

UNITED STATES PATENT OFFICE.

HORACE C. GARDNER, OF CHICAGO, ILLINOIS.

METHOD OF PROCESSING CANNED SUBSTANCES.

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To all whom it may concern:

Be it known that I, HORACE C. GARDNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and Improved Method of Processing Canned Substances, of which the following is a specification.

My invention relates to the preservation of meats and other substances contained in metal cans.

The method of processing—*i. e.*, cooking and sterilizing—commonly in use consists in immersing the filled cans in a bath heated to a suitable temperature, the cans being kept in the bath until the contents are sufficiently cooked and sterilized, after which they are removed and cooled. The temperature of the bath is usually about 240° Fahrenheit, but varies considerably, depending on circumstances. It is, however, almost invariably much higher than the boiling-point of water, and in order to maintain such high temperature instead of using water in the processing-bath it has been the practice to employ saline solutions or other liquids, such as molten tallow, which do not vaporize appreciably at the temperature necessary to be maintained. Upon the completion of the processing step the cans have been removed from the bath and cooled.

It has heretofore been attempted to carry out the processing operation above described economically and expeditiously by moving the cans continuously through the processing-bath on a traveling carrier, such as an endless conveyer, arranged to move through the processing-bath and to immerse the cans in the liquid therein. Such attempts have, however, proved unsuccessful, principally, if not altogether, for the reason that the liquids employed in the bath, owing to the changes effected by the high temperature, have injuriously affected the tinware of the cans and the iron of the conveyer. For example, where tallow has been employed for the processing liquid the continued high temperature to which it is subjected causes decomposition, with liberation of fatty acids, which attack the metal. This has proved a serious objec-

tion to the use of tallow in any form for processing canned substances, since the fatty acids attack the tin, eating off the coating, consequently making it liable to rust, besides otherwise weakening it. Furthermore, the decomposition of the tallow makes it necessary to provide fresh tallow at comparatively short intervals, thereby materially increasing the expense of the processing operation.

The object of my invention is to avoid the objections above pointed out, which object I accomplish by employing a bath containing a liquid susceptible of being raised to a high temperature without volatilization or decomposition and which does not injuriously affect metals, such as the iron or steel of the conveyer or the tinned ironware of the cans. The liquid which I employ is melted paraffin.

According to my improved process the paraffin is placed in a suitable receptacle, such as a tank, and is heated to the desired temperature, which is necessarily above the melting-point of paraffin and is almost invariably above the boiling-point of water. Indeed, any desired temperature may be obtained between the melting-point of the paraffin and its point of ignition. When the bath is at the proper temperature, the canned substances are immersed in it and allowed to remain for the proper length of time to cook their contents properly. Afterward the cans are removed and subjected to such further treatment as may be desired, such as passing them through a cooling-bath or conducting them under a spray of water for cooling purposes.

In its perfected form my improved process contemplates conducting the cans continuously into, through, and out of a bath of melted paraffin of sufficient length proportionate to the speed of travel of the cans, so that they are properly cooked in passing through it.

I am aware that it has heretofore been contemplated to use a paraffin-bath for cooking and preserving uncanned substances, and it has been suggested that such meats could be contained in an open metallic vessel; but such prior process did not contemplate the treatment of meats or other substances contained in hermetically-sealed cans by immersing the

sealed cans in a bath of paraffin. According to such prior process there was no necessity of preserving the open metallic vessel, where one was used, since the exclusion of air from the meats was effected solely by a coating of paraffin applied directly thereto. In my process, however, the preservation of the integrity of the cans is the object sought and is vital to the protection of their contents, since the air is excluded solely by the can itself.

That which I claim as my invention, and desire to secure by Letters Patent, is—

1. The method of cooking and sterilizing canned substances which consists in immersing the sealed cans in a bath of molten paraffin, substantially as described.

2. The method of processing substances contained in tin cans which consists in moving the cans through a bath of molten paraffin, substantially as described.

HORACE C. GARDNER.

Witnesses:

J. B. ROGERS,
W. H. PETTIT.