine the influence of feature ii) on inventive step and whether features i) and ii) are technically combined by synergetic effects.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed

The Registrar: The Chairman:

A. Vottner G. Pricolo

Decision electronically authenticated