

E. F. VON BORRIES.
 ROTATABLE BIN.
 APPLICATION FILED AUG. 18, 1911.

1,016,911.

Patented Feb. 6, 1912.

3 SHEETS—SHEET 1.

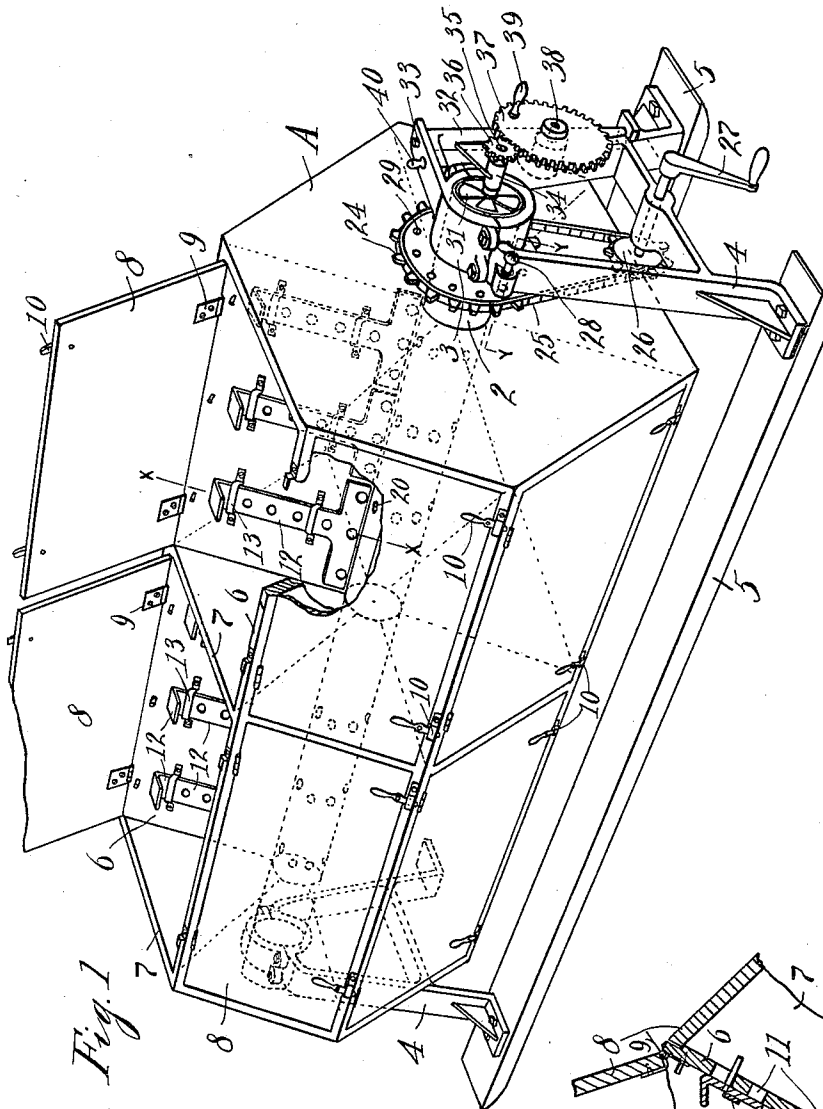


Fig. 1

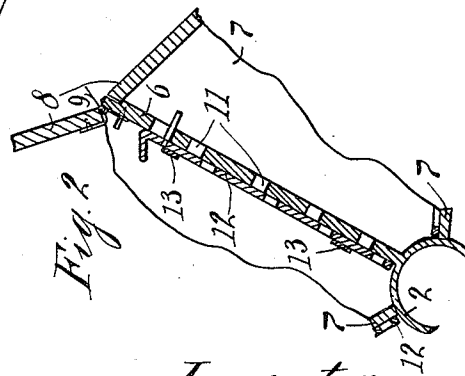


Fig. 2

Witnesses,
 George Voelker
 J. Swanson.

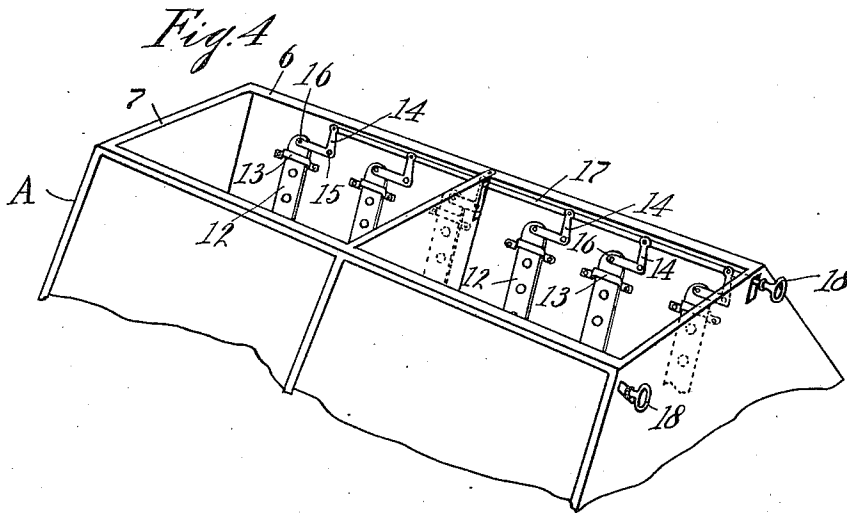
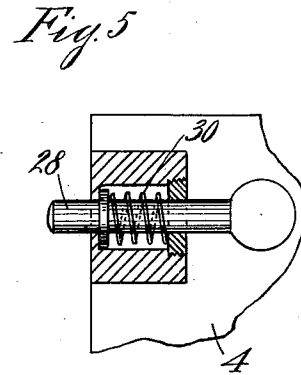
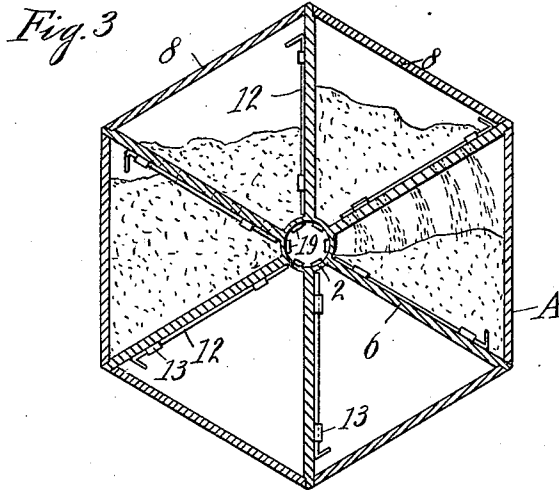
Inventor,
 E. F. von Borries
 by Rothrop & Johnson
 His Attorneys.

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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 6

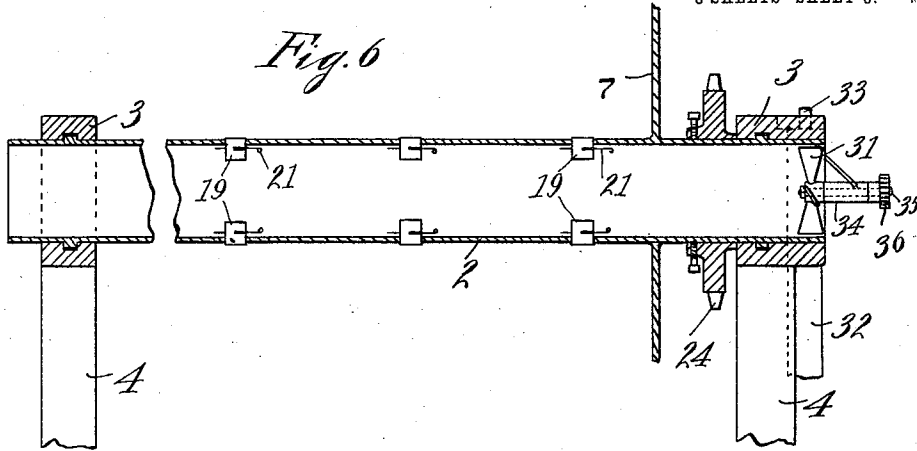


Fig. 7

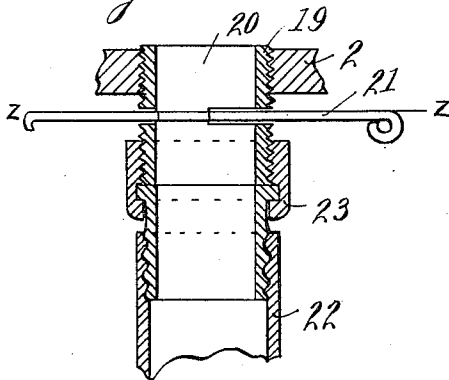


Fig. 8

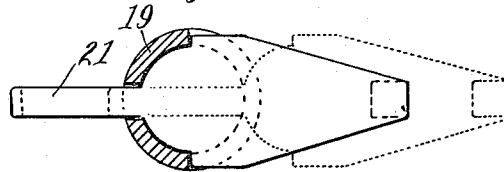


Fig. 10

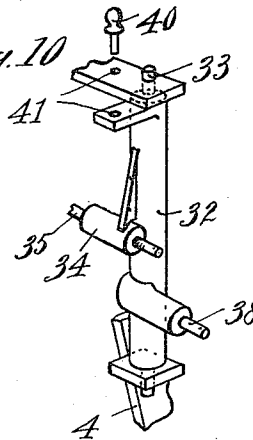
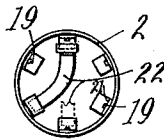


Fig. 9



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 George Voelker
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UNITED STATES PATENT OFFICE.

EHRMANN F. VON BORRIES, OF EAST SHORE PARK, MINNESOTA.

ROTATABLE BIN.

1,016,911.

Specification of Letters Patent.

Patented Feb. 6, 1912.

Application filed August 18, 1911. Serial No. 644,782.

To all whom it may concern:

Be it known that I, EHRMANN F. VON BORRIES, a citizen of the United States, residing at East Shore Park, in the county of Washington and State of Minnesota, have invented certain new and useful Improvements in Rotatable Bins, of which the following is a specification.

My invention relates to improvements in storage bins for grain, its object being particularly to provide a construction of bin in which the stored grain may be shifted to prevent sweating, etc.

To this end the invention consists in the construction, combination, and arrangement of parts hereinafter described and claimed.

In the accompanying drawings forming part of this specification, Figure 1 is a perspective view of my improved construction partly broken away; Fig. 2 is a section on line $x-x$ of Fig. 1; Fig. 3 is a cross section of a bin inside one end wall; Fig. 4 is a perspective view of the top of the bin broken away; Fig. 5 is a section on line $y-y$ of Fig. 1; Fig. 6 is a longitudinal vertical section broken away through the center of the bin; Fig. 7 is a vertical section through a valve plug forming part of my invention; Fig. 8 is a section on line $z-z$ of Fig. 7; Fig. 9 is an end view of a central supporting tube of my improved bin; and Fig. 10 is a detail view of a supporting mechanism for a fan and associated parts.

Referring to the drawings A represents a bin horizontally disposed and including a central tube 2 having journal support 3 at its ends on the standards 4 mounted upon a base 5. As shown the bin is divided into compartments by means of longitudinally extending walls 6 and cross walls 7, each compartment being formed with a closing lid 8 having hinge support 9 to one of the walls 6; cooperating locking means 10 being carried by the free end of the lid and the opposite wall 6. The bin is preferably as shown of polygonal shape, the lids forming the outer walls of the compartments. As shown the side walls 6 of each compartment are each formed with a plurality of openings 11 adapted to be closed by valves 12 slidably supported in the guides 13. In order to operate the valves from outside the bin I may provide a bell crank lever 14 for each valve having fulcrum support 15 upon the wall 6 adjacent to the upper end of the

valve, one end of the bell crank having pivotal connection 16 with the valve, and the opposite ends of the bell cranks being connected by a rod 15 carrying an operating handle 18 outside the bin.

For the purpose of allowing the grain to pass from bin to bin through the central tube 2 I may provide a plurality of plugs 19 secured in openings in the tube 2 constituting the bottoms of the compartments. As shown in Fig. 7 each plug is formed with a central opening 20 adapted to be closed by a valve 21 slidable through a slotted opening in the plug. Any opposed series of plugs may be connected as by means of the tubes 22 carrying threaded collars 23 to screw over the plugs 19. By the use of the proper number of tubes 22 and by opening the valves 21 of the plugs to which the tubes are connected the grain may be allowed to run from an upper compartment 21 to a lower compartment.

To rotate the bin I provide a sprocket wheel 24 supported upon one end of the central pipe 2, said sprocket wheel being connected by a sprocket chain 25 with a sprocket wheel 26 journaled in the framework, the sprocket wheel 26 being connected with an actuating handle 27. To hold the bin locked in adjusted position I provide a pin 28 slidably supported in the framework in position to cooperate with the openings 29 in the sprocket wheel 24, said pin being normally pressed inward by a spring 30. I also may provide, as shown in particular in Figs. 1 and 6, a fan 31 arranged at one end of the tube 2. In order to allow the fan to be turned into and out of the end of the tube I provide a vertical post 32 having pivotal support 33 in the framework. The post supports a sleeve 34 in which is journaled a shaft 35 carrying the fan. The opposite end of the fan shaft carries a pinion 36 which engages with a gear wheel 37 mounted upon a spindle 38 supported by the post. The gear 37 is shown provided with an actuating handle 39. The post 32 is held locked in position holding the fan in the end of the tube by means of a pin 40 adapted to be inserted into cooperating openings 41 in the framework and the post. By removing the pin 40 the post may be turned into position carrying the fan out of the tube to allow access to the interior of the central tube for the purpose of actuating the plug valves 21 and placing tubes 22 into position.

It will be evident that through the medium of the valves 12, or valve 19, and connecting tubes 22 the grain may be allowed to run from any of the other compartments to those below and by rotating the bin to bring different ones of the compartments to uppermost position I am enabled to easily and quickly shift the grain from one compartment to another to prevent the same from sweating. I also secure a bin which is very easy to fill and to empty. In filling it is only necessary to open the lids of the uppermost compartments and pour the grain into said compartments. In emptying the bin the opening of the doors of the lower compartments will allow the grain to be freely discharged therefrom, and the rotating of the bin as rapidly as desired will bring the different compartments into lower or discharging position. I also secure a bin which may easily be transported from place to place for convenience and use.

It will be evident that the features of construction and combination shown and described may be more or less modified without departing from the idea of the invention, which is set out in the following claims.

I claim as my invention:

1. An apparatus of the class described comprising a rotatably supported drum constructed with a plurality of radial chambers and valve controlled openings between said chambers for the purpose set forth.

2. An apparatus of the class described comprising a bin made up of a plurality of compartments, valve controlled openings between said compartments, and means for turning said bin to bring different of its compartments to relatively lower and upper position for the purpose set forth.

3. An apparatus of the class described comprising a horizontally disposed rotatable bin, a plurality of radial longitudinally extending division walls forming intermediate compartments, movable closures for said compartments and valve controlled openings separating said compartments.

4. An apparatus of the class described comprising a horizontally disposed rotatable bin, a plurality of longitudinally extending division walls constituting intermediate compartments, said division walls being formed with openings, controlling valves for said openings and movable exterior closing lids for said compartments.

5. An apparatus of the class described comprising a horizontally disposed rotatable bin, a plurality of radial longitudinally extending division walls constituting intermediate compartments, said division walls being formed with openings connecting said compartments, controlling valves for said openings controllable from the exterior of the bin, and exterior closures for said compartments.

6. An apparatus of the class described comprising a rotatably supported bin made up of a plurality of compartments, openings connecting said compartments, closing valves for said openings, an exterior closure for each compartment, and a slidable locking pin cooperating with said bin to hold the same in adjusted positions.

7. An apparatus of the class described comprising a rotatably supported drum constructed with a central tube and surrounding chambers, valve controlled ports between said chambers, and a fan mounted in one end of said tube.

8. An apparatus of the class described comprising a rotatably supported drum constructed with a central tube and surrounding chambers, valve controlled ports connecting said chambers, a fan mounted in one end of said tube, and means permitting said fan to be turned into and away from the end of said tube.

In testimony whereof I affix my signature in presence of two witnesses.

EHRMANN F. VON BORRIES.

Witnesses:

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ARTHUR P. LOTHROP.