To all whom it may concern:

Be it known that I, ELZAH MORAINE, a citizen of the United States, residing at Guthrie Center, in the county of Guthrie, State of Iowa, have invented certain new and useful Improvements in Automatic Sugar Sackers, of which the following is a description, reference being had to the accompanying drawing, and to the figures of reference marked thereon.

This invention relates to devices for storing and sucking sugar.

One of the objects of the invention is to provide a sanitary device for quickly and conveniently filling sacks or other receptacles with sugar or the like.

Another object of this invention resides in providing a cabinet enclosing the sugar bin, which bin is adapted to be raised into the upper portion of the cabinet so that receptacles can be placed on a platform below the bin for filling, and is adapted to be lowered into the base of the cabinet so that the bin can be refilled, the construction being such that the platform supporting the receptacles to be filled is closed to the base of the bin during receptacle filling, and also swings out of the way when the bin is lowered into refilling position.

Another feature of the invention resides in a weighing device located on the cabinet and constructed and arranged so that the bin can be connected to or disconnected therefrom in order to weigh the contents of the bin.

These and other objects will in part be obvious and will in part be hereinafter more fully described.

Referring now more particularly to the accompanying drawings—Figure 1 is a front elevation of my device; Fig. 2 is a side view thereof; Fig. 3 is a side cross section showing the bin in lowered position in dotted lines; Fig. 4 is a plan view of the device; Fig. 5 is an enlarged sectional view of the closure for the nozzle of the bin; Fig. 6 is a plan view of the nozzle shutter controlling mechanism; and Fig. 7 is a section taken on the line 7—7 of Fig. 5.

Referring now in detail to the drawings, the device comprises a cabinet made of wood or sheet metal and includes a lower or base portion 1 and an upper tower 2. The base portion 1 is large enough to permit the tilting of the bin forwardly as shown in Fig. 3 in order to facilitate its filling. The tower of the bin is of such dimensions as to permit the bin to be substantially elevated so that the bag or other receptacle can be placed thereunder when it is desired to fill the same. Preferably the base of the bin projects forwardly as at 3 to provide a sort of a shelf or platform. The front of the cabinet just above this platform 3 is left open as at 4 in order to permit the sack or receptacles to be inserted under the bin for filling. A suitable supporting plate or platform 5 is provided which is adapted to close the upper portion of the base 1 and to support the receptacles immediately beneath the bin during the filling operation. Any desired type of closure may be utilized, but the preferred arrangement is shown clearly in Fig. 3, wherein the support 5 is hinged as at 6 to the forward upper portion of the base, the construction being such that this support 5 may be swung downwardly to an out-of-the-way position as shown in dotted lines in Fig. 3.

The bin 7 may of any desired shape to accommodate itself to the general cross sectional outline of the bin. At its lower end it is provided with a nozzle 8, in the throat of which is located an agitator 9 for loosening the lumps of sugar, controlled by a suitable handle 10. This nozzle 8 has formed therein a slideway 11 which is provided with a lateral extension 12 for supporting the outer end of the slide 13. This slide 13 controls the throat or opening 14 of the nozzle. The outer end of the slide is provided with rack teeth 15 which mesh with a gear 16 on a shaft 17 carried by suitable bearings 18 mounted on the nozzle of the bin. A crank handle 19 enables the operator to run the slide 13 in or out to cut off the discharge aperture 14 of the nozzle of the bin when it is desired to prevent the further discharge of sugar. The bin is provided on its sides with spaced lugs 20 and 21 which are adapted to run in guideways formed by tracks 22 arranged on opposite sides of the bin. The lowermost portion of the track as at 23 provides in connection with the lowermost lug 21, a stop, to prevent further lowering of the bin. A similar construction may be arranged at the top of the track, if desired. Adjacent its base portion, the track is cut away as at 24 so that
the uppermost lug 20 can pass therethrough to permit the forward tilting of the bin as shown in dotted lines in Fig. 3. Suitable mechanism is provided for raising and lowering the bin, and to this end, the upper portion thereof is provided with a suitable lug 24 on each side of which is connected a cable 25 passing over pulleys 26, 26' carried by the top of the bin and arranged at each end thereof.

The pulley 26' is preferably a double pulley to receive the cable coming from the pulley arranged on the opposite side of the bin. These two cables then pass over the double pulley 26' and thence downwardly to a double windlass 27 arranged on the side of the bin near the base. This double windlass is in turn driven by a gear 28 meshing with a smaller gear 29 operated by a crank handle 30. A suitable hand controlled escape mechanism 31 is provided for controlling the operation of this windlass.

The bin in its raising and lowering movements is adapted to control the operation of the swinging platform 5. To this end, the cable 32 is connected as at 33 to the platform 5, and in turn is connected as at 34 to the lower portion of the bin nozzle 8, so that when the bin is raised, the platform 5 is likewise raised. A suitable latch is also provided for holding the platform 5 in its raised position. To this end, the latch 35 is pivoted as at 36 to the back of the cabinet, the lower portion of the latch having a forwardly projecting tongue 37 which engages under the rear of the platform 5, the back of the cabinet being suitably apertured to permit the tongue 37 to pass therethrough. A spring 38 holds this latch in forward position. If desired, the latch may be provided with a cam surface 39 so that when the bin is lowered, the rear wall of the bin will wipe against this cam surface and move the latch rearwardly to disengage it from the platform 5 whereby the platform will fall of its own weight to downward position or will be positively forced downwardly by the nozzle of the bin. In either event, the platform will swing to the out-of-the-way position so that the bin can be lowered into the base and tipped forwardly, in which position, the upper portion of the bin will be inclined forwardly so that it can be filled quite easily.

It is obvious that any type of cover may be provided for the outer portion of the bin. On the raising of the bin, the cable 32 will bring the platform 5 back into closing position.

Any desired type of means may be provided for weighing the contents of this bin. To this end, the upper front part of the cabinet is provided with any suitable scale 40, and the upper portion of the tower is provided with suitable mechanism whereby the bin may be connected to the weighing lever of the scale. In the construction illustrated, a suitable cross frame 41, 42 is provided, which cross frame has rearwardly extending side members 43 and 44. The rear end of each being provided with a toe 45 adapted to freely rest in brackets 46 attached to the back of the cabinet tower. This bracket constitutes a pivotal point about which the cross frame may swing. This cross frame is provided at an intermediate point with a pivoted hook 47 pivoted as at the point 48 to the cross frame and a downwardly depending arm 49 is rigidly connected to the pivotal point 48. A rod 50 connects to the lower portion of this arm 49, the rod 50 passing through the front of the cabinet where it is provided with a handle 51. When the handle is pulled forwardly, the arm 49 is swung forwardly 55 which in turn swings the hook 47 about its pivot 48 to engage under the uppermost lug 20 of the bin 7, provided the bin is raised in its uppermost position. The bin is then lowered so that the weight of the bin is carried by the hook 47 and hence it will be seen that the weight of the bin is thrown upon the cross frame 41, 42. This cross frame is provided with a suitable connection 52 to the control lever 53 of the weighing scale so that the downward tipping of the cross frame will give the control 53 a proportional movement to actuate the scale. When it is desired to take the weight of the bin off the scale mechanism, the bin is raised to uppermost position and the handle 51 is actuated to throw the hook 47 rearwardly.

It will be obvious that with this type of device, the sugar can be handled in the most convenient way possible and with a maximum amount of sanitation, inasmuch as the enclosing cabinet keeps out all dust and dirt. At the same time, the filled bin when raised to its uppermost position provides a means for discharging just the amount of sugar required into the receptacle located below the same. The provision of the weighing scale permits the sugar to be conveniently and quickly weighed before the filling operation.

It is manifest that many of the details of construction may be altered, and that the device illustrated is not to be limited to such exact construction, but may be varied within the scope of the appended claims.

Having thus described the invention, what I claim as new and desire to secure by Letters-Patent is:

1. In a device of the class described, the combination of a cabinet, a shiftable bin therein having an upper filling opening and a lower discharge spout, means for moving said bin from an upper discharge position to a lower filling position, a platform carried by and in the path of movement of said bin
for supporting receptacles to be filled from said bin spout, and means operable by the movement of said bin for shifting said platform to permit the travel of said bin.

2. In a device of the class described, the combination of a cabinet having a vertical guideway therein, a bin having lugs operating in said guideway, said bin having an upper-filling opening and a lower discharging spout, means for shifting said bin from an upper discharging position to a lower filling position, said guideway being constructed and arranged to permit the tilting of said bin when in lowered position to facilitate its filling.

3. In a device of the class described, the combination of a cabinet having a forwardly extending open top base portion and a vertically extending tower, a bin movable in said cabinet from said tower into said base portion to permit said bin to discharge in the former position and to be filled in the latter position, a base closing and receptacle supporting plate hinged to said cabinet at the junction of said base and tower and adapted to swing from a horizontal position in which it closes the open top of the cabinet base and supports a receptacle to be filled, to a downward position into the base to permit the lowering of the bin into the base.

4. In a device of the class described, the combination of a cabinet having a tower and a horizontally extending open top base, a bin, means for moving the bin in said cabinet from said tower into said base portion to permit said bin to be filled in its lowered position and to be discharged in its raised position, a lid for said cabinet for closing the open top of said base and for providing a support for receptacles to be filled by the bin when positioned in said tower, a connection between said bin and lid for raising the latter on the raising of the bin, and a latch adapted to lock said lid in closed position, said latch being releasable on the lowering of said bin to permit the lid to swing out of the way on the lowering of the bin.

5. In a device of the class described, the combination of a cabinet having a tower and a horizontally extending open top base, a bin, means for moving the bin in said cabinet from said tower into said base to permit said bin to be filled in its lower position and to discharge in its raised position, a lid arranged in said cabinet, means for operating said lid to close the open top of said base and to provide a support for receptacles to be filled by the bin when said bin is positioned in said tower, and means constructed and arranged to cause said lid to shift on the lowering of said bin whereby said bin may be positioned within said base for filling.

6. In a device of the class described, the combination of a cabinet having a tower, and a base, a bin in said cabinet having an upper filling opening and a lower discharging nozzle, means for raising said bin into said tower to permit the discharge of contents of said bin and for lowering said bin into said base to fill the same, and means for weighing said bin and contents when in raised position.

7. In a device of the class described, a cabinet, a bin therein, means for shifting said bin from raised discharging position to lowered filling position, weighing mechanism carried by said cabinet, and means connecting said bin to said weighing mechanism in raised position for weighing the latter.

In testimony whereof, I affix my signature.

ELZA H. MORaine.