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**Datasheet for the decision
of 5 June 2019**

Case Number: T 0113/16 - 3.2.04

Application Number: 10156146.2

Publication Number: 2227939

IPC: A01D46/28

Language of the proceedings: EN

Title of invention:

Fruit harvester with system and method for detecting and reducing forces exerted against rigid standing objects

Patent Proprietor:

CNH Industrial France

Opponent:

PELLENC (Société Anonyme)

Headword:

Relevant legal provisions:

EPC Art. 56, 83, 100(a), 100(b), 100(c), 123(2)

Keyword:

Inventive step - (yes)

Sufficiency of disclosure - (yes)

Amendments - allowable (yes)

Decisions cited:

Catchword:



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Case Number: T 0113/16 - 3.2.04

D E C I S I O N
of Technical Board of Appeal 3.2.04
of 5 June 2019

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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 9 November 2015
rejecting the opposition filed against European
patent No. 2227939 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 appellant opponent lodged an appeal, received on 8 January 2016, against the decision of the Opposition Division of the European Patent Office posted on 9 November 2015 rejecting the opposition against European patent No. 2227939 pursuant to Article 101(2) EPC, and simultaneously paid the appeal fee. The statement setting out the grounds of appeal was received on 9 March 2016.
- II. The opposition was filed under Article 100(a) EPC for lack of novelty and lack of inventive step, under Article 100(b) EPC for insufficiency of disclosure and under Article 100(c) EPC for added subject-matter.

The Opposition Division held that none of the opposition grounds raised prejudiced the maintenance of the European patent, having regard inter-alia to the following evidence:

- (D1) Alleged public prior use "Pellenc" based on, *inter alia* the following evidence:
(D1.6.2) "Report on functioning of the Post Protector Kit ref. 880602041VP" dated 8 August 2013 from LUCIANO LEONINI.
(D2) FR 2 768 017 A1

- III. In a communication of 19 February 2019 in preparation for oral proceedings the Board gave a provisional opinion on the relevant issues.

Oral proceedings were duly held before the Board on 5 June 2019.

- IV. The appellant opponent requests that the decision under appeal be set aside, and that the European patent No. 2 227 939 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 the auxiliary requests 1 to 5 filed with letter dated 25 September 2015.

- V. The granted independent claims read as follows:

1. "A fruit harvester (10), comprising:
a movable frame (12);
harvesting apparatus (24) supported on the frame (12) for movement therewith and configured for straddling fruit bearing plants (22), the harvesting apparatus including at least one shaker member (40) disposed so as to be located beside the fruit bearing plants straddled by the harvesting apparatus, and a drive (38) supported on the frame (12) and controllably operable and configured for drivingly moving the at least one shaker member relative to the frame for exerting forces (F) against the plants straddled by the harvesting apparatus for releasing at least some of the fruit therefrom, a predetermined portion (82) of the shaker member of the harvesting apparatus (24) exerting the greatest forces (F); and
a sensor (78) supported on the frame (12) and configured so as to automatically sense presence of an upstanding rigid object (70) when about to be or when initially straddled by the harvesting apparatus (24), and in cooperation with the drive (38) to responsively automatically cause a change in the movement of the at

least one shaker member (40), a controller (64) connected to the sensor (78) and the drive (38); and a speed device (66) connected to the controller and operable for determining a speed of movement of the frame (12),
the controller (64) being configured and operable for altering the operation of the drive (38) for reducing the forces (F) exerted by the at least one shaker member (40) in response to the sensing of the presence of the rigid object (70) only as the rigid object (70) is straddled by the harvesting apparatus (24) and adjacent to said predetermined portion (82),
characterised in that the controller (64) is configured to calculate the time period for the object (70) to travel the distance from the sensor (78) to the predetermined portion (82) of the shaker member (40) of the harvesting apparatus (24) on the speed of movement of the frame (12) and to alter the operation of the drive (38) for reducing the forces (F) for a time period sufficient for movement of the predetermined portion (82) past the object (70)."

11. "A method of harvesting fruit, comprising steps of: providing an automatic harvesting machine (10) having a frame (12) supporting at least one shaker assembly (26) disposed beside and defining a passage (28) configured for successively receiving a row of fruit bearing plants (22), the at least one shaker assembly comprising at least one shaker member (40), and at least one drive (38) connected in driving relation to the at least one shaker member and automatically operable for oscillating the shaker member for exerting forces (F) against objects located within the passage and contacting the shaker member (40), including the fruit bearing plants received within the passage for detaching at least some of the fruit therefrom, a

predetermined portion (82) of the shaker member (40) exerting the greatest forces against the objects; providing at least one sensor (78) in connection with the frame (12) and operable for sensing entry of a standing rigid object (70) into the passage (28); and providing a controller (64) connected to the sensor (78) and the drive (38), and a speed device (66) connected to the controller and operable for determining a speed of movement of the frame (12), in response to the sensing of the entry of a standing rigid object (70) into the passage (28), automatically reducing the oscillations of the at least one shaker member (40) so as to reduce any forces (F) exerted thereby against the rigid object, wherein said step of reducing the oscillations is executed only when the rigid object (70) is within the passage adjacent to the predetermined portion (82) of the shaker member (40) and the oscillations are automatically increased after the predetermined portion has passed the rigid object, characterised in that:

the controller (64) is configured to calculate the time period for the object (70) to travel the distance from the sensor to the predetermined portion (82) of the shaker member (40) based on the speed of movement of the frame, and

the controller (64) is configured and operable for altering the operation of the drive for reducing the forces (F) exerted by the shaker member (40) in response to the sensing of the presence of the rigid object (70) for a period of time sufficient for movement of the predetermined portion (82) of the shaker member (40) past the object."

VI. The appellant argued as follows:

The subject-matter of granted claim 1 contains added subject-matter. The invention as defined in claims 1 or 11 and in claim 12 is not sufficiently disclosed. The subject-matter of claims 1 and 11 does not involve an inventive step in the light of D2 in combination with the prior use D1 or with common general knowledge.

VII. The respondent argued as follows:

The subject-matter of the granted claims does not extend beyond the contents of the originally filed documents. The granted patent discloses the invention as defined in claims 1, 11 and 12 in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. It is not sufficiently proven that the features said to be disclosed in D1.6.2 were made available to the public through the prior use D1. Thus neither D2 nor D1 suggests the features of the characterising portion of claims 1 or 11, which also do not belong to the common general knowledge of the skilled person. The claims therefore involve an inventive step in the light of the cited prior art.

Reasons for the Decision

1. The appeal is admissible.
2. The invention relates to a harvester for fruits such as grapes or berries. Typically a line of posts supports wires, which in turn carry, for example, the vines. A frame of the harvester, including a shaker member within it, travels along a row of vines, straddling

them, while the shaker member shakes them to release the fruit. The invention is concerned with a system for detecting the rigid standing posts in the path of the harvesting apparatus, altering the operation of the shaker as it passes the post to reduce or minimize forces as it strikes the posts, which would otherwise cause wear, damage, noise and the like, see specification paragraph [0001].

3. Amendments - granted claims

3.1 The appellant objects to the introduction of the formulation in granted claim 1 that the shaking forces are reduced only as the rigid object is "*straddled by the harvesting apparatus (24) and adjacent to said predetermined portion (82)*". This replaces the original formulation of claim 1 that the shaking forces were reduced only as the rigid object is "*straddled by a predetermined portion (82)*". The predetermined portion is defined as the portion of the shaker member exerting the greatest forces. The object of restricting the reduction of forces to take place *only* in a certain region is aimed at minimising any negative effect on harvest yield.

3.1.1 The Opposition Division held that the amendment was directly and unambiguously derivable from the original disclosure and referred in particular to originally filed method claim 13 and paragraph [0010] of the original description, see reasons point 2. Claims 1 and 13 moreover referred to the same embodiment and "adjacent to the predetermined portion" was to be understood as "alongside that portion".

3.1.2 The appellant however argues that originally filed claims 1 and 13 define different zones of force reduction and thus describe different embodiments. In this context "adjacent to the predetermined portion" must be read as "in front of the predetermined portion". Granted claim 1, by combining terminology from both original claims ("straddled"; "by the harvester"; and "adjacent to the predetermined portion") now defines a 3rd narrower zone. Force reduction in this zone, when the post is straddled and immediately in front of the predetermined portion, is not originally disclosed. Furthermore, original claim 13 does not mention a controller configured to reduce forces, which has been added to granted method claim 11 resulting in further added subject-matter.

3.2 The Board is not convinced by these arguments. These are predicated on a disjointed, fragmented reading of the original (and granted) claims in isolation of each other and of the further disclosure of description and figures.

3.2.1 In accordance with established jurisprudence, the question of added subject-matter is to be considered within the limits of what the skilled person would derive directly and unambiguously, using common general knowledge from the *whole* contents of the application as filed, cf. Case Law of the Boards of Appeal, 8th edition 2016 (CLBA), II.E.1. The contents of the application as filed comprise claims, description and drawings, CLBA, II.E.1.1. In interpreting claims, in order to determine their content, the skilled person reads them with synthetic propensity, building up rather than tearing down - with the aim of making technical sense of their wording and in a way that takes account of the whole disclosure of the patent,

CLBA, II.A.6.1. Claims are thus read with a mind willing to understand, and using normal reading skills and doing so contextually. The same naturally applies to the description and drawings, bearing in mind also their purpose to describe or illustrate by detailed examples the basic concept of an invention claimed. Thus, the skilled person approaches claims, description and drawings as integral and connected parts of a whole disclosure. This applies also to determining the contents of the application as filed.

3.2.2 In the present case it may be that original apparatus claim 1 and method claim 13 use different wording to describe the force reduction zone. However, this does not mean that they therefore necessarily describe different subject-matter. That depends on the particulars of the case. In this case the Board is of the view that the textual differences are not so striking or significant that they would lead the skilled person to think that they must relate to essentially different subject-matter. In the Board's view these textual differences rather fall within the inaccuracies and inconsistencies that are unfortunately ubiquitous in patent documents, but which can be easily resolved by reference to the description and drawings. These paint a clear and consistent picture of reducing movement of the shakers 40 (and consequently any striking forces) when the object is within the passage 28 adjacent to a predetermined portion 82 of the shaker members 40 subject to maximum flexure and force F , as stated e.g. in paragraphs 0010, 0027 and shown in figures 3 and 4. Here "adjacent" using normal reading skills and a mind desirous of understanding will be understood as nothing other than "next to" or "very near" (OED). Thus the post must be next to or very near the predetermined portion of maximum flexure 82 when

shaking movement and force is reduced, that is reduction is initiated. Furthermore, paragraphs 0028 to 0030 of the application as filed explain that the controller 64 determines the time of passage of an object "to and through the region 82" so that "reducing forces ... will be executed at the appropriate time". Reduction lasts until the post has passed the predetermined portion, see also claim 2 as filed.

It is furthermore clear, when reading these paragraphs of the application as filed in context, that passage 28 is defined as [passing] through frame 12, see paragraph 0017 and figure 2, and so extends considerably beyond the area between the shakers 40, as is also clear from figure 3 itself. In this passage 28 an object will therefore be straddled by the harvesting apparatus; the two expressions are synonymous. The appellant appears to differentiate between the two, see the figures on page 9 to 11 of the statement of grounds, without any apparent basis in the original disclosure. In those figures furthermore the straddling zone ("limite de l'enfourchement par l'appareil de récolte 24") has also been considerably foreshortened without clear basis - and rather illogically - with placement of the sensors 78 (cf. figure 3; unnumbered in the Appellant's figures) far outside the straddling zone.

- 3.2.3 From the above it follows that in the sole embodiment a post is in the passage - and thus straddled by the harvesting device - very near to the predetermined portion 82 of maximum flexure of the shaker members when force is reduced. The description and drawings as filed also do not suggest that a possible alternative positioning of the post should be considered when determining the appropriate force reduction.

3.2.4 Nor do as filed claims 1 and 13, when read with the mind willing to understand and using normal reading skills and doing so contextually, suggest anything different than what the skilled person learns from the sole embodiment set out in the description and figures. Even if somewhat inaccurate, claim 1 is nonetheless sufficiently clear for them to understand that it limits force reduction to the instant when the object is straddled by the harvesting device, namely by its predetermined portion. In the method of claim 13 this is formulated alternatively as only reducing the forces, i.e. initiating the reduction, when the object is within the passage, that is straddled by the harvesting device, very near to the predetermined portion, and effectively discontinuing the force reduction after the object passing through the portion. Other than possibly in the mind of the philologist the two formulations, one expressing the extent of duration, the other the beginning and end, will be understood as relating to the same concrete technical teaching.

3.2.5 Upon grant the relevant feature of claim 1 has been changed to bring it into closer accord with the formulation in claim 13. Thus, after defining the predetermined portion in feature F, the controller now reduces forces only as the object is straddled (that is in the passage) and adjacent, that is very near to that predetermined portion 82. It so defines initiation of force reduction as in original and granted claims 13, with the end of reduction implicit in the claim's final characterizing feature. This corresponds to the force reduction as above and consistently described in the application as filed. Consequently, no new information has been added.

3.2.6 That in granted claim 1 it is now the controller and not as in original claim 1 the harvester that is configured to reduce the forces has a clear and unequivocal basis in as filed dependent claims 2 and 3, both supported by the detailed description of the sole embodiment. Similarly, the inclusion of the controller in granted method claim 13 to bring it into closer conformity with apparatus claim 1 has a clear basis in claims 2 and 3 as filed. Again reading as filed claim 13 in context it is clear that it is directed at the method of operation of the apparatus described in the sole embodiment and forming the subject of the apparatus claim 1. Thus, there can be no question that including features of that apparatus in the method would add new information.

3.3 In the light of the above the Board concludes that the objected amendment to granted claims 1 and 11 do not add subject-matter, Articles 100(c) and 123(2) EPC.

4. Sufficiency of disclosure - granted claims

4.1 The appellant challenged the division's finding that claims 1 and 11 are sufficiently disclosed, see written decision section 3.

4.1.1 According to the written submissions of the appellant, the patent only teaches a controller that calculates the time period for the object to reach the predetermined portion 82 (as is also defined in the claims), but not the time period to reach the region **adjacent to** the predetermined portion (as distinct from the "predetermined portion" proper), where it is required to reduce the oscillations.

As noted by the Board in its written communication, the skilled person should read a claim with synthetical propensity and a mind willing to understand, see CLBA, II.A.6.1. In the present case, both independent claims 1 and 11 require that the reduction of the oscillations takes place only when the rigid object is adjacent to the predetermined portion (features M and W). They further call for a controller configured to calculate the time for the rigid object to travel from the detecting sensors to the predetermined portion and to alter the operation of the drive for reducing the forces for a time period sufficient for movement of the object past the predetermined portion (features O and W). In the opinion of the Board, it is immediately evident to the skilled reader that both features (N or X and M or W) refer to the same starting point for reduction of the oscillations. Furthermore, specification paragraphs [0028]-[0031] provide sufficient guidance on how to calculate that time period in the claimed fruit harvester and method. Paragraph [0028] moreover offers the skilled person at least one way to identify the predetermined portion, as that of maximum flexure and exertion of force. In respect of the type of controller or for specific detail as to how to determine the period of time for the object to move past the predetermined portion based on the speed of the harvester, the skilled person can readily draw on common general knowledge.

- 4.1.2 The appellant further argued that the patent gives no explanation how to determine the "appropriate time" for passage of the object to and through the region, as used in paragraph [0029]. The Board notes in this regard, as also pointed out by the respondent, that the skilled person knows the speed and dimensions of the machine and the distance of the sensors to the

predetermined portion and will thus, drawing on common general knowledge, be able to determine the required time and duration.

4.2 The appellant also contests, in their written submissions, the finding of the Opposition Division that dependent method claim 12 was sufficiently disclosed, see impugned decision section 12. As also noted in the Board's written communication, the appellant acknowledges that at least one way of carrying out the invention according to claim 12 is clearly indicated in the description, see statement of grounds, page 16. An invention is in principle sufficiently disclosed if at least one way is clearly indicated enabling the person skilled in the art to carry out the invention, see CLBA II.C.4.2. The further objection that the claim lacks essential features, for example those of claim 13, and is thus broader than justified by the description, relates to clarity and support by the description, Article 84 EPC, which is not a ground for opposition against a granted claim.

4.3 The Board thus holds that the claimed invention is sufficiently disclosed for the purposes of Article 100(c) EPC.

5. Inventive step - granted claims

5.1 In their written submissions the appellant challenged the decision's finding of inventive step over a combination of D2 as closest prior art and prior use D1. At the oral proceedings they focused exclusively on a new attack starting from D2 as closest prior art, combined with the common general knowledge of the skilled person.

5.2 The appellant identifies the harvester and method described in D2 as a suitable starting point for the evaluation of inventive step for independent claims 1 and 11. They also acknowledge that D2 does not disclose the features of a controller configured to calculate the time period for the object to travel the distance from the sensor to the predetermined portion of the harvesting apparatus on the basis of the speed of movement of the frame and to alter the operation of the drive for reducing the forces for a time period sufficient for movement of the predetermined portion past the object.

5.3 As noted in the Board's communication in respect of the combination with prior use D1, the appellant fails to contest the finding of the Opposition Division, following its evaluation of the evidence, especially of the above declaration D1.6.2, that the alleged prior use was not proven "up to the hilt", see section 4.2.1 of the impugned decision. In particular, the Opposition Division did not consider it sufficiently proven that the prior use D1 disclosed the differentiating features of a controller configured to calculate the time period for the object to travel the distance from the sensor to the predetermined portion of the harvesting apparatus on the basis of the speed of movement of the frame and to alter the operation of the drive for reducing the forces for a time period sufficient for movement of the predetermined portion past the object. Absent any argument to the contrary, the Board does not see any compelling reason for finding differently. As the differentiating features are neither known from the closest prior art D2, nor taught or suggested by D1 their combination will not lead to the claimed subject-matter.

- 5.4 Without substantiating evidence the Board is equally unconvinced of the allegation that the skilled person would simply draw on common general knowledge to provide the above discussed features missing in D2. The Board does not consider it trivial per se, to alter the D2 arrangement so that it takes into account the distance from the sensor to the entry point in the predetermined portion or the time of passage therethrough. D2, see the abstract or claim 1, uses a rather different approach where a post sensor 12a, 12b arranged along the whole length of the shakers senses the passage of a post through the relevant shaker zone to directly control force reduction. No times are determined or calculated. Modifying this central aspect of D2's teaching to replace it with a computational scheme is deemed to go beyond the routine skills of the relevant skilled person, an engineer involved in the design and development of agricultural machines and in harvesting.
- 5.5 In the light of the above the Board confirms the finding of the Opposition Division that the subject-matter of granted claims 1 and 11 involves an inventive step in the sense of Article 56 EPC.
6. As the appellant's arguments against the findings of the decision of the Opposition Division fail to convince the Board, it confirms the impugned decision.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



G. Magouliotis

A. de Vries

Decision electronically authenticated