

# UNITED STATES PATENT OFFICE

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## METHOD OF COMMINUING GELATINE

No Drawing.

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My invention relates to the preparation of animal proteins commonly called gelatine, for aqueous solution (as is commonly done, not in pure water merely, but in milk, gravies, candy mixes, etc.). An example—by no means the only example of animal proteins called gelatine with which my invention is concerned—is the refined article commonly used as food, to which the name edible gelatine is more specifically and with more limited meaning applied.

In a companion application for Letters Patent of the United States, Serial No. 169,414, filed February 18, 1927, I have described the preparation of gelatine in finely divided condition by a procedure termed spray drying. A solution of gelatine, with or without associated substances such as sugar for instance, is atomized into a stream of warm air or into an evacuated space. The solvent immediately vaporizes, and the gelatine in the form of minute globules rains down and may by suitable apparatus be collected. Spray drying I have found to be the most economical method of obtaining gelatine in solid and finely divided condition from the gelatine liquor of the boiling pots. Nevertheless, spray drying has not hitherto gained acceptance in the industry because of the bulkiness of the product. Spray-dried gelatine as it hitherto has been prepared has a specific volume of about 14, whereas gelatine which after ordinary drying has been ground in a mill has a specific volume of about 2; and, notwithstanding the very much greater time required to dry and grind in a mill, the slower method has, because of the compactness of the product, been preferred.

I have found the bulkiness of spray dried gelatine to be due to adhesion between the minute globules which as above indicated characterize this article, and I find that if I take the spray-dried article and subject it to the action of a grinding mill, I can reduce the specific volume and at the same time increase the fineness of subdivision, and produce in very much shorter space of time than that required for mill grinding alone, an article which both in fineness of division and in spe-

cific volume is equal to the best product of mill grinding as hitherto practiced.

I take a quantity of say one hundred pounds of spray-dried gelatine having a specific volume of about 14, and subject it for several hours to the action of a ball mill or other suitable mill. The mill treatment smooths out the irregularities of the adherent spray-dried particles and to some extent breaks the particles, and results in a more finely divided article more uniform in its minute composition, more closely compacted and accordingly of less specific volume. The specific volume is reduced to about 2. To reduce gelatine to such a condition of comminution and of specific volume with the use of a grinding mill alone would require many times as long.

The same results may be got and with like advantage if the spray-dried material be subjected to the action of an attrition mill.

Grinding mills of these or of other types may be employed.

I claim as my invention;

The method herein described of comminuting gelatine which consists in spray drying a solution of the gelatine and grinding the spray-dried article.

In testimony whereof I have hereunto set my hand.

ANDREW NEFF.

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