

# UNITED STATES PATENT OFFICE.

FRANZ O. MATTHIESSEN, OF IRVINGTON, NEW YORK.

## TRANSFORMING SOFT SUGAR INTO HARD BLOCK SUGAR.

SPECIFICATION forming part of Letters Patent No. 333,652, dated January 5, 1886.

Application filed June 29, 1885. Serial No. 170,176. (Specimens.)

*To all whom it may concern:*

Be it known that I, FRANZ O. MATTHIESSEN, of Irvington, New York, have invented a certain Improvement in Transforming Soft Sugar into Hard Block Sugar, of which the following is a specification.

The transformation of soft sugar into hard sugar has been heretofore effected by causing lightly-compacted and dried cakes of soft sugar to be permeated with a more or less concentrated hot solution of white sugar, by the crystallization of which, when the cakes were allowed to cool off, the particles of soft sugar were cemented together, as more fully described in Letters Patent of the United States No. 318,639, issued to me May 26, 1885. This process of transforming soft sugar into hard sugar by the cementation of the particles of soft sugar to each other resulting from the crystallization of sugar from the white liquor applied as described produces a more or less dense and heavy block sugar.

By my present invention I effect the transformation of soft sugar into hard sugar without this increase in density, and produce blocks or cubes of comparatively light hard sugar having but two smooth sides, the remaining four sides having the rough appearance produced by cleavage.

In carrying out my invention I spread upon a horizontal table, or preferably upon the bottom of a horizontal pan, a layer of soft "A" sugar of, say, eleven-sixteenths of an inch in thickness. Instead of using soft sugar alone, I may mix some granulated sugar with the soft sugar, or I may use only granulated sugar to which a suitable amount of moisture has been added. I then subject the layer of sugar to such compression between the bed upon which it rests and the horizontal base of a compression-plate as will effect a reduction in its thickness ranging from, say, one-thirty-second to one-sixteenth of an inch. The extent of pressure required at this stage of the operation will of course vary according to the percentage of moisture present in the sugar which is being operated upon. The more moist the sugar the less will be the pressure

required. Having compressed the layer of sugar to the required extent, I then subject it to moderate heat for a period of, say, six hours. I prefer to form the layer of sugar in a pan, which can be removed from the table upon which it is supported during the compressing operation and placed in a suitable oven, wherein the compressed layer of sugar is baked.

The compression and subsequent baking of the layer of soft sugar transforms it into a cake of hard sugar, which is then removed from the oven and divided into cubes or blocks by cleaving it in parallel lines both lengthwise and crosswise.

The sugar thus produced is hard and light, and all of the cubes or blocks, except those produced from the edges of the cake of hard sugar, will have but two smooth sides, and those two sides will be opposite to each other, while the remaining four sides will have the peculiar appearance and irregularities of surface characteristic of the planes of cleavage of hard sugar.

I claim as my invention—

1. The process of transforming soft sugar into cubes or blocks of comparatively light hard sugar herein described, which consists in forming from soft sugar or moistened granulated sugar, or mixtures of soft and granulated sugar, by suitable compression and baking, a cake of hard sugar, and in then cleaving such cake of hard sugar in parallel lines both crosswise and lengthwise, and thereby dividing it into cubes or blocks of the required dimensions.

2. As a new article of manufacture, a cube or block of hard sugar comparatively light in density, two opposite sides of which cube or block have the smoothness characteristic of pressed surfaces, and the remaining four sides the roughness and irregularities characteristic of the planes of cleavage of hard sugar.

F. O. MATTHIESSEN.

Witnesses:

O. H. KRAUSE,  
ROBT. MOELLER.