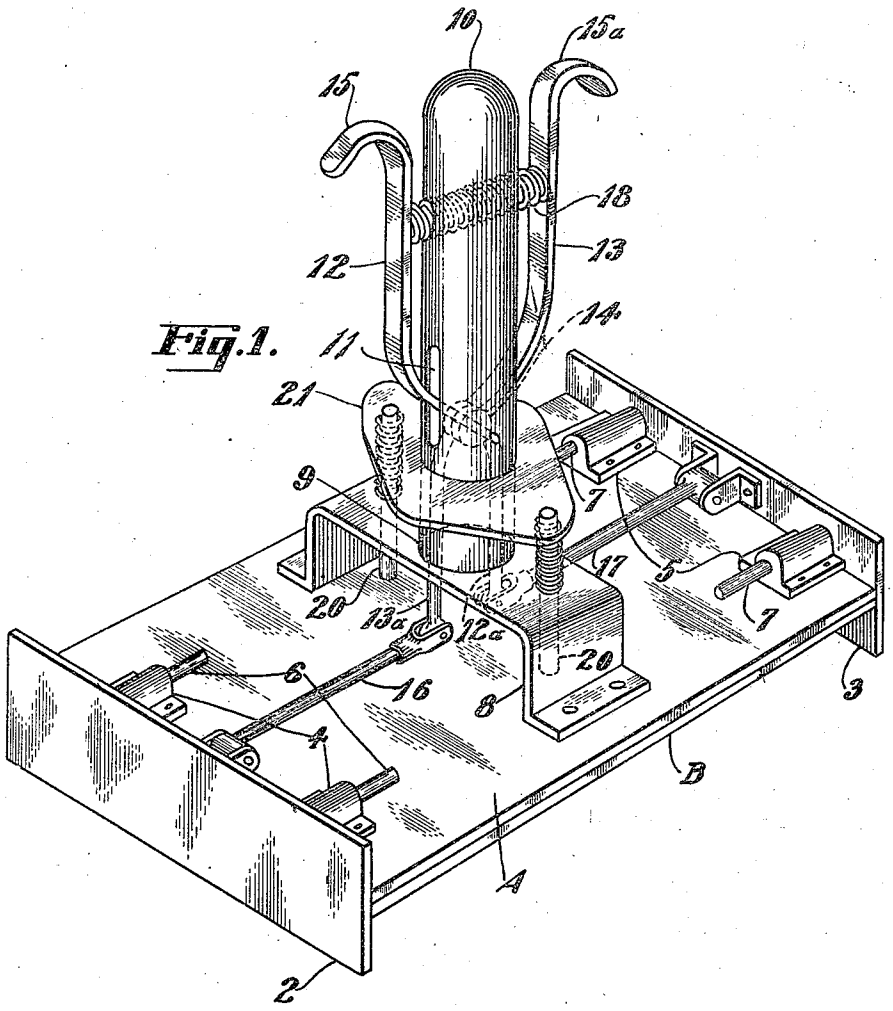
Sept. 16, 1924. 1,508,837

H. DIPPEL

CUBE SUGAR PACKING DEVICE

Filed Oct. 10, 1923 2 Sheets-Sheet 1

Fig. 1.



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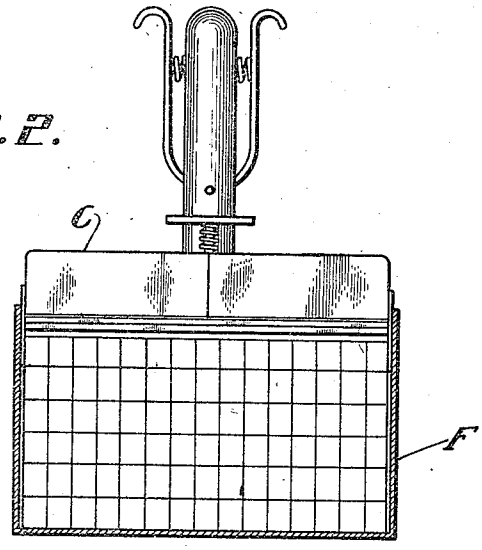
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Fig. 2.



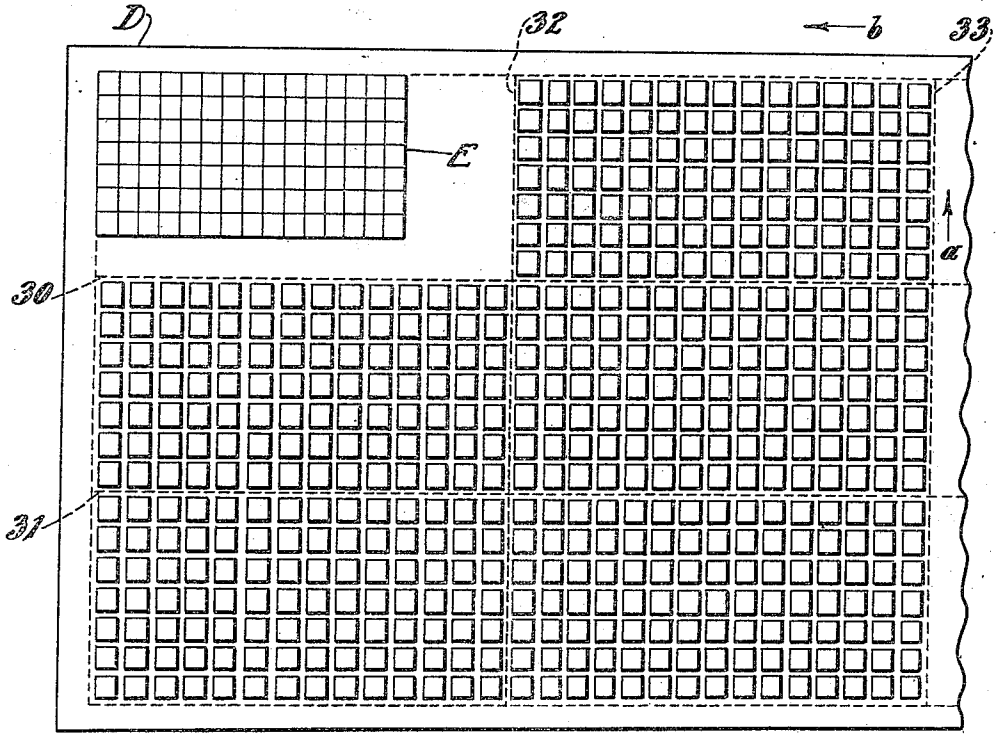


Fig. 3.

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UNITED STATES PATENT OFFICE.

HENRY DIPPEL, OF SAN FRANCISCO, CALIFORNIA.

CUBE-SUGAR PACKING DEVICE.

Application filed October 10, 1923. Serial No. 667,649.

To all whom it may concern:

Be it known that I, HENRY DIPPEL, a citizen of the United States, residing in the city and county of San Francisco, and State of California, have invented new and useful Improvements in Cube-Sugar Packing Devices, of which the following is a specification.

This invention relates to a packing device and especially to a device of this character which is adapted for the purpose of handling cube sugar.

Sugar, as is well known, is sold in various forms, such as powdered sugar, granulated sugar, lump sugar, cube sugar, etc. The latter form is probably the most expensive and the least used; this being due to the high cost of manufacture and also because some individuals consider cube sugar more or less unsanitary.

Cube sugar during the latter stages of its manufacture is first passed through a molding machine. The molded sugar is then deposited on trays. The trays are in turn placed in drying ovens and are then transferred to the packing rooms where packers, usually girls, pick up the cubes by hand and pack them in row formation in cartons, boxes or the like, in which they are finally sold. It is the hand packing operation which is the most expensive, especially in the manufacture of cube sugar, and the one objected to by certain consumers as unsanitary.

The object of the present invention is to generally improve and simplify the packing operation of cube sugar; to improve sanitary conditions by eliminating hand packing, and further, to materially decrease the cost of the packing operation.

One form which my cube sugar packing device may assume is exemplified in the following description and illustrated in the accompanying drawings, in which—

Fig. 1 is a perspective view of the packing device.

Fig. 2 is a side elevation partially in section, said side elevation showing a carton partially packed and the packing device positioned therein and depositing a layer of cube sugar.

Fig. 3 is a plan view of a sugar drying tray; this view showing the sugar as it is deposited by the mold, and said view also showing a portion of the sugar assembled for removal by the packing device.

Referring to the drawings in detail, and particularly to Fig. 1, A indicates a base plate at each end of which is mounted a gripping plate; these gripping plates being indicated at 2 and 3. Disposed at each end of the base plate are pairs of bearing members as indicated at 4 and 5. Secured to the gripping plate 2 and extending through the bearing members 4 are combined guide and supporting rods 6, and similarly secured to the gripping plate 3 and extending through the bearings 5 are combined guide and supporting rods 7. Centrally secured to the base plate A is a bearing bracket 8, and extending vertically and upwardly from the same is a tube 9 which terminates in a handle 10. Formed in each side of the tube is a slot as indicated at 11 and extending therethrough is a pair of gripping levers 12 and 13. These levers are pivotally supported within the tube as indicated at 14. They are then extended upwardly in substantial parallelism with the handle 10 and finally terminate in hook-shaped extensions such as shown at 15 and 15^a. The lower end of the gripping lever 13 is extended as shown at 13^a. This extension is connected with the gripping plate 2 through means of a link 16. The other gripping lever 12 is similarly extended as shown at 12^a and it is connected with the gripping plate 3 through means of a link 17; the links 16 and 17 being pivotally connected to the respective gripping plates and similarly to the gripping lever extensions 12^a and 13^a.

Disposed between the gripping levers 12 and 13 is a spring 18. This spring normally forces the gripping levers in an outward direction and as the extensions 12^a and 13^a cross each other they will similarly assume a separated position. The movement of the extensions 12^a and 13^a is transmitted through the links 16 and 17 to separate the gripping plates 2 and 3 or, in other words, to maintain them spaced with relation to the ends of the base plate A. If it is desired to bring the gripping plates together or, in other words, to move them inwardly towards the ends of the base plate, it is only necessary to grasp the levers 12 and 13 and to press them inwardly towards each other. This movement is transmitted through the extensions 12^a and 13^a and the links 16 and 17, and the gripping plates 2 and 3 are thus pulled toward each other. Again, if

the gripping levers 12 and 13 are released, the gripping plates 2 and 3 will automatically expand and separate as the pressure of the spring 18 will automatically transmit and insure such movement.

Disposed below the base plate A is a pusher plate B. This plate is provided with a pair of upwardly extending rod-like extensions 20. These rods pass through the base plate and the bearing bracket 8, and they are secured to a collar 21 which is slidably mounted on the tube 9. A pair of springs is interposed between the bearing bracket 8 and the collar 21, and the collar 21, together with the pusher plate B, is thus normally maintained in raised position, and lowering of the pusher plate is only obtained by manual operation; that is, the collar 21 must be pushed downwardly when it is desired to lower the pusher plate, the downward movement of the collar 21 being transmitted through the rods 20 to depress the pusher plate.

The device so far illustrated will be referred as a packing device and as stated in the preamble is particularly intended for the handling of cube sugar. It is essential that a device of this kind be kept as clean as possible for sanitary reasons and as this is the case a cover or housing is employed as shown at C in Fig. 2. This housing encloses the bearing bracket 8, the links 16 and 17, the bearings 4 and 5, and the guide rods 6 and 7. This mechanism may therefore be lubricated if desired and as it is entirely enclosed there is no danger of soiling or in any way contaminating the sugar to be handled.

For the purpose of illustrating the operation of the packing device, reference is made to Figs. 2 and 3. It was previously stated that the cube sugar during its latter stages of manufacture is passed through a molding machine; the sugar when molded being deposited on drying trays which in reality are nothing more or less than large flat, rectangular shaped iron plates such as shown at D in Fig. 3. These plates are placed in drying ovens and when the cubes are thoroughly dry they are transferred to the packing rooms, where girls pick up the sugar lumps and place them in row formation in cartons. It is this particular step in the manufacture and packing of cube sugar which is objected to by certain consumers as they consider it unsanitary, due to the fact that each individual lump is handled. The present invention entirely overcomes this objection and furthermore reduces the cost of the packing operation. It also materially speeds the operation thereof and simplifies the same. The sugar lumps or cubes when deposited on the drying tray or plate D assume the position shown in Fig. 3, that is, each lump is separated. Therefore to permit the lumps to be readily handled by the packing device here illustrated, the girl or other operator handling the same will only grasp a straight edge or rule and force the cubes together as shown at E in Fig. 3. In this instance the carton is of such size that seven cubes will fill the width of the carton and fifteen cubes the length of the carton. The dotted lines shown at 30, 31, 32 and 33 show the divisions between each group of cubes, which is seven cubes wide and fifteen cubes long. For instance, after the packer has assembled one group she will next insert the straight edge on the dotted line indicated at 30 and move it in the direction of arrow *a*. This will force the cubes together to form the width of the pack. The ruler may next be placed on the tray, on the line indicated at 33, and moved in the direction of arrow *b*. This will force the cubes together along the length of the pack and they will thus assume an assembled and contacting position as shown at E. This may be repeated until all the cubes are assembled in groups. The operator then grasps the packing device by means of the gripping levers and lowers it over a group of assembled sugar. The operator then presses the gripping levers together and as such forces the gripping plates 2 and 3 together. These plates will thus forcibly engage the end rows of an assembled group of cubes and the whole layer may thus be picked up at one time and deposited in the carton shown at F in Fig. 2. When the packing device has been placed in the carton the operator merely releases the pressure on the gripping levers and at the same time pushes downwardly on the collar 21. This forces the whole layer of sugar downwardly and out from between the gripping plates 2 and 3, and the packing device can thus be lifted out of the carton so as to grip a new layer. The operation is repeated again and again until the carton is packed, and as a whole layer is inserted during each operation, it is obvious that a carton is packed in a short time when comparison is made with hand packing, thus reducing the cost of the pack. It will further be noted that the sugar does not come in contact with the packer and as such is the case sanitary conditions are maintained as there is no necessity for the packer to even touch a single cube.

While the present invention is described as being employed in connection with the packing of cube sugar, it is obvious that it may be employed for other similar uses and it should therefore not be limited thereto. I also wish it understood that various changes in form and proportion may be resorted to within the scope of the appended claims, and that the materials and finish of the several parts employed may be such as the experience and judgment of the manufacturer may dictate or various uses may demand.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. A device of the character described comprising a base plate, a pair of gripping plates mounted thereon, means for opening and closing the plates in unison, and a pusher plate disposed between the gripping plates.

2. A device of the character described comprising a base plate, a pair of gripping plates mounted thereon, means for opening and closing the plates in unison, a pusher plate disposed between the gripping plates, and means for operating the pusher plate independent of the gripping plates.

3. A device of the character described comprising a base plate, a pair of gripping plates one at each end thereof, manually operated means for imparting a longitudinal movement to the gripping plates in unison to and away from each other, a pusher plate disposed below the base plate and between the gripping plates, means for automatically holding the pusher plate in a normal raised position, and other means for manually depressing the pusher plate.

4. A device of the character described comprising a base plate, a pair of gripping plates one at each end thereof, a handle on the base plate, a pair of pivotally mounted gripping levers on the handle, means for transmitting movement from said levers to open and close the gripping plates, a pusher plate disposed below the base plate and between the gripping plates, means for automatically holding the pusher plate in a normally raised position, and other means for manually depressing the pusher plate.

5. A device of the character described comprising a base plate, a pair of gripping plates one at each end thereof, a handle on the base plate, a pair of pivotally mounted gripping levers on the handle, means for transmitting movement from said levers to close the gripping plates, means for automatically opening the gripping plates, a pusher plate disposed below the base plate and between the gripping plates, means for automatically holding the pusher plate in a normally raised position, and other means for manually depressing the pusher plate.

6. A device of the character described comprising a base plate, a pair of gripping plates one at each end thereof, a handle on the base plate, a pair of pivotally mounted gripping levers on the handle, means for transmitting movement from said gripping levers to open the gripping plates, spring actuated means for separating the gripping plates, a pusher plate disposed below the base plate and between the gripping plates, spring means normally supporting the pusher plate in a raised position, and a collar through which movement may be manually transmitted to lower the pusher plate.

HENRY DIPPEL.