

986,119



# PATENT SPECIFICATION

NO DRAWINGS

986,119

Date of Application and filing Complete Specification  
June 30, 1961.

No. 23806/61.

Application made in Japan (No. 7042) on March 6, 1961.

Complete Specification Published March 17, 1965.

© Crown Copyright, 1965.

Index at Acceptance: Class A2, B(6C:6D:6F).  
Int. Cl. A 23 I.

## Improvements in or relating to condiment preparations.

### COMPLETE SPECIFICATION

I, MINEJIRO YAMAZAKI, a Japanese Citizen, of No. 48 Sekiguchidai-machi, Bunkyo-ku, Tokyo, Japan, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:

This invention relates to a method of preparing condiments.

10 Powdered spices, such as curry powder, ground pepper, cayenne pepper, garlic powder, mustard powder and the like contain, as the aroma-producing ingredient, essential oils, such as, for example, chavicine, 15 capaicin, aricine and sinigrin. When the raw spices are ground, the product frequently suffers loss of the essential oils through evaporation and loses some of its aroma and flavour. Also, the ground spices may 20 deteriorate through absorption of moisture.

I have now found that the natural aroma of ground spices may be preserved by treatment of the spices with starch which is in the  $\alpha$ -state, that is, starch in the hydrophilic 25 form which is soluble in cold water and shows a V-type X-ray diffraction pattern (J. R. Katz, Z. Physik. Chem. A. 150, 37 (1930)). Such starch may be obtained by granulating the translucent paste absorbed 30 by gelatinising natural starch in hot water and cooling.

According to the invention, therefore, I provide a method of preparing condiments in which granular particles of ground spice 35 or a mixture of spices are coated with starch which is in the  $\alpha$ -state. The spice and starch are preferably mixed and then triturated with an aqueous solvent and the triturate dried. Solvents which may be used include, for 40 example, methanol, isopropanol and acetone. Ethanol, however, is the preferred solvent. The aqueous solvent solution preferably contains about 70% by weight of the solvent. The spice and starch are preferably mixed 45 in the ratio of about 100 to 5 parts by weight.

(Price 4s. 6d.)

The spices which may be treated by the present method include, for example, ground black or white pepper, cayenne pepper, powdered garlic, curry powder and mustard powder.

The invention also extends to the ground 50 spices or mixtures of ground spices, the particles of which have a coating of starch which is in the  $\alpha$ -state.

The condiments prepared according to the 55 invention have the further advantage that they are readily soluble in water and are thus able to readily develop their characteristic aroma and taste.

For the better understanding of the invention, the following examples are given by way of illustration only:—

#### EXAMPLE 1.

a. To 100 parts by weight of curry powder are added 5 parts by weight of starch 65 in the  $\alpha$ -state and 5 parts by weight of common salt. The mixture is blended in an appropriate mixer, such as, for example, a Mix Well Blender V (sold by Tokuju Kosakusho Co. Ltd., Bunkyo-ku, Tokyo, 70 Japan), till a homogeneous mixture is obtained.

b. A 70% by weight aqueous solution of ethanol is prepared from ethanol of above 99% purity and distilled water. 75

c. The powder mixture obtained in *a* and the aqueous ethanol prepared in *b* are mixed by stirring them together for about 30 minutes in a cylindrical kneading machine so that the powder is thoroughly saturated 80 with the solution.

At this stage of operation for the preparation of a moist powder, any serious acceleration of enzymic activity caused by the added water is effectively suppressed by the 85 presence of the ethanol. Thus a coarse granulate comprising curry powder whose particles are coated with a paste of  $\alpha$ -starch is obtained.

d. The coarse granulate thus obtained is 90

then passed through sieves so that grains of nearly uniform in size may be collected, which are then dried in a dryer. The dryer is provided with a number of heated surfaces which produce a constant temperature of 50°C. In this dryer the granulate is first brought to 50°C and then dried at this temperature for 30 minutes under a vacuum of 10 mm Hg.

#### 10 EXAMPLE 2

To 100 parts by weight of ground pepper are added 5 parts by weight of starch in the  $\alpha$ -state and 5 parts by weight of common salt. The mixture is then worked up as described in Example 1.

#### WHAT I CLAIM IS:

1. A method of preparing condiments in which granular particles of ground spice or a mixture of spices are coated with starch which is in the  $\alpha$ -state.

2. A method as claimed in claim 1 in which the granular spice and starch are mixed and triturated with an aqueous solvent and the triturate dried.

3. A method as claimed in claim 2 in which the mixture of spice and starch is triturated with aqueous ethanol.

4. A method as claimed in claim 2 in which the mixture of spice and starch is triturated with aqueous methanol, isopropanol or acetone.

5. A method as claimed in any of the preceding claims in which 100 parts by weight of spice are mixed with about 5 parts

of starch.

6. A method as claimed in any of claims 2 to 5 in which the granular spice and starch are mixed and triturated with an approximately 70% aqueous solution of the solvent and the triturate dried.

7. A method as claimed in any of the preceding claims in which the spice is curry powder, mustard powder, powdered garlic, cayenne pepper or black or white pepper.

8. A method of preparing condiments substantially as herein described.

9. A method of preparing condiments substantially as herein described with reference to either of the examples.

10. Condiments whenever prepared by a method as claimed in any of the preceding claims.

11. Ground spice or mixtures of ground spices the particles of which have a coating of starch which is in the  $\alpha$ -state.

12. Ground spice or mixtures of ground spices as claimed in claim 11 substantially as herein described.

For the Applicant,  
FRANK B. DEHN & CO.,  
Chartered Patent Agents,  
Imperial House,  
15/19 Kingsway,  
London, W.C.2.



F. B. Dehn & Co.

then passed through sieves so that grains of nearly uniform in size may be collected, which are then dried in a dryer. The dryer is provided with a number of heated surfaces which produce a constant temperature of 50°C. In this dryer the granulate is first brought to 50°C and then dried at this temperature for 30 minutes under a vacuum of 10 mm Hg.

#### 10 EXAMPLE 2

To 100 parts by weight of ground pepper are added 5 parts by weight of starch in the  $\alpha$ -state and 5 parts by weight of common salt. The mixture is then worked up as described in Example 1.

#### WHAT I CLAIM IS:

1. A method of preparing condiments in which granular particles of ground spice or a mixture of spices are coated with starch which is in the  $\alpha$ -state.
2. A method as claimed in claim 1 in which the granular spice and starch are mixed and triturated with an aqueous solvent and the triturate dried.
- 25 3. A method as claimed in claim 2 in which the mixture of spice and starch is triturated with aqueous ethanol.
4. A method as claimed in claim 2 in which the mixture of spice and starch is triturated with aqueous methanol, isopropanol or acetone.
- 30 5. A method as claimed in any of the preceding claims in which 100 parts by weight of spice are mixed with about 5 parts

of starch.

6. A method as claimed in any of claims 2 to 5 in which the granular spice and starch are mixed and triturated with an approximately 70% aqueous solution of the solvent and the triturate dried.

7. A method as claimed in any of the preceding claims in which the spice is curry powder, mustard powder, powdered garlic, cayenne pepper or black or white pepper.

8. A method of preparing condiments substantially as herein described.

9. A method of preparing condiments substantially as herein described with reference to either of the examples.

10. Condiments whenever prepared by a method as claimed in any of the preceding claims.

11. Ground spice or mixtures of ground spices the particles of which have a coating of starch which is in the  $\alpha$ -state.

12. Ground spice or mixtures of ground spices as claimed in claim 11 substantially as herein described.

For the Applicant,  
**FRANK B. DEHN & CO.,**  
Chartered Patent Agents,  
Imperial House,  
15/19 Kingsway,  
London, W.C.2.

Sheerness: Printed for Her Majesty's Stationery Office, by Smiths Printers and Duplicators.—1965.  
Published at the Patent Office, 25 Southampton Buildings, London, W.C.2, from which copies may be obtained.

