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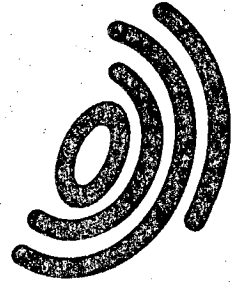
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Beschwerdekammern

Boards of Appeal

Chambres de recours

Case Number : T 235 /85 - 3.3.1



D E C I S I O N
of the Technical Board of Appeal 3.3.1
of 22 November 1988

Appellant : Ebara Corporation
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Representative : Wagner, Karl H.,
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Decision under appeal : Decision of Examining Division 026 of the European Patent Office of 11 December 1984, posted on 11 April 1985, refusing European patent application No. 80 102 914.1 pursuant to Article 97(1) EPC

Composition of the Board :

Chairman : K.J.A. Jahn
Members : R.W. Andrews
R. Schulte

Summary of Facts and Submissions

- I. European patent application No. 80 102 914.1, filed on 24 May 1980 and published on 7 January 1981 (publication No. 0 021 064) claiming priority of 26 May 1979 and 11 July 1979 from two prior applications in Japan, was refused by a decision of the Examining Division 026 of the European Patent Office of 11 December 1984, posted on 11 April 1985. The decision was based on Claims 1 to 7 filed on 24 April 1984. The only independent claim reads as follows:

"A method for composting organic materials in a generally rectangular heaping zone (X) where organic materials are arranged in a layer (19), said method comprising employing an agitator means (25) for scraping material from said layer (19) by means of rotatively driven scraper blades (30), and moving said agitator means (25) over said zone (X), whereby said materials are gradually displaced from one edge (7) of said rectangular heaping zone (X) to the opposite edge (3), said method being characterized in that said materials are piled and maintained in a layer (19) of substantially uniform thickness with a height (H) greater than the diameter of the blades of said agitator means (25), and said agitator means (25) throws the scraped materials in a flying fashion a sufficient distance for them to pass beyond said agitator means (25) to avoid packing the materials into a mass, while said agitator means (25) is moved in a direction parallel to the rotating axis of the blades of said agitator means (25) such that it is moved in a zigzag path (5,5') to cover all the heaping zone (X)."

- II. The stated ground for the refusal was that the claimed subject-matter did not involve an inventive step in the

light of the disclosure in GB-A-521 894 (1) and GB-A-496 637 (4). The Examining Division considered that it was known from document (1) to move the agitator means in a direction parallel to the rotating axis of its blades so that the agitator follows a zig-zag path to cover all the heaping zone. The feature that the scraped material is thrown in a flying fashion beyond the agitator means to avoid packing the material into a mass was regarded as being obvious in view of the combined teachings of documents (1) and (4). Finally the selection of the feature whereby the material is maintained in a layer of substantially uniform thickness with a height greater than the diameter of the blades of the said agitator means, which did not achieve any unexpected result with respect to the preferred embodiment of document (1), fell within the competence of a skilled person.

III. An appeal was lodged against this decision on 11 June 1985 with payment of the prescribed fee. A statement of grounds of appeal was filed on 21 August 1985. In this statement the Appellant contended that document (1) taught a quite different approach to composting material to that envisaged by the present method in that document (1) relates to a fermentation process carried out on a porous floor or bed wherein the fermenting material is drenched with liquid activated sludge or sewage effluent. Thus, in a preferred embodiment the composting material is piled in pyramid-shaped heaps or ridges and allowed to stand for two or three days. Afterwards the material is subjected to a "hay-making" type of mixing and the ridges or heaps are rebuilt and the cycle is repeated with the material being drenched with liquid activated sludge or sewage effluent from time to time. The composting material is moved either from end to end or side to side of the floor or bed. The machine described in document (4) may be used for this purpose. The Appellant has argued that this machine is incapable of

moving axially in a zig-zag fashion. Moreover, due to its slow speed of rotation it gently turns the material without throwing it beyond the agitator.

IV. With his reply to a communication from the Board of Appeal the Appellant submitted an amended statement of claim which is the basis for the Appellant's auxiliary request.

Claims 2, 3 and 5 to 7 of this set of claims are identical with the corresponding claims filed on 24 April 1984.

Claim 1 of this set of claims differs from that filed on 24 April 1984 in that it is specified that the height of the layer of materials is greater than the outer diameter (D) of the blades of the agitator means and that the agitator means is moved in a zig-zag path. In the amended Claim 4 the expressions "providing proper temperature, moisture, aeration and microorganism content for said layer of organic materials to compost said layer of organic materials" and "upwardly above said layer in a second direction opposite to said first direction" have been deleted.

V. The Appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of Claims 1 to 7 filed on 24 April 1984. Alternatively, as an auxiliary request, the Appellant requested that a patent be granted on the basis of Claims 1 to 7 filed on 9 September 1988. The Appellant also requested that the appeal fee be reimbursed.

Reasons for the Decision

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

2. Claim 4 in accordance with the main request does not comply with Article 123(2) EPC insofar as the reference to ensuring that the temperature, moisture, aeration and microorganism content of the layer of organic material is suitable for composting said material has no basis in the application as originally filed. Therefore, the statement of claim in accordance with the main request is formally unallowable.
 - 2.1 There are no formal objections to Claims 1 to 7 in accordance with the auxiliary request since they are adequately supported by the disclosure. These claims are supported by the original Claims 1 to 6, page 9, lines 10 to 14 and the sentence bridging pages 17 and 18. The feature that the material is piled and maintained in a layer of substantially uniform thickness is clearly disclosed in Figures 4, 5, 7, 8, 10, 13, 16, 18 and 18b. In particular Figures 4 and 5, which are cross-sectional view taken at right angles to each other, show that the layer is of substantial uniform thickness over all its area.
3. The application relates to a method for composting organic materials by aerobic fermentation comprising agitating the material and gradually displacing it from one edge to the opposite edge of a rectangular heaping zone. Document (1), which represents the closest prior art, discloses a process for composting organic material on a porous floor or bed whereby the fermenting material is drenched at intervals with activated sludge or sewage effluent (cf. Claim 1). When the composting material is built into pyramid-shaped heaps or ridges, each row of heaps or each ridge is moved progressively between periods of rest from a receiving station for the raw material at one side of the floor or bed to a discharge station for the compost at the opposite side of the floor or bed (cf. Claims 7 and 8).

It is considered that in order to compost organic material by aerobic fermentation it is necessary to establish and maintain both good contact between the compositing material and air-bacteria and also an appropriate temperature. The above-mentioned prior art process was thought to be unsatisfactory insofar as there was a tendency for the material to pack into a mass due to the intermittent drenching with activated sludge or sewage effluent. Moreover, the building of the compositing material into pyramid-shaped heaps or ridges to try and avoid the undue packing of the material resulted not only in excessive heat loss but also in the inefficient use of the available floor space.

In the light of this closest prior art the technical problem underlying the application may be seen in optimising the conditions for the continuous composting of organic material by aerobic fermentation.

According to the application this problem is essentially solved by depositing the raw material in a layer of substantially uniform thickness over a rectangular area. The material is gradually displaced from one edge of the rectangular area to the other by means of an agitator whose rotating blades, the outer diameter of which is smaller than the height of the layer of materials, scrape the material from said layer and throws it in a flying fashion beyond the said agitator. The agitator is moved in a direction parallel to the rotational axis of its blades and in a zig-zag path to cover the whole of the rectangular area.

In view of the fact that with the present method the disadvantages of the prior art process are overcome, the Board is satisfied that the above-defined technical problem is credibly solved.

4. After examination of the cited prior art the Board has reached the conclusion that this technical teaching is not disclosed and that the claimed subject-matter is, therefore, novel. Since novelty is not disputed it is not necessary to consider this matter in detail.

5. It still remains to be examined whether the requirement of inventive step is met by the subject-matter claimed in accordance with the auxiliary request.
 - 5.1 As previously mentioned document (1) discloses a process for composting organic material on a porous floor or bed by drenching the fermenting material with activated sludge or sewage effluent (cf. Claim 1). In order to increase the contact of the material with the atmosphere, the material, after being deposited as a layer on the floor or bed, is built into ridges and/or pyramid-shaped heaps by means of an elevator or a machine such as the one described in document (4) (cf. page 8, lines 35 to 48 in combination with page 7, lines 95 to 98). Therefore, this document gives a clear indication that, if the material is spread out in a substantially uniform layer, the contact with the atmosphere is not sufficient to ensure fermentation of the material.

 - 5.2 During this prior art process the material is gradually moved across the floor from the receiving end to the discharge station (cf. page 7, lines 99 to 106). Two methods are disclosed for moving the material, a "side tipping" method and an "end tipping" method (cf. page 9, lines 16 to 65). The first of these methods involves lifting a section of the last ridge on the floor by means of an elevator or the above-mentioned machine into a truck and, when this ridge has been completely removed, the succeeding ridge is moved by the same machine and deposited

on the space provided by the removal of the first ridge. The operation is continued until a space is provided at the receiving end of the floor for raw material from which a new ridge can be formed (cf. page 8, lines 37 to 52). Thus, in this process the machine described in document (4) is being used as a shovel as illustrated in Figure 8 of this document (cf. also page 4, lines 53 to 79).

- 5.3 In the second method the said machine or elevator moves along the length of the bed gradually turning the material over and feeding it forwards so as to leave a space for more raw material at the receiving end and discharging finished compost at the discharge end (cf. page 4, lines 53 to 60). In this method the machine is being used as illustrated in Figure 10 of document (4), i.e. the blades of the machine are being rotated continuously so that the material is lifted and tossed back onto the top of the bed (cf. page 4, lines 87 to 94). However, in contrast to the present agitator which must be rotated at such a speed that the scraped material is thrown in a flying fashion beyond the said agitator, the blades of the machine described in document (4) are rotated slowly, for example, from 3 to 30 revolution per minute (cf. page 2, lines 26 to 30), so that violent agitation of the material is avoided (cf. page 3, lines 23 to 27, page 4, lines 112 to 116, and page 5, lines 49 to 61).
- 5.4 It is also taught in document (1) that, two to three days after the ridges or pyramid-shaped heaps have been formed, they may be levelled by the above-mentioned machine and the material given another "hay-making" mixing. In this manner the material will be rolled a little nearer the discharge end of the floor at each double travel of the machine across it (cf. page 10, lines 26 to 36). As a gap is made at the receiving end of the floor a new charge of raw material may be deposited and formed into ridges and

furrows and rested for two to three days (cf. page 10, lines 36 to 45). The term "hay making" in its present context is to be understood as meaning that the material is gently agitated to loosen the material and allow the penetration of air (cf. document (4), page 5, lines 54 to 61).

Thus, from the teaching of documents (1) and (4) the skilled person would conclude that to compost organic material it should be formed into ridges or pyramid-shaped heaps to increase the contact of the material with the atmosphere and that during the process it should be gently agitated by being picked up and dropped. This gentle agitation may be achieved by means of an elevator or by the slowly rotating blades of a machine, the carriage of which moves in a direction perpendicular to the rotational axis of the blades.

However, in the light of this teaching the skilled person would not be able to deduce that the solution to the technical problem of optimising the conditions for the continuous compositing of organic material by aerobic fermentation lay in maintaining the composting material in a layer of substantially uniform thickness and violently agitating the material with the rotating blades of an agitator in such a manner that it is thrown in a flying fashion so that it lands beyond the blades of said agitator while the carriage of the agitator travels in a direction parallel to the rotational axis of its blades.

- 5.5 Therefore, in the Board's judgement the subject-matter of Claim 1 in accordance with the auxiliary request involves an inventive step. Dependent Claims 2 to 7, which relate to preferred embodiments of the method according to Claim 1, derive their patentability from this claim.

6. In accordance with Rule 67 EPC, reimbursement of an appeal fee shall be ordered when a Board deems an appeal to be allowable if such reimbursement is equitable by reasons of a substantial procedural violation. The Appellant considers his request for reimbursement of the appeal fee to be justified since the refusal of the examiner to grant the Appellant's representative an interview led to a protraction of the examination procedure.

However, there is no obligation upon the Examiner to grant a request for an interview when, as set out in the "Guidelines for Examination in the European Patent Office" at Chapter VI, paragraph 6.1, the Examiner believes that no useful purpose would be served by such a discussion. Moreover, in the present case the Appellant had ample opportunity to put forward all his arguments at the oral proceedings held at his own request on 11 December 1984. Therefore, in the Board's judgement there is no basis for ordering reimbursement of the appeal fee in accordance with Rule 67 EPC.

Order

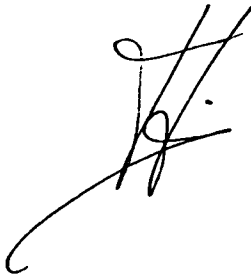
For these reasons, it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the Examining Division with the order to grant a patent on the basis of Claims 1, 2 and the first three lines of Claim 3 filed on 9 September 1988, Claims 4 to 7 and the last nine lines of Claim 3 filed on 28 October 1988, pages 9, 14 and 15 as originally filed,

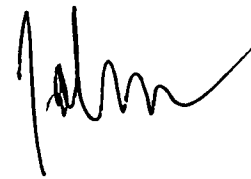
pages 1, 3, 3a, 4 to 6, 10, 11, 18, 20 and 21 filed on 24 April 1984, pages 2, 7, 8, 12, 13, 16, 17 and 19 and sheets 1/9 to 9/9 of the drawings filed on 28 October 1983. Clerical amendments having been made to pages 8 and 17 and Figures 4 and 10.

3. The request for the reimbursement of the appeal fee is refused.

The Registrar



The Chairman



*Summ 15.11.
RWA*