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D E C I S I O N
of 27 June 2000

Case Number: T 1089/97 - 3.2.3

Application Number: 86108895.3

Publication Number: 0218012

IPC: B02B 3/04

Language of the proceedings: EN

Title of invention:

Wheat flouring pretreatment system and wheat flouring process
and system therefor

Patentee:

SATAKE ENGINEERING CO, LTD.

Opponent:

Bühler AG

Headword:

-

Relevant legal provisions:

EPC Art. 54, 56, 100a

Keyword:

"Novelty (yes)"

"Inventive step - (yes) after amendment"

Decisions cited:

-

Catchword:

-



Case Number: T 1089/97 - 3.2.3

D E C I S I O N
of the Technical Board of Appeal 3.2.3
of 27 June 2000

Appellant: SATAKE ENGINEERING CO, LTD.
(Proprietor of the patent) 19-10, Ueno 1-chome
Taito-ku
Tokyo 110 (JP)

Representative: Grünecker, Kinkeldey,
Stockmair & Schwanhäusser
Anwaltssozietät
Maximilianstrasse 58
D-80538 München (DE)

Respondent: Bühler AG
(Opponent) CH-9240 Uzwil/Schweiz (CH)

Representative: -

Decision under appeal: Decision of the Opposition Division of the
European Patent Office dated 13 August 1997
revoking European patent No. 0 218 012 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: C. T. Wilson
Members: F. Brösamle
J. P. Seitz

Summary of Facts and Submissions

- I. With decision of 13 August 1997 the opposition division revoked European patent No. 0 218 012 in the light of
- (D2) DE-C-2 031 020 and
- (D6) CH-A-640 750
- on the grounds of Articles 54, 56 and 100(a) EPC.
- II. Against the above decision of the opposition division the patentee - appellant in the following - lodged an appeal on 17 October 1997 paying the appeal fee on the same day and filing the statement of grounds of appeal on 22 December 1997 together with revised claims 1 and 9.
- III. Following the board's Communication pursuant to Article 11(2) RPBA dated 21 September 1999 oral proceedings before the board were held on 27 June 2000 in which the appellant filed new claims 1 and 9 as his **main request**. A **first auxiliary** request with claims 1 and 9 was filed on 24 May 2000 in reply to the above communication of the board.
- IV. Claims 1 and 9 of the **main request** read as follows:
- "1. Process of flouring wheat, comprising:
- passing wheat grains through a plurality of polishing zones sufficient for recovering from the last of said plurality of zones polished individual grains which are substantially free of their pericarp and which have their endosperm part

exposed,
manipulating the grains in each zone to cause the individual grains to be brought into frictional contact with each other for progressively stripping the pericarp from the individual grains in the successive zones and for polishing the individual grains, while supplying moisture to the individual grains **flowing through and being in friction contact with each other** in at least one of the zones to increase a frictional contact force between the grains and to moisturise and soften the entire pericarp of each grain for facilitating the stripping of the pericarp from each grain and the exposure of an endosperm part of each grain,
removing the stripped pericarps from each respective zone in which they are stripped from the grains, while passing the grains from the same respective zone to a subsequent zone of the series for continuing the stripping of the pericarps from the individual grains and the polishing of such grains until the pericarps have been substantially completely removed from each of the individual grains and each of the grains has the endosperm part exposed in the last zone, recovering from the last zone the grains which have their endosperm parts exposed and milling such recovered grains to form a powder material substantially completely free of pericarp material, and

screening the powder material to provide a flour having a desired mesh size."

- "9. A system for flouring wheat, in particular carrying out the process according to claim 1,

comprising:

a plurality of friction-type wheat polishing machines (10) disposed in series relation to form a continuous wheat polishing process line, each of said polishing machines (10) comprising in a frame (11), perforated tubular polishing member (20) mounted on said frame (11), a frictionally polishing roll (17) rotatably mounted on said frame (11) so as to have an axis substantially coincident with an axis of said perforated tubular polishing member (20), said polishing roll (17) cooperating with said perforated tubular polishing member (20) to define therebetween a polishing chamber (21), means (2; 3; 4; 5; 33; 29;) for feeding the wheat to be polished into said polishing chamber (21), means (43, 44, 45) for rotating said frictionally polishing roll (17) relative to said perforated tubular polishing member (20), the rotation of said frictionally polishing roll (17) relative to said perforated tubular polishing member (20) causing the wheat grains fed into said polishing chamber (21) to be agitated whereby the wheat grains are brought into frictional contact with each other, to thereby strip a pericarp from each wheat grain to polish the same, and the polished wheat grains being dischargeable out of said polishing chamber (21) and the stripped pericarps being dischargeable out of said polishing chamber (21) through the apertures in said perforated tubular polishing member (20), the wheat grains discharged out of the polishing chamber (21) of one of the plurality of friction-type wheat polishing machines (10) disposed in the series relation being introduced

into the polishing chamber (21) of a friction-type (10) wheat polishing machine (10) disposed subsequent to said one friction-type wheat polishing machine in the series relation; moisture supplying means (100) communicating with the polishing chamber (21) of the friction-type wheat polishing machine (10) for supplying moisture into the polishing chamber (21) **along a longitudinal direction thereof** to add the moisture to the individual wheat grains flowing **through and being in friction contact with each other** within the polishing chamber (21) to increase a frictional contact of the wheat grains with each other by the frictionally polishing roll (17) of said at least one friction type wheat polishing machine (10) to moisturise and soften the entire pericarp of each wheat grain, to facilitate the stripping of the pericarp from each wheat grain and the exposure of an endosperm part of each wheat grain; a milling system comprising at least one milling machine (810; 860; 890) for milling the wheat grains, each having the endosperm part exposed to form a powder material, and

at least one screening machine (830; 870; 900) for screening the powder material to provide a flour having a desired particle size."

V. The appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of its **main request** filed during the oral proceedings or **auxiliarily** on the basis of the independent claims 1 and 9 filed on 24 May 2000.

VI. The opponent - respondent in the following - requested

that the appeal be dismissed.

VII. With respect to the **main request** the parties essentially argued as follows:

(a) appellant

- the most relevant document (D6) is based on an **abrasive** method, namely by using peeling elements to break the pericarps and to remove them from the endosperm of the wheat grains, contrary to the gist of claims 1 and 9 which claims are based on a **friction** action between stirred grains in combination with the application of moisture to the grains to remove the pericarps from the grains;
- whereas moisture is applied according to claims 1 and 9 to the individual grains flowing through and being in friction contact with each other (D6) is based on applying moisture at an early stage, namely at the inlet "19" of the peeling station, so that moisture is not exclusively applied on **stirred** grains;
- in (D6) the pericarps are first of all peeled off before a friction contact of the peeled grains is possible; the high degree of rotation of the peeling rotor, namely in the order of 800 to 2000 rpm, is typical for an abrasive grinder with peeling elements;
- a second significant difference between the claimed subject-matter and (D6) is the application of moisture which in contrast to (D6) is

permanently applied to the grains so that any peeled grain is again and again humidified in order to enhance the peeling action under the action of friction between wheat grains;

- the teachings of claims 1 and 9 are novel and inventive since

(D1) DE-C-2 706 837

would not be considered by a skilled person not knowing the claimed invention;

- even if peeling knives/elements in (D6) were replaced by knobs ("Noppen") the same effect would be achieved i.e. the pericarps are peeled off not by friction between the grains, but rather by the "hammer-action" of peeling elements;
- (D1) relates to polishing of rice in order to achieve a specific gloss of its grains but not to peeling off the pericarps of the grains of rice;
- not knowing the claimed invention a skilled person would not consider (D1) in combination with (D6) since the background of (D1) and (D6) is too different to envisage their combination; whereas claims 1 and 9 relate to the production of flour, (D1) is based on polishing, and not on removing pericarps from the grains of rice;
- summarizing, the patent should be maintained in amended form according to the independent claims 1 and 9 of the **main request**.

(b) respondent

- it has to be admitted that the peeling effect of (D6) is on the one hand caused by the peeling elements/knives and on the other hand is caused by the friction between the wheat grains;
- from (D6) it is moreover known to apply moisture to the grains to facilitate the peeling effect; under the action of a screw conveyor of (D6) a certain "packing together" effect is achieved which causes initial rubbing of the grains to peel off the pericarps from the grains since the grains underlie the influence of moisture which allows the ready separation of the pericarps from the grains;
- since (D6) teaches the application of moisture of different places in the apparatus the stirred grains are steadily humidified to enhance the softening of the pericarps and the peeling action thereof;
- in (D1) the grains are steadily humidified through a hollow shaft equipped with radial holes so that a skilled person could and would combine (D6) and (D1); the high rotational speed of the rotor of (D6) is no obstacle for such a combination since a skilled person is aware that thereby only the throughput of the machine is enhanced without negatively influencing the peeling effect of the wheat grains;
- summarizing, the request for maintaining the patent on the basis of the **main request** should be

rejected.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. *Amendments*

- 2.1 Claim 1 is based on all features of granted claim 1; from EP-B1-0 218 012, see column 9, lines 47 to 49 and 50/51, the additional feature of claim 1 "flowing through and being in friction contact with each other" can be seen.
- 2.2 Claim 9 is based on all features of granted claim 9, whereby EP-B1-0 218 012 discloses in column 6, lines 11 to 13 "a longitudinal direction" for supplying moisture into the polishing chamber (21) and discloses in column 9, lines 50/51, grains flowing "through and being in friction contact with each other" of claim 9.
- 2.3 Claims 1 and 9 are therefore not open to an objection under Article 123(2) and (3) EPC since the claimed features are originally disclosed and the scope of protection is not broadened by the above additional features of claims 1 and 9.

3. *Novelty*

Claims 1 and 9 being closely related they can be dealt with simultaneously with respect to their patentability.

- 3.1 In agreement with appellant's chain of arguments (D6) is seen as a piece of prior art which is based on a **different principle** with respect to the peeling effect of claims 1 and 9 for the following reasons.
- 3.2 Not knowing the claimed invention a skilled person derives from (D6) that peeling elements such as knives or knobs primarily peel off the pericarps of the wheat grains, see page 4 left-hand column, lines 42/43, and right-hand column, lines 19 to 21 and lines 43 to 45. The combination of sharp edges provided on the peeling knives/knobs and their high rotational speed from 800 to 2000 rpm lead to loosening of the pericarps and their peeling off the wheat grains **whereby thereafter** the grains come into mutual contact and friction **completes** the peeling of the grains.
- 3.3 In addition the application of moisture as claimed is different from that known in (D6), in that in (D6) moisture is not clearly applied to "grains flowing through and being in contact with each other". Rather, it is fed together with the grains by an inlet "19" so that the above conditions of claims 1 and 9 are not necessarily and unambiguously fulfilled, namely that movement of the grains through a zone is accompanied by the application of moisture, see for instance claim 9 and its feature "for supplying moisture into the polishing chamber (21) along a longitudinal direction thereof" and see granted Figure 4, reference signs "17" and "16a, 16b". By this way of moisture application according to claims 1 and 9 a soft peeling effect is achieved in which moisture can be applied as the pericarps are progressively removed, in contrast to the abrupt and forced peeling effect underlying the installation according to (D6), see in particular the

high rotational speed of its rotor.

3.4 (D1), in which the grains are steadily humidified through a hollow shaft equipped with radial holes, as in the present patent relates however to the polishing of rice to achieve a specific gloss of its grains, rather than to peeling off the pericarps of grains of wheat as in the present invention.

3.5 Summarizing, the subject-matter of claims 1 and 9 is novel, Articles 54 and 100(a) EPC.

4. *Inventive step*

4.1 The subject-matter of claims 1 and 9 is also non-obvious with respect to (D6) and (D1) whether considered singly or in combination.

4.2 As outlined above (D6) is different in the way in which the grains are peeled and in which moisture is applied to the grains so that a skilled person - not knowing the claimed invention - would not be led to the claimed invention.

4.3 Deriving from (D6) and its page 4, right-hand column, lines 43 to 46, a peeling effect as claimed, namely **exclusively** by the friction effect between wheat grains is clearly the result of inadmissible hindsight since the high rotational speed of the rotor is a clear proof that peeling in (D6) is **primarily based** on "hammering", on the wheat grains i.e. by driven mechanical elements such as knives or knobs.

4.4 With respect to (D1) it has to be observed that the product "rice" would not directly be an obstacle for a

skilled person to consider (D1). What counts are, however, the problems dealt with in the attacked patent and in (D1).

(D1) is not dealing with **peeling** rather with **polishing in a sense of achieving gloss**.

- 4.5 Achieving gloss of the grains treated is, however, not the problem to be solved underlying the present invention which deals with the problem how wheat grains can be peeled in that the pericarps are softly removed from the wheat grains to allow milling of the remaining endosperm of the grains. Bearing in mind these differences between (D1) and the claimed invention a skilled person would not consider (D1) when confronted with the problem of how peeling of wheat grains can be carried out to create favourable conditions to mill the peeled grains of wheat.

Since (D2) has not played a role in the oral proceedings before the board, and since the board is also convinced that it is not relevant for the present decision, it refrains from dealing with it.

- 4.6 Summarizing, the subject-matter of claims 1 and 9 is based on an inventive step within the meaning of Articles 56 and 100(a) EPC so that these independent claims are valid and can form the basis for maintaining European patent No. 0 218 012 in amended form.

Auxiliary request

5. As set out above the independent claims of the **main request** define novel and inventive subject-matter so that under these circumstances it is not necessary to

deal with the **auxiliary request** filed on 24 May 2000.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent as amended in the following version:
 - claims 1 and 9 filed during the oral proceedings;
 - claims 2 and 8 and 10 to 19 as granted;
 - description and drawings as granted.

The Registrar:

The Chairman:

A. Counillon

C. T. Wilson