W. H. WHITMORE.

Making Cube Sugar.

No. 38,854. Patented June 9, 1863.

Fig. 2

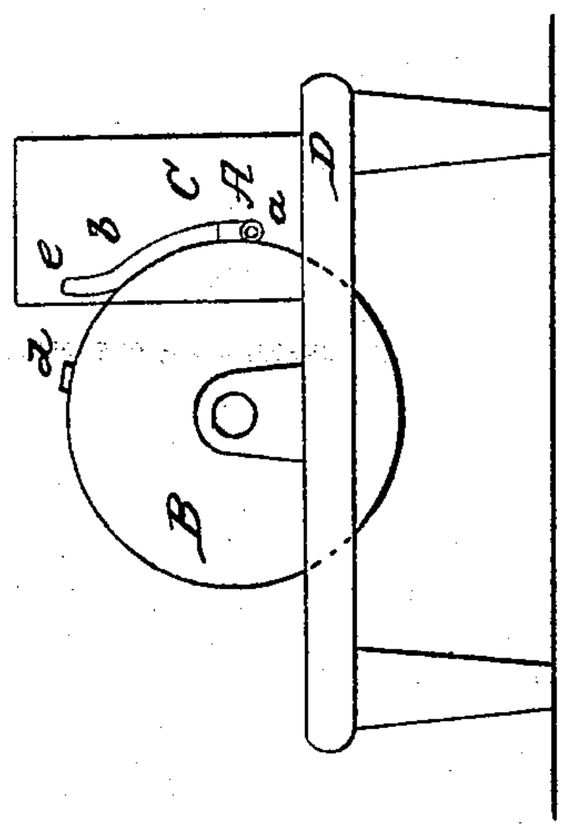


Fig. 3

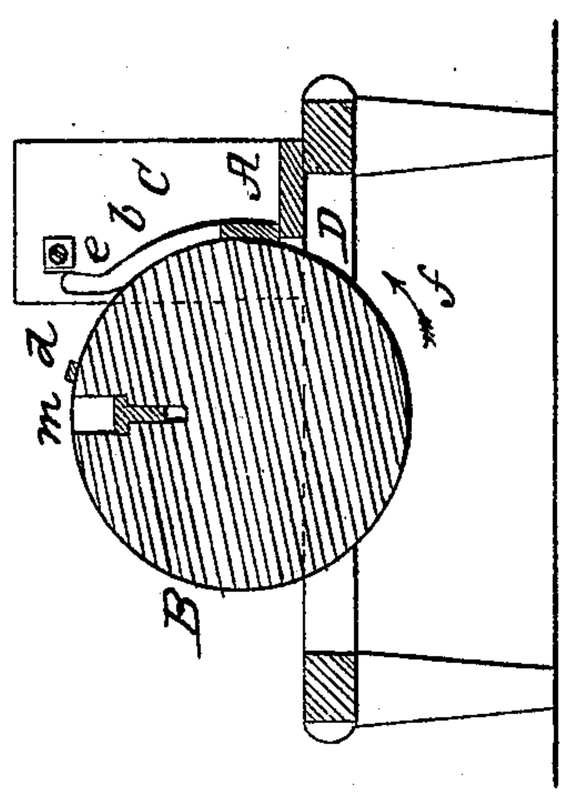
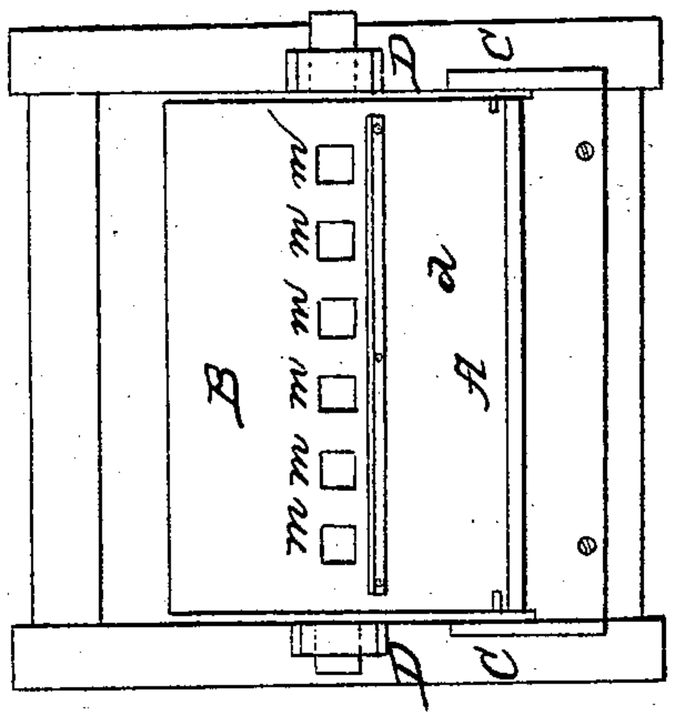


Fig. 1



Witnesses;
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UNITED STATES PATENT OFFICE.

WILLIAM H. WHITMORE, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN APPARATUS FOR THE MANUFACTURE OF CUBE-SUGAR, &c.

Specification forming part of Letters Patent No. **38,854**, dated June 9, 1863.

To all whom it may concern:

Be it known that I, WILLIAM H. WHITMORE, a resident of Boston, in the county of Suffolk and State of Massachusetts, have made a new and useful improvement or invention having reference to machinery for converting by pressure in molds loose sugar or other material into blocks of a cubical or prismatic form; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 a side elevation, and Fig. 3 a vertical section, of my invention as applied to the cylinder of a sugar-presser.

The kind of machine to which my invention is specially adapted (it being for converting sugar into cubes or blocks) is that for which Gustavus A. Jasper, of Charlestown, of the State aforesaid, has recently applied for a patent, such patent having been allowed on the 23d of April, A. D. 1863, on condition of the payment by him of twenty dollars.

In the aforesaid drawings I have not deemed it necessary to exhibit all the details of the invention of the said Jasper; but I have shown a cylinder which is marked B, and may be supposed to represent the mold-cylinder of the said Jasper's machine, and when in operation to be provided, like it, with molds and pressing-pistons, and suitable machinery for operating such pistons. In the operation of the said Jasper machine it has been found that the stationary pressure-plate S, against which the sugar in the molds is pressed by the plungers or pistons, not only creates great friction to impede the movement of the drum or cylinder of the molds, but, in consequence of the movements of the pistons while a range of the molds may be in the act of passing by the edge of the plate, such edge of the plate renders the outer faces of the blocks more or less oblique with respect to their opposite faces. Each molded prismatic block or cube of sugar, while it may be passing by the edge of the pressure-plate, will be forced outward more or less by its plunger, and consequently, on leaving the said plate, the block will project from the mold more at one edge of such block than at its opposite edge. In this way the block will not only have opposite faces out of parallelism, but will be unequally compressed.

My improvement or invention is designed as a remedy for these defects in the action of the said machine.

In carrying out my invention I employ a narrow and movable pressure-plate, A, its width being but little greater than that of one of the molds. It should extend across the drum or cylinder B, (provided with molds *m m m m*,) and at its ends be provided with friction-rollers *a a*, each of which should enter and run in one of two curved grooves or slots, *b b*, made in two standards, C C, supported by the frame D of the machine. Each of the said grooves for a portion of its length is concentric with the cylinder or drum, and afterward has a turn or bend away from the same, as shown at *e*. This deflection of the slot or groove should be such that on completion of the pressing of the sugar-mold or range of molds the press-plate may be suddenly or instantly so drawn or moved away from the periphery of the cylinder or drum as to enable the block or blocks of sugar in the said mold or molds to be advanced out of it or them without any contact with the presser-plate.

For the purpose of moving the presser-plate along with the cylinder the requisite period of time for the sugar to be duly compressed in a straight range of the molds, there may be applied to the periphery of the cylinder, and near to each range of molds, a fillet or metallic rib, *d*, which during the revolution of the cylinder will be brought underneath the presser-plate, and will lift it up in its grooves or slots and force its roller up into the upper parts of such grooves. After having forced the rollers into such upper parts of the grooves, the rib or fillet, by the rotary motion of the cylinder, will be drawn away from underneath the presser-plate, and thus leave the latter free to fall downward to a position for action with the next series of molds—a result which will next happen, owing to the action of gravity on the presser-plate.

I do not confine my invention to the slots and the rib or fillet for operating the movable presser-plate, as there are mechanical equivalents which may be adopted in lieu of them, the essential point or points of my invention being to cause the presser-plate to move with

the drum for the time necessary to press the lump or mass of sugar in each mold, and after this to so suddenly depart from the drum as to be out of the way of the molded sugar while it may be in the act of being expelled from the molds. With my invention I contemplate the feeding of the sugar into the molds by means of a suitable apparatus so constructed and arranged as to cause the sugar to enter each of the molds when it may be below, rather than above, the presser-plate, in which case the drum will revolve upward toward the presser-plate, or in the direction exhibited by the arrow *f* in Fig. 3.

I do not claim the stationary presser-plate combined and used with the molds or drum of molds, as in the said Jasper machine; but

What I claim is—

A combination consisting not only of the rotary molding-drum or series of molds and a movable presser-plate, but mechanism for imparting to such presser-plate motions substantially as and for the purpose hereinbefore described, the said rotary molding-drum, when in use, being provided with a plunger or piston to each mold, and with suitable means of operating such piston or plunger.

W. H. WHITMORE.

Witnesses:
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