W. JASPER & S. BOUSHEY.

Hopper for Cube Sugar-Machine.

No. 208,521. **Patented Oct. 1, 1878.**

Fig. 1.

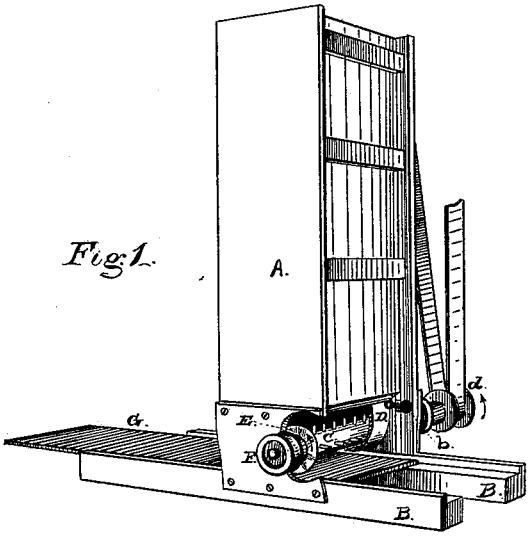


Fig. 2.

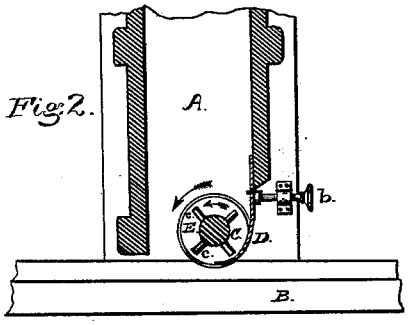


Fig. 4.

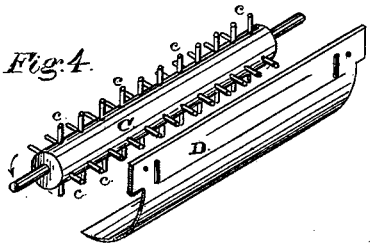


Fig. 5.

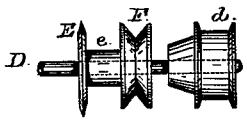
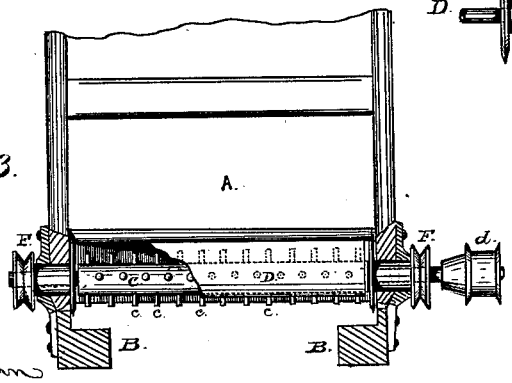


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM JASPER AND STEPHEN BOUSHEY, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN HOPPERS FOR CUBE-SUGAR MACHINES.

Specification forming part of Letters Patent No. **208,521**, dated October 1, 1878; application filed December 1, 1877.

To all whom it may concern:

Be it known that we, WILLIAM JASPER and STEPHEN BOUSHEY, both of the city and county of San Francisco, in the State of California, have invented a new and useful Improvement in Feed Box or Hopper for Cuse-Sugar Machines, which invention is fully et forth and described in the following specification and accompanying drawing.

In the drawing herein referred to, Figure 1 is a perspective view of our improved feed-box for cube-sugar machines, with its outer portion broken away to show the parts within. Fig. 2 is a vertical section taken longitudinally through the box. Fig. 3 is a detail view of the front side of the box. Fig. 4 is a detail view of the centrifugal shaft and the horizontal cutter or planer. Fig. 5 is a view of the vertical cutting or shaving disk for giving a true surface to the sides of the slab of sugar.

The object of our invention is to provide a means for feeding and distributing the moist sugar in a smooth and regular manner upon the plates or trays of cube-sugar machines, and for forming it thereon in a slab or block of uniform density of any desired thickness, with true and smooth surfaces, before it is presented by the plates or trays to the cutting and pressing mechanism.

To this end our invention consists in the combination, with the feed box or hopper, of a means for throwing the moist sugar evenly upon the plates or trays, and for regulating the thickness of the slab or block so formed, and for giving it smooth and true sides and edges, as will be more fully set forth hereinafter.

In the accompanying drawing, A represents the box or receptacle into which the sugar is led by a suitable spout or conductor; B B, the part of the frame of the machine to which this box is secured. These rails B also form the guides for the plates or trays to run upon.

C is the centrifugal shaft, provided with projecting arms *c c*, for distributing the moist sugar and throwing it evenly upon the plates and in a mass of uniform density. This shaft is situated within the mouth or discharging end of the box, and close to the face of the curved planer D, so that a space is left for the proper descent of the sugar between the shaft and the side of the box, and the rapid rotary motion given to this shaft causes it to throw the sugar with force upon the plate or tray, and to give a uniform density to the mass. The pulley *d* upon the end of the shaft C gives motion to this part of the machine, it being driven by a belt and revolved in the same direction as the plates move.

The planer D is placed within the mouth of the box, and is adjustable vertically to and from the plate. It is made of a curved shape to bring its cutting-edge in a proper horizontal position below the centrifugal shaft C, that it may act with a proper cutting or planing effect upon the surface of the sugar as the plate is drawn beneath it. Its curved form also allows the shaft and its arms *c c* to act close to the cutting-edge of the planer D, and to throw the surplus sugar away from the cutter as fast as it accumulates. The direction of the revolution of the centrifugal shaft causes or permits it to act in this twofold manner to throw the sugar upon the plate, and at the same time to carry the surplus quantity away from the cutting-edge of the planer and up into the box again. The height of the edge of this planer D from the plates G regulates the thickness of the slab or block, and it is moved and held by means of small eccentric pins on the ends of the spindles *b b*, which fit in holes made for them in the face of the planer, or any other suitable means may be used—as, for instance, a rack and pinion—to move the planer.

In connection with these parts we use a means for producing a true and regular surface along the sides of the slab as the plates G are moved beneath the mouth of the box. This consists of the small rotating disks E E, with cutting or shaving edges, situated within the mouth of the box A, and in line with its sides. They are fixed upon collars *e e*, through which the shaft C passes; but they turn independently of it and at a much slower rate of speed, motion being given to them by means of the pulleys F F. These cutters, as they revolve, cause the sugar to feed down along the edges of the plate and prevent the mass from adhering to the sides of the box; and they also act to form the slab with true and square edges as it is drawn along.

The plates G are carried forward automatically beneath the mouth of the feed-box, and are properly filled as they are moved along and presented to the cutting and pressing mechanism, by which the slab is cut and pressed into cubes of uniform size with regular edges; and the arrangement of the several parts of the machine with our mechanism is such that the plates are fed through beneath the mouth of the box one after the other in regular order, and the operation of the machine is made continuous.

Having thus fully described our invention, what we claim as new therein, and desire to secure by Letters Patent, is—

1. The feed box or hopper for distributing the mass of sugar upon the plate or tray and forming it in a slab of uniform density, with even and smooth sides and edges, the same consisting of the box A, the rotating shaft C, with its projecting arms or rods *c c*, the adjustable planer D, and the rotating cutting-disks E E, all constructed, combined, and operating substantially as and for the purposes described.

2. The combination, with the vertical feed-box A and horizontally-moving plates G, of the tooth-shaft C, placed in the lower end of the said feed-box, for distributing the sugar equally upon the plates which move below and out of contact with the walls of the box, constructed, arranged, and operating substantially as described and shown.

3. The combination, with the vertical feed-box A and horizontally-moving plates G, of the planer D, adjustably secured to the lower end of the feed-box and above the surface of the said plates, constructed, arranged, and operating substantially as described and shown.

4. The combination, with the vertical feed-box A and horizontally-moving plates G, of the toothed shaft C and adjustable planer D, operating substantially as described and shown.

5. The combination, with the feed-box A and horizontally-moving plates G, of the rotating cutting or shaving disks E E, arranged upon a shaft above and at the sides of the moving plates, substantially as and for the purpose set forth.

In testimony that we claim the foregoing we have hereunto set our hands and seals this 8th day of November, 1877.

WILLIAM JASPER. [L. S.]
STEPHEN BOUSHEY. [L. S.]

Witnesses:
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