No. 832,290. PATENTED OCT. 2, 1906.

E. BROWN.

STORAGE BIN.

APPLICATION FILED APR. 28, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

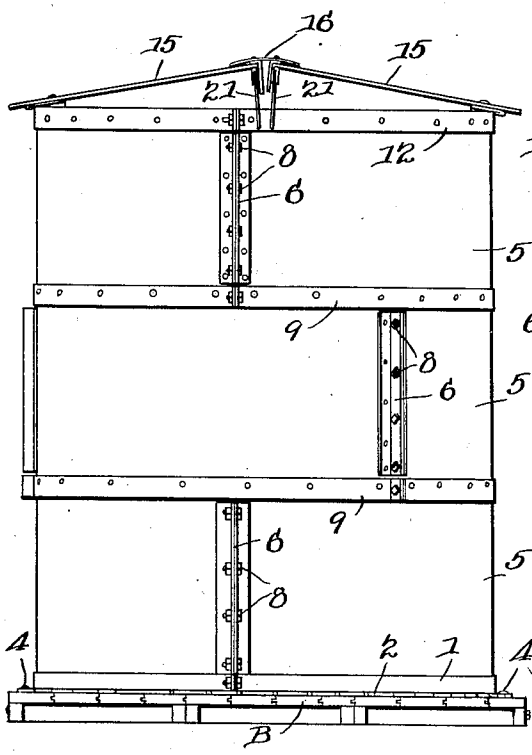


Fig. 2.

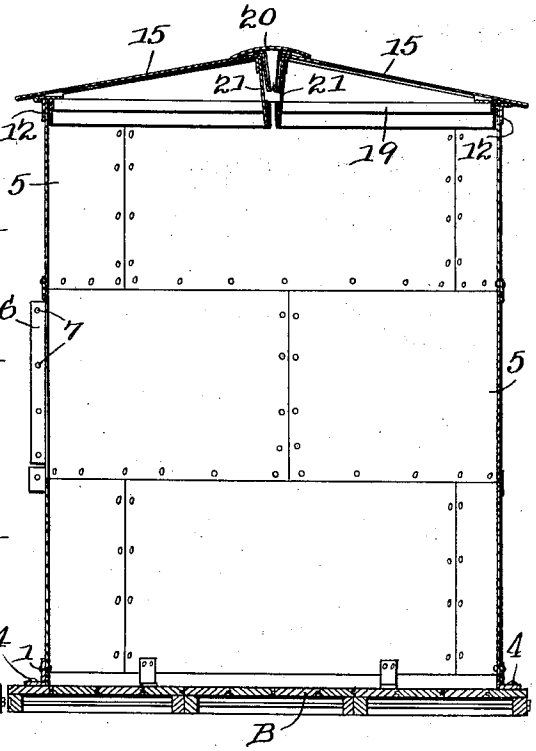
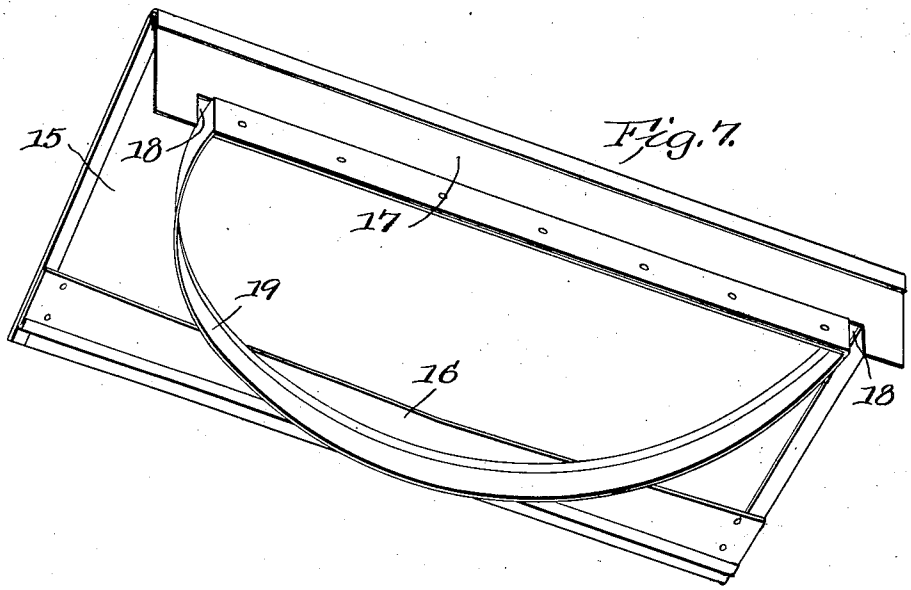


Fig. 7.



WITNESSES:

E. F. Stewart

Wm. Bagger

Eugene Brown, INVENTOR.

By C. A. Snow & Co

ATTORNEYS

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2 SHEETS—SHEET 2.

Fig. 8.

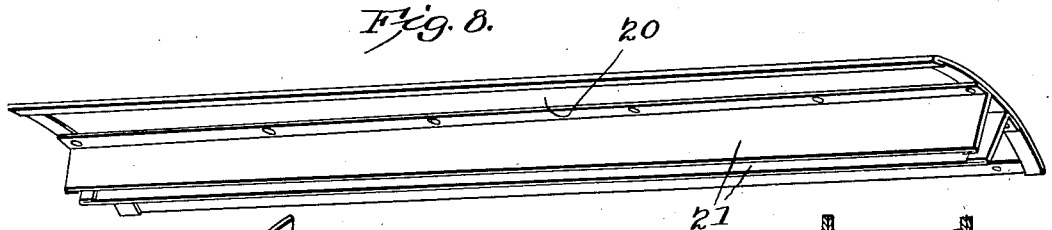


Fig. 5.

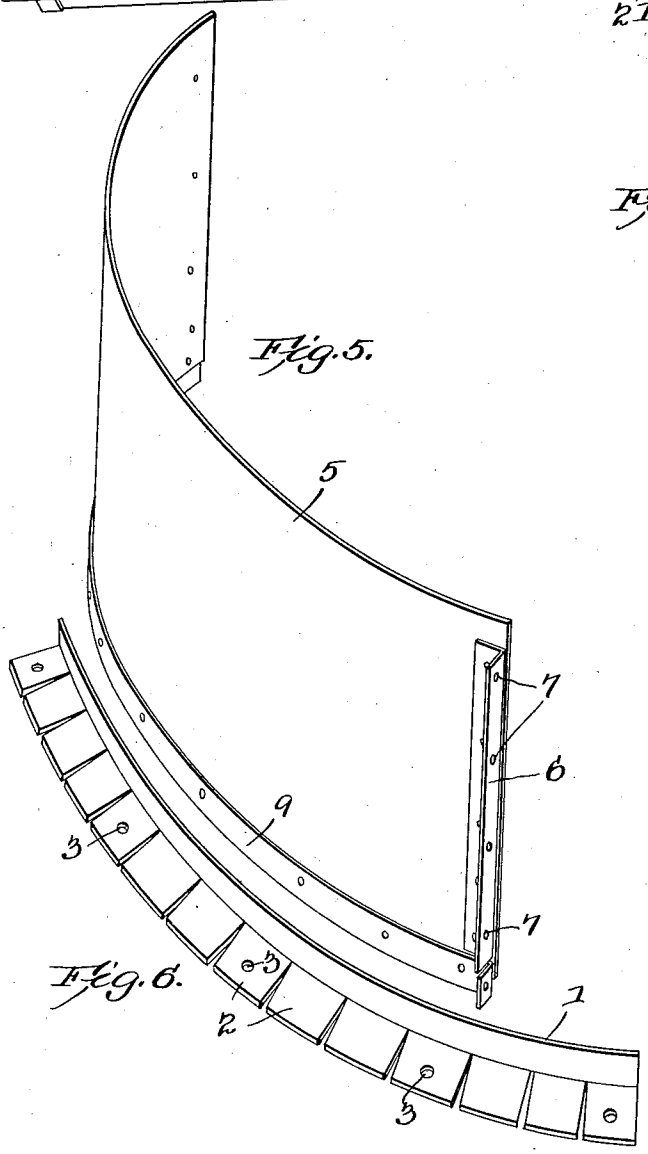
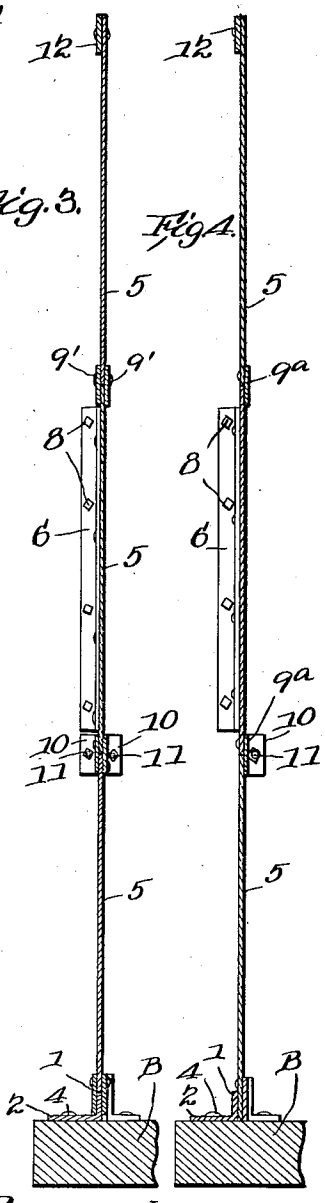


Fig. 6.

Fig. 3.

Fig. 4.



WITNESSES:

E. G. Stewart

Wm. Bagger

Eugene Brown, INVENTOR.

By Cachow & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

EUGENE BROWN, OF COLFAX, WASHINGTON, ASSIGNOR OF ONE-HALF TO GEORGE A. CHAPMAN, WILBUR S. YEARSLEY, AND CHARLES E. SCRIBER, OF COLFAX, WASHINGTON.

STORAGE-BIN.

No. 832,290. Specification of Letters Patent. Patented Oct. 2, 1906.

Application filed April 28, 1906. Serial No. 314,201.

To all whom it may concern:

Be it known that I, EUGENE BROWN, a citizen of the United States, residing at Colfax, in the county of Whitman and State of Washington, have invented a new and useful Storage-Bin, of which the following is a specification.

This invention relates to storage-bins for storing materials in bulk, and it has particular reference to bins used for the storage of grain in bulk.

A special object of the invention is to provide a bin or granary of novel and improved construction which shall be readily portable and which may be conveniently knocked down and set up in any place where it may be desired to use it.

Another object of the invention is to provide a bin of this description which shall be fire, weather, and vermin proof.

Another object of the invention is to provide a bin or granary of this description which shall be constructed mainly of a plurality of similarly-constructed members or units which may be readily and quickly assembled to form a complete structure of the desired dimensions.

Still further objects of the invention are to simplify and improve the general construction and operation of this class of devices.

With these and other ends in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations, and modifications within the scope of the invention may be made when desired.

In the drawings, Figure 1 is a side elevation of a bin or granary constructed in accordance with the principles of the invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a vertical sectional detail view illustrating a modification. Fig. 4 is a vertical sectional detail view illustrating another modification. Fig. 5 is a perspective detail view of one of the plates or units employed in the construction of the bin, as illustrated in Figs. 1 and 2. Fig. 6 is a perspective detail view of a portion of the base-ring. Fig. 7 is a perspective view showing one of the sections of the roof of the bin in an inverted position. Fig. 8 is a perspective detail view of the ridge member of the roof.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

In the construction of the improved bin or granary there is employed a base or floor B, which is preferably constructed of matched lumber, said base being made of such dimensions and in such a manner as to enable it to support such weight as may be imposed thereon. Upon this base there is secured an annular base-ring consisting, preferably, of a vertically-disposed flange 1, of sheet metal, having laterally-extending tongues 2 2 resting upon the base, some of said tongues being provided with apertures 3 for the passage of securing members 4, such as nails or screws. The base-ring is preferably of circular shape, its dimensions being governed by the intended diameter of the bin or granary.

The wall which constitutes the body of the bin or granary proper is preferably of circular or cylindrical shape, and said wall is composed of a plurality of units consisting of rectangular sheet-metal plates 5 5 of suitable dimensions. The wall of the bin is composed of a plurality of tiers of any desired diameter, each tier being composed of a plurality of units placed end to end and suitably connected, as will be presently described. The diameter of the bin will be governed by the number of units employed in the construction of each tier, and the height of the bin will be governed by the number of tiers. In this manner units of a given or standard size may be employed in the construction of a bin or granary of any desired capacity.

The units or plates 5 5 are provided at their ends with angle-plates 6, riveted or otherwise suitably secured thereto and adapted to abut upon each other, said angle-plates being provided with registering apertures, as 7, for the passage of fastening means, such as bolts 8. The angle-plates 6 are preferably placed exteriorly upon the plates or units 5 in order that the fastening devices or con-

necting members may be conveniently accessible from the outside; but no limitation is made in this respect, and circumstances may arise when it would be found advantageous to dispose the angle-plates upon the inner faces of the members or units. The latter are also provided with reinforcing-strips, which, as shown at 9 in Figs. 1 and 5, are preferably riveted or otherwise secured upon the outer faces of the plates or units adjacent to the lower edges thereof and in such a manner as to lap beyond said lower edges. Many modifications, however, are admissible in this respect. To illustrate, in Fig. 3 of the drawings the units or plates 5 have been shown as provided with reinforcing-strips, as 9′, along their lower edges upon their inner and outer faces, and in Fig. 4 reinforcing-strips, as 9^a, have been secured along the lower edges of the units or plates upon their inner faces only. These examples are thought to be sufficient to illustrate that considerable latitude is claimed in regard to the disposition of the reinforcing strips or members and that I do not consider myself as limited to the precise arrangement herein shown and described. It will be further noticed that in Figs. 3 and 4 the reinforcing-strips 9′ and 9^a have been shown as having upturned abutting ends 10, connected by bolts 11. The construction may in this manner be considerably strengthened.

In assembling the units to form a bin a plurality of the units are first assembled to form a tier of the desired diameter which is equal to the diameter of the base-flange, the plates of said bottom tier being preferably disposed with their lower edges abutting upon the upper edge of the flange 1 of the base-ring, said flange being exteriorly or interiorly overlapped by or included between the reinforcing-strips at the lower edges of the units, as shown, respectively, in Figs. 2, 3, and 4. Tier after tier is then added until the desired height is attained, the plates or units being preferably disposed with their edges abutting.

The plates of the uppermost tier are preferably provided with auxiliary reinforcing-strips at their upper edges, as shown at 12 in Figs. 1, 2, 3, and 4.

It will be evident from the foregoing description that under the construction described a bin or granary of the desired capacity may be very easily and quickly constructed from plates or units of a given or standard size, said plates or units being of such a nature that they may be packed together very compactly for storage or shipment.

A roof or cover of special construction is provided for the improved granary, and this roof will be constructed of suitable size to fit the granary for which it is intended. Said roof in its preferred form includes two side members 15 15 and an intermediate or ridge member 16. The body of each of the side members consists of a rectangular plate of a length exceeding the diameter of the bin for which it is intended and having at its inner edge a downturned flange 17, provided with notches 18, adapted to engage the upper edge of the uppermost tier of the bin at points which are approximately diametrically opposite. By making the downturned flanges 17 of sufficient height the side members 15 will be sustained in oppositely-inclined position so as to shed moisture a sufficient distance beyond the vertical walls of the granary to preclude the possibility of water leaking into the latter. Each roof-section 15 is, moreover, provided on its under side with a semicircular flange 19, adapted to fit within the plates of the uppermost tier, thus securing the roof-rections against lateral displacement. The longitudinal slot or aperture between the roof members is covered by a transversely-curved strip 20, having one or more depending flanges, as 21. The ridge member, which consists of this flanged strip, will shed moisture in opposite directions from the slot or aperture between the roof members. The strip 20 is preferably provided with two converging flanges 21, combining to form a wedge, whereby the roof members are forced slightly in opposite directions, thereby insuring a close and tight fit. The roof members, including the side members and the ridge member, may be suitably flanged, beaded, or otherwise reinforced to insure a construction of the requisite strength and ability to resist wear.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of this invention will be readily understood. A bin or granary of the construction herein described may be constructed at a very moderate expense, and it has the advantage of being easily portable in that it may be readily taken apart for transportation and reassembled in any desired locality. The bin or granary may be conveniently filled by means of an ordinary belt-and-cup elevator. When the roof is in position, the contents of the bin will be thoroughly protected from the elements, as well as from the depredations of rats and other vermin.

Having thus described the invention, what is claimed is—

1. A storage-bin comprising a plurality of sheet-metal tiers loosely set one on top of another, and lap-joints at the meeting edges of adjacent tiers arranged to prevent the entrance of moisture.

2. A storage-bin comprising a plurality of tiers loosely set one on top of another and each composed of units rigidly and removably connected at their ends, and overlap-

ping joints at the meeting edges of adjacent tiers for holding the latter in operative relation and preventing the entrance of moisture to the bin.

3. In a metallic storage-bin, a unit consisting of a sheet-metal plate having angle-irons at the ends thereof and provided with a reinforcing-strip adjacent to one edge and having upturned ends.

4. In a metallic storage-bin, a unit consisting of a sheet-metal plate having angle-irons at the ends thereof and provided with a reinforcing-strip secured adjacent to and projecting beyond the edge thereof and having bolt-receiving upturned ends.

5. In a sheet-metal storage-bin, a base, an annular base-ring secured thereon and having an upstanding flange, and a cylindrical sheet-metal structure whose lower edge loosely rests on the upper edge of said flange.

6. In a sheet-metal storage-bin, a cylindrical structure composed of a plurality of tiers, each tier composed of a plurality of plates or units provided at their ends with suitably-connected abutting angle-irons and having reinforcing-strips along their edges; the reinforcing-strips of the units of one tier overlapping the units of an adjacent tier and preventing lateral displacement between the tiers, the lower edge of the units of one tier loosely resting on the upper edge of the adjacent lower tier.

7. In a sheet-metal storage-bin, a cylindrical structure composed of tiers loosely set one on another; each tier having reinforcing-strips overlapping an adjacent tier for preventing relative lateral displacement and the entrance of moisture.

8. In a sheet-metal storage-bin, an annular base-ring including an upstanding flange having lateral supporting-lugs, in combination with a cylindrical sheet-metal structure having reinforcing-strips engaging the upstanding flange to secure the structure against lateral displacement.

9. In a metallic storage-bin, a cylindrical sheet-metal structure, in combination with a roof including two side members provided at their inner edges with depending flanges having notches to engage the upper edge of the cylindrical structure approximately at diametrically opposite points.

10. In a metallic storage-bin, a cylindrical sheet-metal structure, in combination with a roof including two side members provided at their inner edges with depending notched flanges, and having semicircular flanges for interior engagement with the cylindrical structure.

11. In a metallic storage-bin, a cylindrical sheet-metal structure, in combination with a roof including two side members provided at their inner edges with depending notched flanges, and a ridge member having a depending flange for insertion between the flanges of the side members.

12. In a metallic storage-bin, a cylindrical sheet-metal structure, in combination with a roof including two side members provided at their inner edges with depending notched flanges, and a ridge member having converging flanges for insertion between the depending flanges of the side members.

13. In a metallic storage-bin, a cylindrical sheet-metal structure, in combination with a roof including two side members provided at their inner edges with depending notched flanges and having semicircular flanges for interior engagement with the cylindrical structure, and a transversely-curved ridge member adapted to obstruct and to shed moisture from the aperture between the depending flanges of the side members.

14. In a metallic storage-bin, a cylindrical sheet-metal structure, in combination with a roof including two side members provided at their inner edges with depending notched flanges and having semicircular flanges for interior engagement with the cylindrical structure, and a transversely-curved ridge member having converging flanges coöperating to form a wedge for insertion between the depending flanges of the side members.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

EUGENE BROWN.

Witnesses:
JOHN PATTISON,
WM. FIELDS.