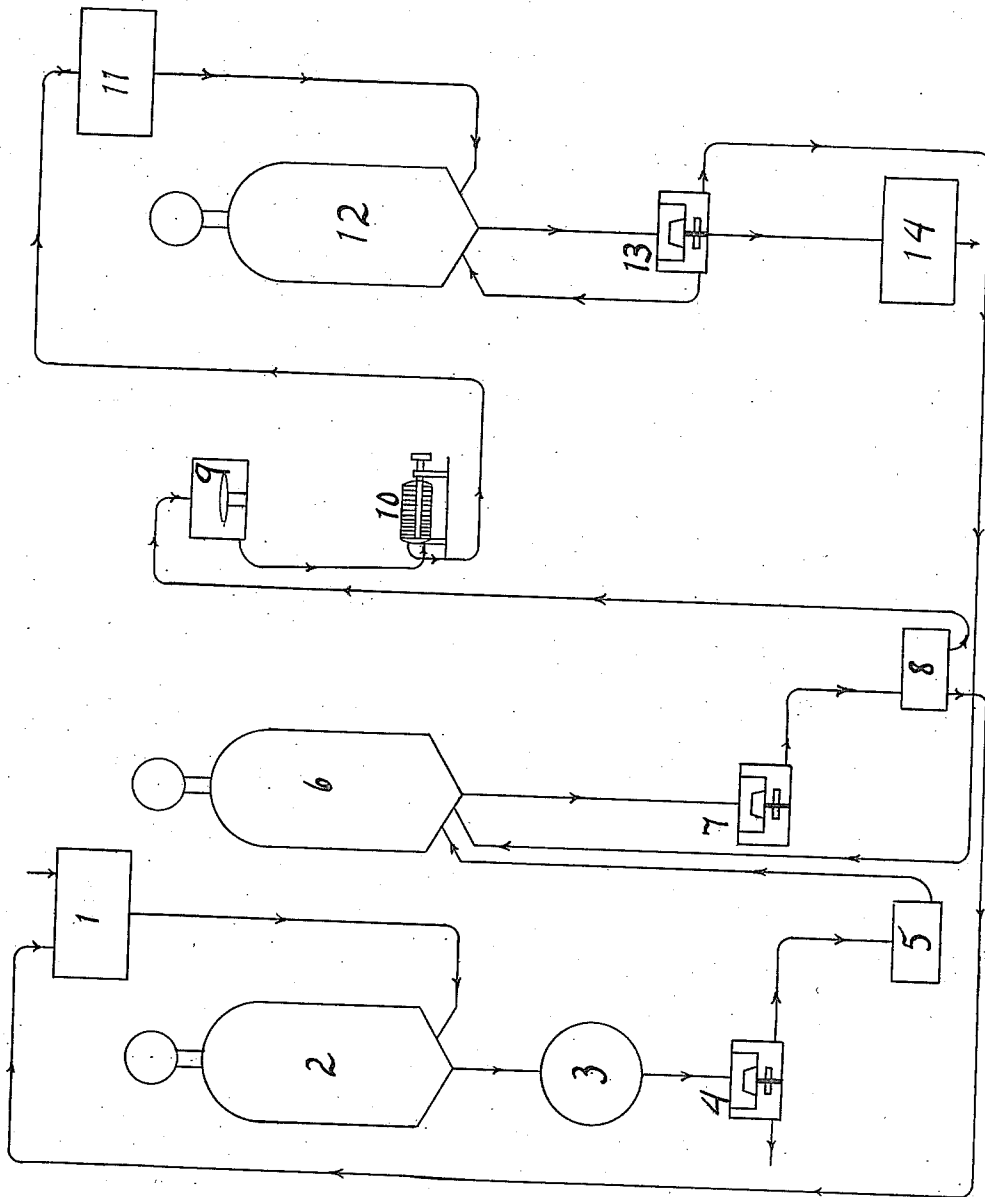


R. E. POSPISIL.
SUGAR PROCESS.
APPLICATION FILED MAR. 8, 1912.

1,028,272.

Patented June 4, 1912.



WITNESSES.

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SUGAR PROCESS.

1,028,272.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RUDOLPH E. POSPISIL, a citizen of the United States, and resident of Menominee, in the county of Menominee and State of Michigan, have invented new and useful Improvements in Sugar Processes, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

This invention relates to a process for producing white granulated sugar of high quality from waste molasses forming a by-product of the manufacture of beet sugar and has for its object to convert the molasses of low value, principally useful for stock feeds and the like purposes, into high grade sugar of much greater value.

It is a well known fact that with the process for making beet sugar now in general use there is from 50% to 60% of sugar left in the waste molasses which is not recoverable by ordinary methods. By means of the process of this invention one half of this sugar value is recovered so that the waste molasses is reduced from 50% sugar to 25% sugar and the sugar recovered is of the highest quality test, as high as 99 purity.

With the above objects in view the invention consists in the process for making sugar from waste molasses as herein claimed.

The accompanying drawing constitutes a diagram of the process of this invention.

In carrying out the process in accordance with this invention the wasted molasses from 57 to 58 purity is drawn into a tank 1 until the desired quantity is accumulated and has added to it the wash and green syrups from a later step in the process to raise its purity to 62 or 63. This mixed syrup and molasses is drawn from tank 1 into a vacuum pan 2 where it is boiled to a thickness of 92 or 93 Brix. It is then let into a crystallizer 3 where it remains approximately ninety-six hours to crystallize. The massecuite from the crystallizer is run through a centrifugal separator 4 by which the crystals are separated from the molasses. The molasses is not used but is sold as a by-product containing approximately 25% sugar. The separated crystals are melted with water in a melter 5 until they are of a consistency of 33 degrees Baumé to form what will be referred to as a low raw juice. By thus boiling the low raw juice the purity is raised from 57 or 58 to 84 or 85 and it is

then drawn into a vacuum pan 6 and is boiled over again into crystals and massecuite. The massecuite is passed through a centrifugal separator 7 where the green syrup is separated from the crystals and is returned to tank 1 as previously mentioned to raise the purity of the molasses. The crystals from centrifugal separator 7 are melted in water in a melter 8 to a consistency of thirty degrees Baumé and the purity is raised from 84 or 85 to 95 or 96. This high purity raw juice is passed through a sulfur station 9 where it is bleached and it is then passed through mechanical filters 10 where it is purified. It is collected in a tank 11 and then boiled over again in a vacuum pan 12 into massecuite which has 95 or 96 purity. This massecuite goes through a centrifugal separator 13 where the green syrup is separated from the crystals and is returned to vacuum pan 6 and the wash syrup is returned to vacuum pan 12. The washed crystals from centrifugal separator 13 are dried in a drier 14 where they become white granulated sugar of high quality with a purity of 99.

It will be noted that there are three kinds of syrup used during the process, the syrup from centrifugal separator 7 being returned to tank 1 and mixed with the waste molasses to raise the purity of the latter from 57 or 58 to 62 or 63 and this return is continuous throughout the process. The high green syrup from centrifugal separator 13 is drawn into vacuum pan 6 and the high wash syrup from centrifugal separator 13 is drawn into vacuum pan 12 and this continues throughout the process.

From the foregoing it will be understood that by means of this process the waste molasses is boiled and sugar is extracted from it which sugar by being boiled over again has its purity raised and is then bleached and filtered resulting in a product of white granulated sugar of high quality.

What I claim as new and desire to secure by Letters Patent is:

The process for obtaining high quality white granulated sugar from waste molasses which consists in raising the purity of the waste molasses by the addition thereto of syrup forming a by-product of the process, boiling the mixed syrup and molasses in a vacuum pan to a thickness of approximately 92 or 93 Brix, crystallizing the same and passing the crystals through a centrifugal

separator and then melting them in water to approximately 33 degrees Baumé and boiling the juice so formed in a vacuum pan with green syrup from a centrifugal separator used in a later step in the process and passing the massecuite from said vacuum pan through a centrifugal separator where the syrup is produced for mixing with the molasses as mentioned, the crystals from the last mentioned centrifugal separator being then melted with water to form a juice of the consistency of approximately 30 degrees Baumé and bleached and filtered and then

boiled in a vacuum pan with wash syrup from a centrifugal separator into which the massecuite thus formed next passes, the green syrup from said centrifugal separator being returned to the vacuum pan as before mentioned and the crystals being dried and forming white granulated sugar.

In testimony whereof, I affix my signature, in the presence of two witnesses.

RUDOLPH E. POSPISIL.

Witnesses:

FRANK J. BENESH,
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