

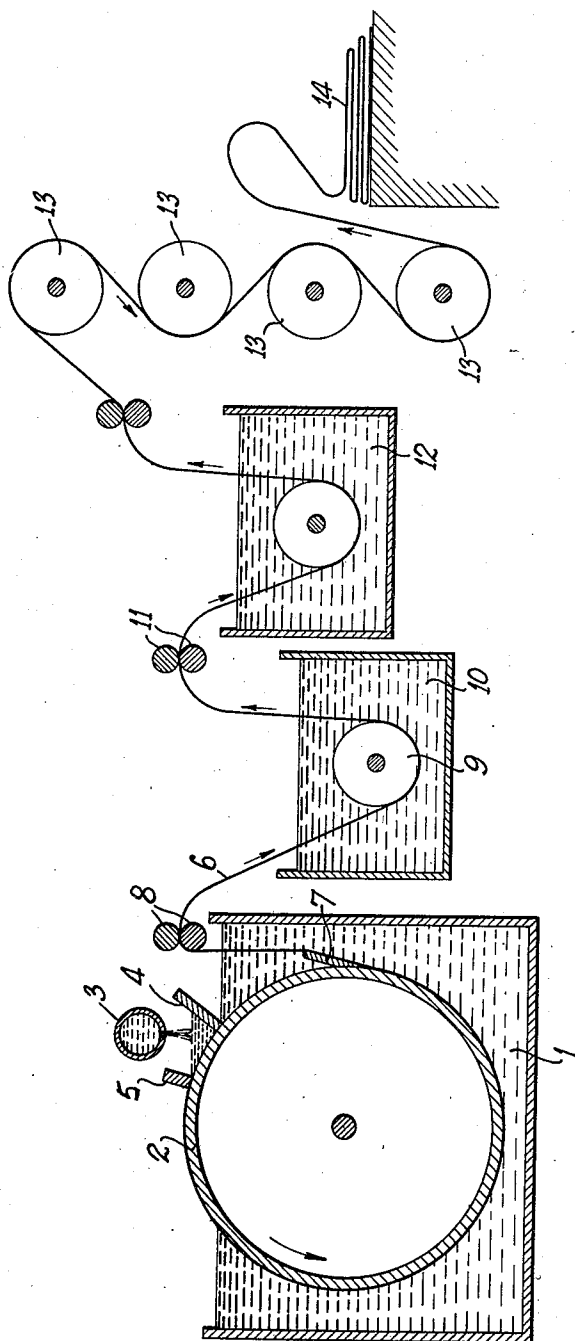
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METHOD OF PREPARING DRY PECTIN

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METHOD OF PREPARING DRY PECTIN

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This invention relates to the manufacture of pectin and more particularly to a method of preparing dry pectin in a readily dispersible form, and an object of this invention is to provide an improved and practical method of continuously and economically preparing dry, deterioration-resistant, readily dispersible pectin from the usual pectin liquid.

This and other objects which will be apparent to those skilled in this particular art are accomplished by the invention hereinafter described, and illustrated in the accompanying drawing which shows diagrammatically one form of apparatus capable of being used to carry out the present invention.

By the expression "pectin liquid" or "liquid pectin" as used herein, I refer to any suitable liquid dispersion of pectin, such as is well known in the art.

The present invention contemplates the continuous production of pectin in dry form from liquid pectin by providing a pectin-precipitating bath into which liquid pectin is continuously introduced in the form of a moving stream and from which the precipitated solid pectin is continuously removed. The solid pectin after removal from the precipitating bath may be treated in any desired manner to acquire any desired characteristics such, for example, as a predetermined pH value, or to purify it or the like.

In carrying out the present invention, I provide a bath 1 of a pectin-precipitating agent such, for example, as alcohol in which part of a rotating drum 2 is submerged. A feed mechanism is associated with the upper portion of the outer face of the drum, in position to deliver liquid pectin thereto so as to form a continuous layer or film of liquid pectin on the face of the drum. As illustrated, the mechanism includes a supply pipe 3 delivering liquid pectin to a trough 4, one side of which is formed by the drum surface, so as to form a film of liquid pectin the thickness of which is to some extent determined by a bar 5 located above the drum and serving to scrape off pectin in excess of that desired. The drum is rotated in the direction indicated by the arrow so as to continuously deliver the liquid pectin film in a stream-like manner to the pectin-precipitating bath 1, the action of which precipitates the pectin so as to form on the drum surface a continuous film of precipitated pectin which can be continuously removed from the drum in the form of a continuous sheet or film 6 by a scraper or knife blade 7, which may be located above or below the surface of the bath, as desired. The

extent to which the drum is submerged in the precipitating agent may be varied to a considerable degree. If, as illustrated, the greater portion of the drum is submerged, and the liquid fed on to the top thereof, any difficulty in keeping the liquid film intact on a steeply inclined surface is lessened because sufficient precipitation of the pectin is produced to forestall any loss of liquid by flowing off the more or less vertical portion of the drum surface, as might occur if only the lower portion of the drum was submerged. Squeeze rolls 8 are preferably employed to press the excess alcohol out of the film just after its removal by the blade 7. The drying of the pectin film 6 may, if desired, be completed by passing it through a drying oven or over warming surfaces for evaporating any excess alcohol immediately upon removal from the drum 2, after which the film can be collected and stored. Or the film may be subjected to further treatment so as to impart to the pectin certain desirable characteristics such, for example, as a predetermined pH value, and also to purify the pectin by washing out of the film any extraneous or foreign substances.

For example, the film 6 can be carried downwardly around a roller 9 submerged in a bath 10 of alcohol containing a material for giving to the pectin a certain predetermined pH value such, for example, as hydrochloric acid, although it will be apparent to those skilled in the art that other materials in place of hydrochloric acid can be employed to raise or lower the pH value as may be desired.

From the bath 10 the film is passed through a pair of squeeze rolls 11 which squeeze out surplus liquid and return it to the bath 10.

If the final product is intended for domestic jelly making, it is desirable that it contain a certain amount of free acid. When this is the case a second bath 12 containing approximately 25% lactic or tartaric acid or the like is provided. In passing through such a bath the pectin film acquires the desired free acid content.

The drying of the film is completed by passing it over warmed hollow rollers 13 after which it is collected in any desired manner such, for example, as folding the continuous film to form a laminated mass 14, or the film may be broken up and packaged in any desired way. Obviously, either or both baths 10 and 12 may be omitted.

The process is preferably carried out with the hollow drum 2 at normal room temperature. I have found, however, that heating the drum slightly to not more than 120° F. will cause the film of precipitated pectin to adhere better to

the drum surface. If the scraper 7 is located above the level of the bath and if the drum is heated, some of the alcohol will be evaporated from the precipitated pectin film prior to its removal by the scraper 7.

5 It is, of course, understood that the alcohol of the precipitating bath 1 must be replenished from time to time with fresh alcohol, to overcome the diluting of the original alcohol bath by water
10 carried into it by the liquid pectin, and also to compensate for that lost by evaporation when the drum is heated.

I claim:

1. The method of preparing a dry precipitated
15 pectin in the form of a substantially continuous film which comprises continuously introducing a thin film of liquid pectin into a bath containing a pectin precipitating agent to thereby precipitate the pectin of said film in the form of a
20 thin sheet, continuously withdrawing said sheet of precipitated pectin from said bath, and passing said sheet through a drying zone to dry the same.

2. The method of preparing a dry precipitated

pectin in the form of a substantially continuous film which comprises continuously introducing a thin film of liquid pectin into a bath containing a pectin precipitating agent to thereby precipitate the pectin of said film in the form of a thin
5 sheet, continuously withdrawing said sheet of precipitated pectin from said bath, continuously passing said sheet through an acid-containing bath to provide said pectin with a free acid content, and passing said sheet through a drying zone
10 to dry the same.

3. The method of preparing a dry precipitated pectin in the form of a substantially continuous film which comprises continuously introducing a thin film of liquid pectin on a supporting sur-
15 face into a bath containing a pectin precipitating agent to thereby precipitate the pectin of said film on said surface in the form of a thin sheet, heating said surface to warm the precipitated pectin, continuously removing said sheet of pre-
20 cipitated pectin from said surface and withdrawing it from said bath, and passing said sheet through a drying zone to dry the same.

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