UNITED STATES PATENT OFFICE.

CARL SCHEIBLER, OF BERLIN, GERMANY.

SEPARATING SUGAR FROM MOLASSES, SIRUPS, &c.

SPECIFICATION forming part of Letters Patent No. 279,446, dated June 12, 1883.

Application filed May 14, 1883. (No specimens.)

To all whom it may concern:

Be it known that I, CARL SCHEIBLER, doctor of philosophy and professor, residing in Berlin, Kingdom of Prussia, German Empire, have invented an Improved Method of Separating Sugar from Molasses and Sirups by the Production of Saccharate of Strontia at Low Temperatures, of which the following is a specification.

My invention relates to the method of separating sugar from molasses and sirups by the production of saccharate of strontia at low temperatures, also invented by me, and for which I have obtained the United States Letters Patent No. 260,244. According to this method, the process of separating the sugar from molasses, &c., consists in two operations: first, in producing at low temperatures monobasic saccharate of strontia in the solution of molasses, &c.; and, secondly, in producing at the boiling temperature bibasic saccharate of strontia in the lyes resulting from the first operation and still holding about twenty-five per cent. of the sugar originally contained in the molasses, &c., the said bibasic saccharate being thereupon utilized by its addition to a new portion of molasses for the purpose of again producing monobasic saccharate of strontia. Although this method has in all instances proved to be completely efficient, it possesses the inconvenience that it requires in the second operation the production of a substance—*i. e.*, of the bibasic saccharate of strontia—which is not utilized directly in obtaining sugar. For the purpose of obviating this inconvenience, I at present do away with the second one of the said operations and employ the sacchariferous mother-lye and the lixiviating liquid resulting from the first operation as a dissolvent for further portions of molasses, and I thereupon repeat the same operation. The quantity of sugar thereafter contained in the remaining lye will not be greater than after the first operation. The whole amount of sugar contained in the entire quantity of molasses treated being, however, doubled, the relative amount remaining in the lye is reduced to one-half. By several times repeating the same operation the relative residue of sugar may thus be reduced until the lye becomes unfit for further use in the process.

For carrying out the invention I proceed as follows: Monobasic saccharate of strontia having been produced according to the directions given in the specification of the aforesaid patent in respect to the first part of the process, and thereupon separated by filter-presses or otherwise from the lye and washed, a fresh quantity of molasses or other sacchariferous liquid is mixed with the lye and lixiviating liquid thus obtained, and so much caustic strontia is added as is required for the formation, with the sugar of the molasses, &c., of monobasic saccharate of strontia and for decomposing foreign substances. This mixture is heated to about 70° centigrade, and thereupon allowed to cool. Hereafter a small quantity of monobasic saccharate of strontia from a previous operation is added, whereby, in the manner stated in the aforesaid specification, the greater part of the like saccharate of strontia contained in the solution is caused to crystallize out. The crystalline precipitate having been separated from the lye, the latter and the lixiviating liquid are again used for dissolving another quantity of molasses and strontia. This operation may be repeated until, by the accumulation of foreign substances, the lye has become too thick to allow a further convenient employment of the same. Ordinarily this will be the case after the process has been carried out from six to eight times.

Assuming, on the ground of what has hereinbefore been stated, that twenty-five per cent. of the sugar contained in the molasses remains in the lye and the lixiviating liquid of the first operation, this residual quantity will continue unchanged for all further operations of the same series. Considering, moreover, that after the second operation the entire quantity of sugar treated amounts to the double of the quantity passing through one operation, the residual amount of sugar after the second operation will be only one-half, multiplied by twenty-five, or twelve and one-half per cent., of the whole quantity treated, and after six or eight operations it will represent but about four or three per cent., respectively. So insignificant a residue having been arrived at, the series of operations may be considered finished and a new series commenced. After the strontia present in the lye resulting from the last operation of any series has been extracted for further employment, the lye itself may be utilized as ma-

nure or for the manufacture of alkaline salts, ammonia, &c.

I claim as my invention—

The method of employing the mother-lyes resulting from the separation of monobasic saccharate of strontia from molasses or other sacchariferous liquids by mixing with the lyes a fresh portion of molasses or sacchariferous liquid and caustic strontia for the purpose of again producing from such mixture monobasic saccharate of strontia, substantially as described.

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

CARL SCHEIBLER.

Witnesses:
B. ROI,
G. H. SMITH.