UNITED STATES PATENT OFFICE.

FRANZ SCHWENGERS, OF UERDINGEN, PRUSSIA, GERMANY.

MANUFACTURE OF SUGAR.

SPECIFICATION forming part of Letters Patent No. 345,810, dated July 20, 1886.

Application filed April 24, 1886. Serial No. 200,095. (No specimens.)

To all whom it may concern:

Be it known that I, FRANZ SCHWENGERS, a resident of the city of Uerdingen, in the Kingdom of Prussia and German Empire, have invented certain Improvements in the Manufacture of Sugar, of which the following is a specification.

My invention relates to an improved process for the desaccharification of molasses and sugar-sirups, and the simultaneous production of oxalates from the salts contained therein. It is based upon the two facts, first, that molasses and sugar-sirups are perfectly soluble in concentrated methyl-alcohol or wood-spirit; and, second, that on treating this solution with alcohol and oxalic acid the salts contained in the molasses are separated therefrom, together with the sugar in the form of oxalates, leaving the organic acids and nitrogenous constituents in the solution.

The process based on these facts, and constituting the present invention, is essentially as follows: The molasses or sugar-sirups to be treated are mixed with methyl-alcohol or a mixture of methyl-alcohol and ethyl-alcohol in such proportion that the molasses become dissolved and do not separate as molasses again in the subsequent operations. For this purpose, by way of example, it would be sufficient to add to about one hundred and ten pounds of molasses, having a polarization of about fifty per cent., seven pints of methyl-alcohol. The perfectly-dissolved molasses thus obtained is mixed with oxalic acid dissolved in alcohol, and an excess of ethyl-alcohol is then added. The quantity of oxalic acid employed will depend upon the quantity of salts contained in the molasses. The oxalates formed separate out as precipitates, while the sugar is transformed by the excess of ethyl-alcohol added into an insoluble precipitate that separates with the oxalates. The oxalic acid may also be added simultaneously with the excess of ethyl-alcohol, in which case the salts and the sugar are precipitated simultaneously. The precipitate, separated by pressure from the liquid, is dissolved in water, and by a further addition of alcohol the oxalates are obtained by themselves as a precipitate, while the sugar remains in solution. Any traces of oxalic acid remaining in the sugar solution are precipitated by lime.

The separation of the alcohol and sugar is effected in the known manner.

The special advantage of the above-described process consists, in addition to its great simplicity, in the avoidance of any loss of sugar in aqueous or diluted alcohol solution by the use of methyl-alcohol as solvent in a concentrated form, while a sugar-sirup is obtained from the liquors having a coefficient of purity of over 99°, so that the yield of sugar amounts to over eighty per cent. of the pure sugar contained in the molasses. In addition, the oxalates obtained as by-products have a considerable commercial value as substances applicable in various manufactories.

Having thus described my invention, and also the manner how to perform it, what I claim, and desire to get granted by Letters Patent of the United States, is—

The process for the desaccharification of molasses and sugar-sirups with simultaneous production of oxalates from the salts contained therein, consisting in dissolving the molasses or sugar-sirups in methyl-alcohol or in a mixture of methyl and ethyl alcohol, converting the salts of the molasses into oxalates by the addition of oxalic acid dissolved in alcohol, and then separating the oxalates by the addition of an excess of ethyl-alcohol, substantially as herein described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANZ SCHWENGERS.

Witnesses:
MARC M. ROTTEN,
B. ROI.