J. W. JARBOE.

Machine for Pressing Sugar into Blocks.

No. 166,383. Patented Aug. 3, 1875.

Fig: 1

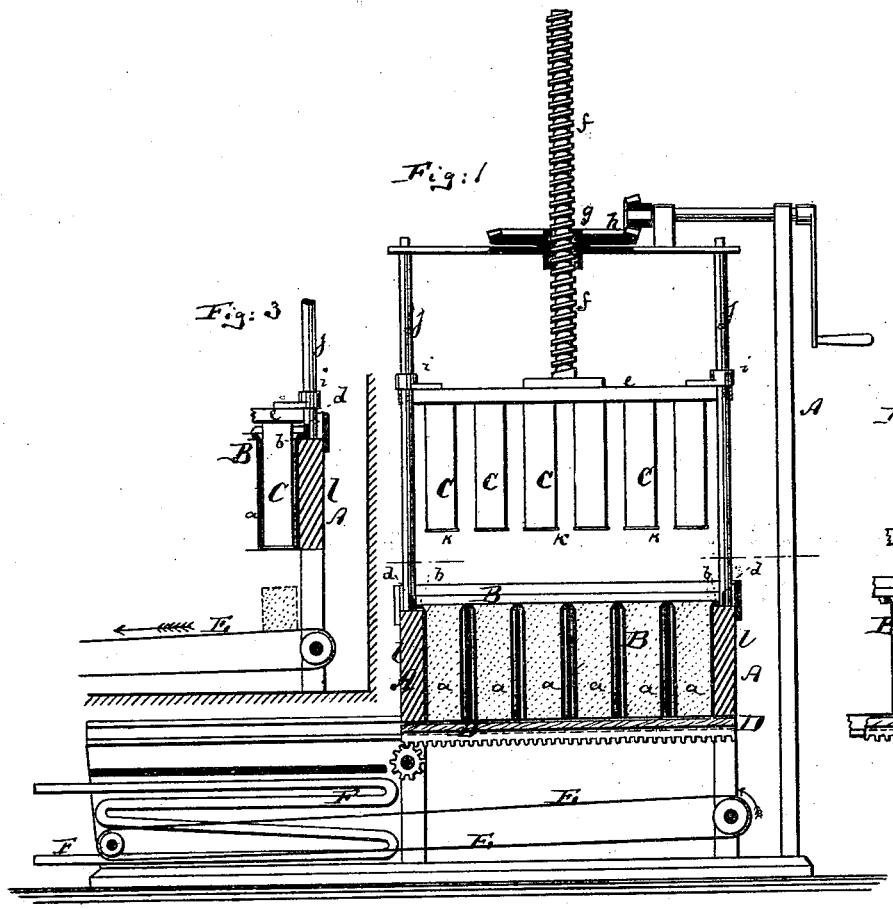


Fig: 3

Fig: 2

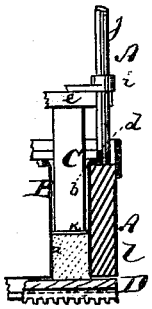
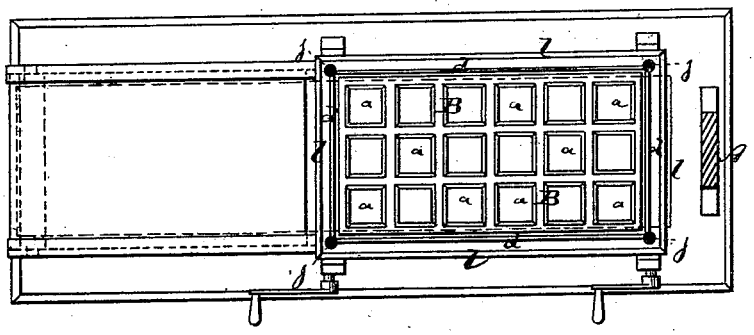


Fig: 4



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UNITED STATES PATENT OFFICE.

JOHN W. JARBOE, OF GREEN POINT, ASSIGNOR TO HIMSELF AND JOSEPH GANDOLFO, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN MACHINES FOR PRESSING SUGAR INTO BLOCKS.

Specification forming part of Letters Patent No. **166,383**, dated August 3, 1875; application filed June 25, 1875.

To all whom it may concern:

Be it known that I, JOHN W. JARBOE, of Green Point, in the county of Kings and State of New York, have invented a new and Improved Machine for Pressing Sugar into Blocks, of which the following is a specification:

Figure 1 is a sectional side elevation of my improved machine for pressing sugar into blocks. Figs. 2 and 3 are detail sectional views of the molds, showing the dies in different positions. Fig. 4 is a top view of the cellular mold.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to a new machine for pressing centrifugal-machine sugar, or other granular sugar, into blocks for table use; and consists, principally, in the combination of a series of stationary molds that are open at both ends with a series of dies or plungers that fit said molds, and with a sliding bottom beneath said molds, and an endless or other carrier beneath said bottom, all as hereinafter more fully described.

The invention also consists in the combination of a heating apparatus with the carrier, and in other features of improvement, as hereinafter more fully described.

In the accompanying drawing, the letter A represents the stationary frame-work of my machine. In the same is supported a cellular mold, B, composed of a series of contiguous, prismatic, parallel, open-ended chambers, *a a*, that constitute the molds proper of the machine. These chambers *a a* are formed by vertical partitions of the cellular mold, in manner clearly indicated in Figs. 1 and 4, and are made flaring at their upper ends, to facilitate the entrance of the moist sugar into the chambers, and prevent it from settling on the upper ends of the intervening partitions. By projecting flanges *b b*, or otherwise, the mold B is suspended in a stationary box-like part, *l*, of the frame A, that surrounds said mold; but in order to confine the sugar to be molded to the mold, and prevent it from running over the edges thereof, I affix ledges *d d* to the surrounding box-like part *l* of the frame A, said ledges projecting above and extending around the top of the mold, as indicated in Fig. 1.

C C are a series of dies or plungers, suspended one directly above each chamber *a*, and all attached at their upper ends to a sliding head, *e*, to which vertical motion can be imparted by means hereinafter described. The form of each plunger C is prismatic, like that of its chamber or mold *a*, and the size such that said plunger, when let down, will just fill its chamber. The head *e* is, by a central screw-shaft, *f*, suspended from a rotary nut, *g*, that carries a bevel-gear wheel, *h*, or is otherwise so connected with suitable mechanism as to be capable of receiving vertical reciprocating motion. Eyes *i i*, that are attached to the head *e*, embrace posts *j j* of the frame, and serve to steady the plungers in their motion. D is a horizontal slide, arranged on a plane about with the lower ends of the molds *a a*, so it can be moved beneath said molds, as in Fig. 1, to constitute a bottom for them, or moved away from said molds to open their lower ends. Beneath the plane of the sliding bottom D is an endless belt, E, or other carrier, to remove the cubes or blocks of sugar from beneath the molds. F F are steam-pipes or other heating devices, placed stationary near the sides of the endless belt or other carrier, E, to dry the cubes of pressed sugar that are placed on and moved by said carrier.

The operation is as follows: The sugar, as it comes from a centrifugal machine, or other loose or moist granular sugar, is, while the bottom D closes the lower ends of the molds and the plungers are raised, as in Fig. 1, poured through a suitable spout upon the molds, so as to fill all the several chambers *a a*, the ledges *d* confining the sugar to its place. Thereupon the plungers are brought down into the chambers *a*, compressing the sugar between them and the bottom D into the required size, as indicated in Fig. 2. The downward motion of the plungers is now momentarily arrested, the bottom D withdrawn, and the downward plunger motion thereupon resumed to discharge the blocks from the chambers *a a* upon the carrier E, as indicated in Fig. 3. The plungers are next elevated into the position shown in Fig. 1, the sliding bottom D reapplied beneath the molds, and operation resumed, as before.

Instead of using a sliding bottom, D, a folding bottom may be used, and instead of using a single such bottom there may be several, even as many as one for each chamber. For cleaning the chambers *a* of the mold I attach to the lower end of each plunger C a piece, *k*, of leather or rubber, made to project slightly beyond the sides of the plunger, as in Fig. 1. These flexible wipers will not be in the way during the descent of the plungers, but during their ascent they will wipe the chambers clean; yet for thorough cleaning the whole mold B may from time to time be removed and replaced.

I am aware that sugar has been pressed in cellular molds; but I believe that I am first to press it in a stationary cellular mold over a movable bottom which is above a carrier, thereby making the entire operation continuous and automatic, and dispensing with the necessity of removing the mold with its contents after each pressure.

The application of the heating mechanism F to the carrier E is of advantage in overcoming, where there is proper room for a long carrier or for a long travel thereof, the necessity of using a drying-room.

I claim as my invention—

1. In a machine for pressing sugar into blocks, the combination of the stationary cellular molds B with the intermittent compressing and discharging plungers C C, movable bottom D, and carrier E, substantially as and for the purpose hereinbefore described and set forth.

2. The combination of the heating apparatus F with the sugar-carrier E, to dry the sugar while it is on said carrier, substantially as herein shown and described.

3. The combination of the wipers *k* and the plungers C, substantially as and for the purpose specified.

JOHN W. JARBOE.

Witnesses:

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