DIRECTORATE OF DISTANCE EDUCATION
NALSAR UNIVERSITY OF LAW, HYDERABAD

Post-Graduate Diploma in Patents Law (Batch 2019 – 2020)

Take Home – Supplementary Examination (January, 2021)

Paper IV – Practical
Abuse / Infringement of Patents

TOTAL MARKS: 100

INSTRUCTIONS TO CANDIDATES

a) ***Read the instructions for Take Home Examination carefully and adhere to the same.***
b) ***Please mention your name, ID No., subject name and total number of pages on the Answer Sheet.***
c) ***Clearly indicate the question numbers while answering them.***
d) ***The question paper to be interpreted as given and no additional clarification can be sought.***
e) ***You should accept the facts given in the papers and not use any special knowledge you may have.***
f) ***Assume also that the prior art given is exhaustive.***
g) ***Marks are awarded more for the points selected for discussion and reasoning displayed than for conclusions reached.***
h) ***Since this is a take home exam, we expect your answers to be analytical rather than straight answers.***
i) ***Copying from any source including from other students is strictly prohibited. Plagiarism is considered as a serious academic mis-conduct and the University will take action as it deems fit.***

You are an Indian registered patent agent. You received a letter on from one Mr. M Sharma as follows:

Please respond to Mr. Sharma, advising him and explaining in detail addressing all the concerns raised by him highlighting on:

1) ***claim construction,***
2) ***infringement,***
3) ***patent validity / revocation possibilities,***
4) ***other miscellaneous issues and***
5) ***your advices.***

(20 + 20 + 30 +20 + 10 Marks).

Letter from your Client

Dear Patent Agent,

Our technical director Dr. Bhatt has been experimenting with materials that are available in India, and we are proud to say that we have now created a new type of bread.

We have included a write-up of our own method of making bread as **Annex 1**.

We are now wondering whether we are in a position to produce and to sell this newly developed type of bread within India. We have done a patent search for Indian patents and patent applications and we have found a possibly relevant patent publication IN 134 004, this is shown as **Annex 2**. For the purpose of your evaluation please assume that IN 134 004 is presently all in force.

We are pretty sure that our own method of making bread differs from this patent, but we would be grateful if you could let us know your opinion on this. What strikes us is that it claims the use of pineapple juice as a naturally sour liquid for preparing the sourbread starter. We are using sour cow milk for achieving the same technical objective, namely, to improve the growth of the sourdough starter. Sour cow milk is an emulsion or colloid of butterfat globules, water and natural acids. We strongly believe in the idea of using natural ingredients and no artificial or synthetic ingredients for our own bread.

Note that water with a pH-value of exactly 7, e.g. distilled water, is *"neutral"* while water with a pH-value of above 7 is perceived as "alkaline" and *"acidic"* water has a pH-value of less than 7 and it tastes *"sour"*.

In any case, we also identified some documents that seem to be prior art against this patent IN 134 004. These are documents shown in **Annex 3** and **Annex 4**, which are both recipes taken from publicly available cookbooks.

1) Kindly advise whether we can produce and sell our new bread in India, having knowledge of the above-mentioned patent and let us know if we need to take any steps based on your conclusions.
2) We inspected the file for patent IN 134 004 and note that the request for grant of this patent was based on a corresponding US patent, which has the same priority claim as patent IN 134 004. We have done a file inspection of the US patent and note that no prior art was cited by the US Examiner during prosecution before the USPTO. However, the US Examiner raised a clarity issue and the applicant had to amend the US claim 1. The claim 1 in the granted and later published US patent differs from the corresponding claim 1 on file in India.

That is, the relevant claim element in claim 1 reads as follows in the Indian patent:

> *"the steps being performed at temperatures of between about 18°C and about 20°C, preferably at about 19°C"*.

The corresponding claim element of claim 1 in the published US patent reads different, namely as follows:

> *"the steps being performed at a temperature of between 18°C and 20°C."*

We are not sure if this is important and look forward to your advice.

Please do not recommend new patent searches or providing further documents. Please also do not comment on the patentability of our own method of making bread: *we will look into this separately.*

If you find that the patent IN 134 004 may be a problem for us, what would you recommend in order to improve our position, taking into account that we shall produce and sell our new bread starting from November 01 in India?

Yours faithfully,
M Sharma
Director - MS India Bread Private Limited
Hyderabad, INDIA

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Annex 1

Our own recipe for sourdough bread.

We are preparing a sourdough starter in the conventional way, except that we are using sour cow milk instead of water. The starter is prepared by adding and mixing essentially the same volumes of bread flour and sour cow milk to the starter, with a waiting time of about a day between consecutive steps, being performed at temperatures of between about 18°C and about 20.5°C, preferably at about 19°C.

A sourdough bread dough is prepared by mixing about 3.5 volumes of bread flour, about 1.5 volumes of gas-free mineral water with no specific taste, and about 0.25 volumes of such a sourdough starter, fermenting the mixture for about 18 hours at temperatures of exactly 21.9°C.

A fermentation step is followed by a proving step which is done at a temperature of about 27°C.
Baking is done in a conventional way by baking the bread dough for about 60 minutes at temperatures between about 200°C and 250°C.

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Annex 2

IN 134 004 (Sourdough Starter)
Filing date: April 01, 2008
Publication date: August 01, 2009
Grant date: August 01, 2010
Patentee: Breads & More Private Limited.

In a first embodiment, this application provides a sourdough starter by adding absolutely neutral, chlorine-free water.

A method for preparing a sourdough starter comprises repeated steps of adding and mixing essentially the same volumes of wheat flour and absolutely neutral water with a measured pH-value of 7.0 to the starter, with a waiting time of about a day between consecutive mixing steps.

In one embodiment, the steps of mixing the starter are to be performed at temperatures of between about 18°C and about 20°C, preferably at about 19°C. It has turned out that it is not necessary to provide sour water in order to avoid foul smells in the starter as long as there is neutral water added. Using chlorine-free water helps to promote the yeasts and bacteria in the starter.

In a second embodiment, freshly pressed pineapple juice with a sour taste is added instead of the neutral water when making the sourdough starter. We have found that there are much better results when using naturally sour liquids for preparing the sourdough starter, instead of synthetic acidic additives such as citric acid. The mixing steps for providing the sourdough starter are preferably performed at temperatures of between about 21°C and about 26°C, preferably at about 24°C, although slightly lower temperatures can also be used to achieve the same effect. This starter, when used for preparing conventional sourdough bread, results in a very light bread with an excellent, slightly sour taste.

In both embodiments, a bread dough is prepared by mixing about 3.5 volumes of wheat bread flour, about 1.5 volumes of neutral and chlorine-free water and about 0.25 volumes of such a sourdough starter, fermenting the mixture for about 18 hours at temperatures of between about 22°C and about 26°C, preferably at about 24°C.

The fermentation step is followed by proving during which the dough is allowed to rise for 1½ to 2 hours at temperatures of between about 22°C and about 26°C, preferably at about 24°C.

IN 134 004 Patent Claims

1. Method for preparing a sourdough starter, comprising repeated steps of adding and mixing essentially the same volumes of bread flour and neutral, chlorine-free water to the starter, with a waiting time of about a day between consecutive mixing steps, the steps being performed at temperatures of between about 18°C and about 20°C, preferably at about 19°C.
2. Method for preparing a sourdough starter, comprising repeated steps of adding and mixing essentially the same volumes of bread flour and naturally sour liquid to the starter, with a waiting time of about a day between consecutive mixing steps, the steps being performed at temperatures of between about 21°C and about 26°C, preferably at about 24°C.
3. Method for preparing a sourdough starter, according to claim 2, in which the naturally sour liquid is pineapple juice.
4. Method for preparing a bread dough, comprising the steps of mixing about 3.5 volumes of bread flour, about 1.5 volumes of neutral water and about 0.25 volumes of a sourdough starter according to claim 1, 2 or 3, and fermenting the mixture for about 18 hours at temperatures of between about 22°C and about 26°C, preferably at about 24°C.
5. Method for preparing a bread, comprising the step of providing a bread dough according to claim 4 and baking the bread dough for 45 minutes at temperatures between about 200°C and 250°C.

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Annex 3

(Text extracted from *"The Commercial Bread Baking Hand Book"*, published in 2006)

Improved Sourdough Bread

The recipe provides a sourdough bread with an improved crust and taste.

In any sourdough starter, there is an existing symbiotic culture between yeast and a bacterium called *Lactobacillus sanfranciscensis*, which itself produces an acidic environment. Both the *Lactobacillus sanfranciscensis* and the yeast are part of the natural environment and they do not need to be added in order to obtain a sourdough starter.

A conventional method for preparing a sourdough starter comprises repeated steps of adding and mixing essentially the same volumes of flour and sour water to the starter, with a waiting time of about a day between consecutive mixing steps.

It has been found out that the temperature under which these and the other steps of making a bread dough are performed do play an important role. Much better results with respect to the crust and the taste of the sourdough bread can be obtained by keeping the temperature under which the respective steps are performed at pre-determined temperatures.

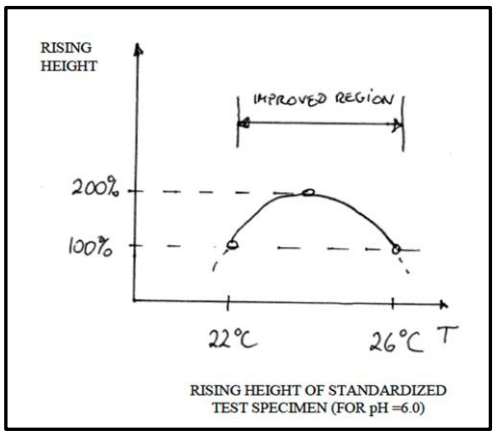

Fig. 1 shows the rising height of an embodiment of a sourdough with respect to the environmental temperature.

The recipe provides preparing a sourdough starter in the conventional way, the pH-value of the sour water being kept between 5.5 and 6.5 (i.e., at an acidic pH) by adding synthetic citric acid, and the temperature of the mixture being kept between about 22°C and about 26°C, preferably at about 24°C.

A bread dough is prepared by mixing about 3.5 volumes of bread flour, about 1.5 volumes of neutral water and about 0.25 volumes of such a sourdough starter, fermenting the mixture for about 18 hours at temperatures of between about 22°C and about 26°C, preferably at about 24°C.Fermentation is followed by proving, in which the dough is allowed to rise for 1½ to 2 hours at temperatures of between about 22°C and about 26°C, preferably at about 24°C.

As one can see in Fig. 1, there is a good rising height of about 200% for a temperature of 24°C. Acceptable results are obtained in a region of about +/- 2°C around the temperature value of 24°C. The same temperature effects are also obtained during the other steps of the recipe, i.e. when preparing the sourdough starter and during fermentation of the bread dough.

Such bread dough can be sold in a frozen state. It is intended for baking at a later time in small ovens that are provided at bakeries. The frozen dough is put into the pre-heated oven in a frozen state and baked for about 60 minutes at temperatures between about 200°C and 250°C.

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Annex 4

(Text extracted from *"The Bread Compendium"*, published in 2003)

Sourdough Bread

The following recipes provide sourdough bread with a distinctive flavor due to the fermentation of the dough by natural yeasts and bacteria in the leavening.

The gas-producing organism in ordinary baker's yeast is *Saccharomyces cerevisiae*. The reason why many recipes for bread require sugar is because baker's yeast ferments mainly simple sugars.

By contrast, sourdough starters, also called natural leaven, levain, or pre-ferments, consist of yeasts such as *Candida milleri* or *Saccharomyces exiguous*, together with the bacterium *Lactobacillus sanfranciscensis*. These yeasts don't need sugar because they use the complex carbohydrates in the flour to produce gas.

One known way of providing a sourdough starter comprises mixing equal parts of flour and water, throwing away half of the mixture, and adding more flour and water. The process is repeated for many days until a stable colony of gas-producing organisms can be obtained.

In a first aspect, the present recipe provides a method for preparing a sourdough starter, comprising repeated steps of adding and mixing essentially the same volumes of bread flour and water to the starter, with a waiting time of about a day between consecutive mixing steps. The water has a pH-value of between 5.50 and 6.95, if measured with a good 3-digit pH-meter.

In a second aspect there is provided a method for preparing a bread dough, comprising the steps of mixing about 3.5 volumes of bread flour, about 1.5 volumes of neutral water and about 0.25 volumes of a sourdough starter as described herein, and fermenting the mixture for about 18 hours.

In a third aspect there is provided a method for preparing a bread, comprising the step of providing a bread dough as described herein, and baking the bread dough for 45 minutes at temperatures between about 200°C and 250°C.

An improved method for creating a sourdough starter according to the application comprises systematically testing the environment needed to promote the growth of desirable microorganisms. The application thereby prevents the sourdough starter from becoming contaminated with undesirable foul-smelling organisms such as the *Leuconostoc* species, which are associated with spoilage of fruits, vegetables, and grains.

The present recipe teaches a method to promote an existing symbiotic culture between the yeasts and *Lactobacillus sanfranciscensis* by providing a sour environment. Therefore, the recipe provides a method to add water, which can be sour.

The required degree of acidification of the starter according to the application is not critical, as long as the starter tastes *"sour"* or *"acidic"*. If sour liquid is added, the type of liquid that is being added is not critical, provided that the desired souring effect is achieved.

A method to produce the sourdough starter provides the following steps:

Day 1: Mix 2 quantities of whole grain flour and 2 quantities of water.
Day 2: Add 2 quantities of whole grain flour and 2 quantities of water.
Day 3: Add 2 quantities of whole grain flour and 2 quantities of water.
Day 4: Stir down the starter until it reaches a determined end volume, add about the same volume of bread flour and about half of the same volume of water.

The above mixing steps are performed under room temperature of about 14°C to about 21°C, all ingredients having a similar temperature in the same range. The pH-value of the added water can be measured, and a good result is achieved if the pH-value is between 5.50 and 6.95, at least just a bit below 7.00, if measured with a good 3-digit pH-meter.

Preparation of dough

- 1 volume of whole wheat bread flour
- 2½ volumes of white bread flour
- Some salt
- 1½ volumes of neutral spring water
- ¼ volumes of sourdough starter as described above.

Mix the dry ingredients in a large bowl. Dissolve the starter in water which has a temperature of about 14°C to about 21°C. Every household has chlorinated water from the tap. Non-chlorinated gas-free water is readily often available in the form of still mineral water. It is important to use non-chlorinated water because chlorine will kill the gas-generating yeast and bacteria in the dough. Pour the water on the flour mixture while stirring. Adjust the moisture of the dough by adding additional flour to obtain dough that has a moist and firm consistency.

Fermentation

The next step is known as "Fermentation": Leave the covered bowl at room temperature of about 14°C to about 21°C for approximately 18 hours. During this time the dough will approximately double in size.

Proving

The next step is called "Proving": proving is the final rise before baking. During this stage, the dough is allowed to rise for 1½ to 2 hours at room temperature of about 14°C to less than 21°C. Use a towel to line a large bowl. Sprinkle wheat bran or oat bran on the towel to keep the dough from adhering to the towel and transfer the dough to the lined large bowl. Cover the bowl with another towel.

Baking

The final step is called "Baking": Thirty minutes before you plan to bake the bread, preheat the oven to 250°C. When ready to bake the bread, work quickly. Open the oven, sprinkle some bran in the bottom of the heated oven to keep the bread from burning and sticking. Transfer the dough to the oven. Bake the covered dough for 30 minutes at 225°C and for another 15 minutes at to 200°C until the crust is golden brown. Be careful not to get burned by the steam as you open the Dutch oven. Transfer the loaf to a wire rack to cool for at least one hour.