B. F. FREELAND.

METAL GRAIN BIN OR CRIB.

APPLICATION FILED MAR. 12, 1910.

1,046,456.

Patented Dec. 10, 1912.

3 SHEETS—SHEET 1.

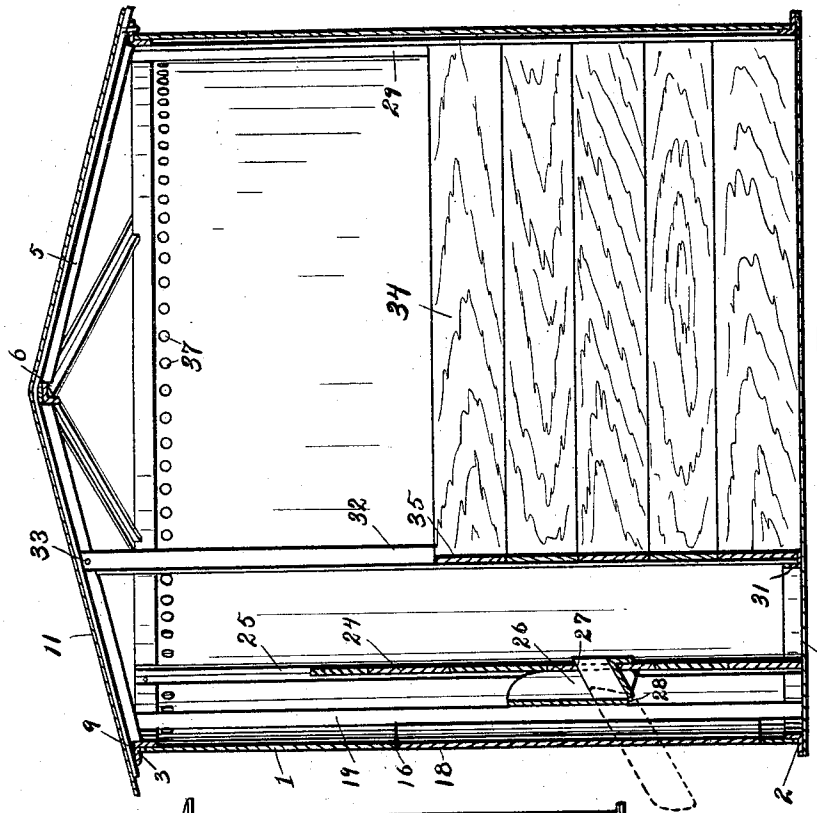

Fig. 2.

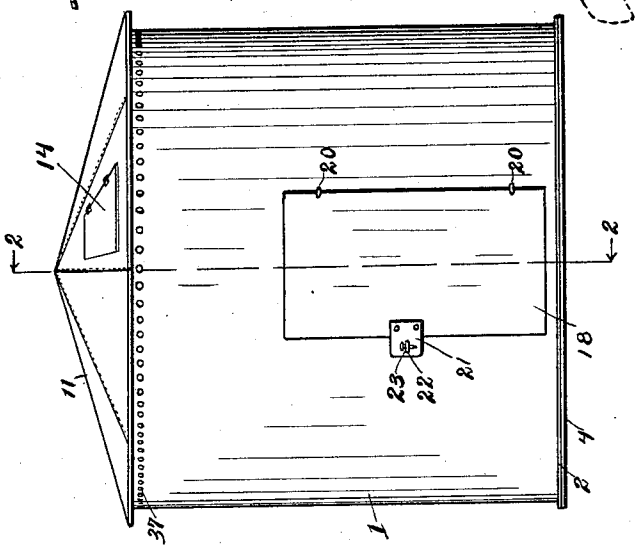

Fig. 1.

Witnesses

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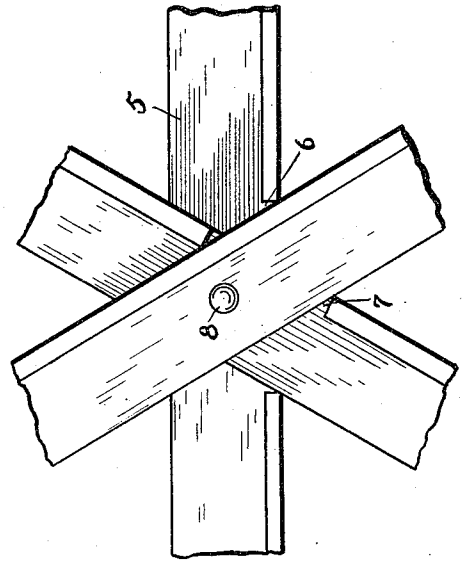

Fig. 4.

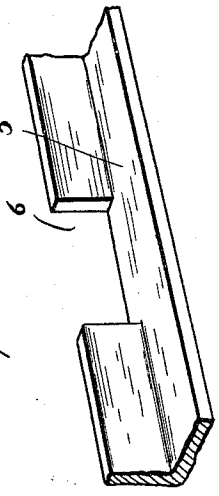

Fig. 5.

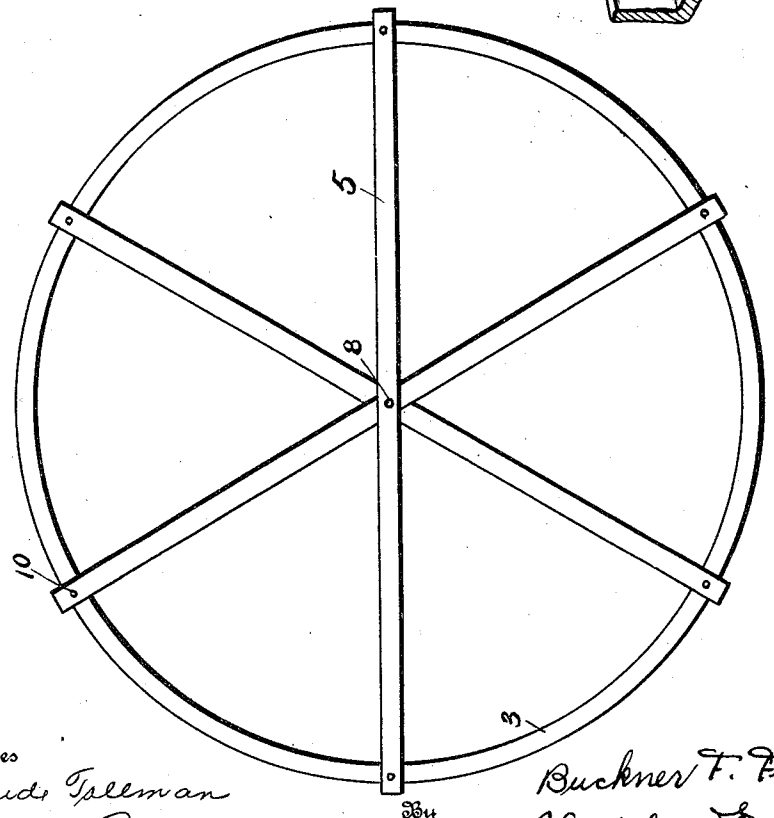

Fig. 3.

Witnesses

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3 SHEETS—SHEET 3.

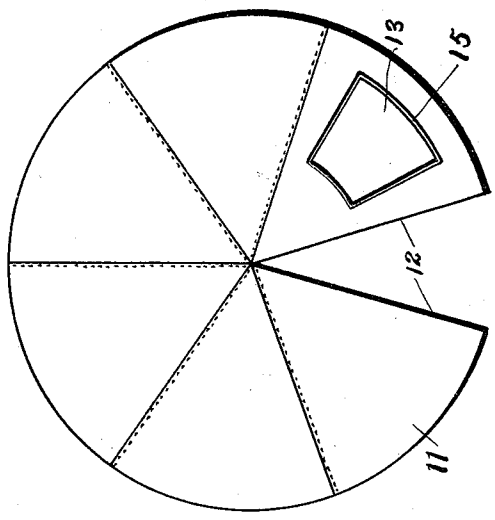

Fig. 7.

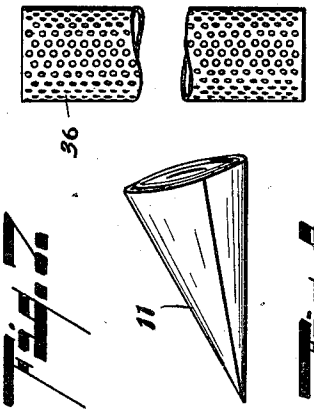

Fig. 8.

Fig. 9.

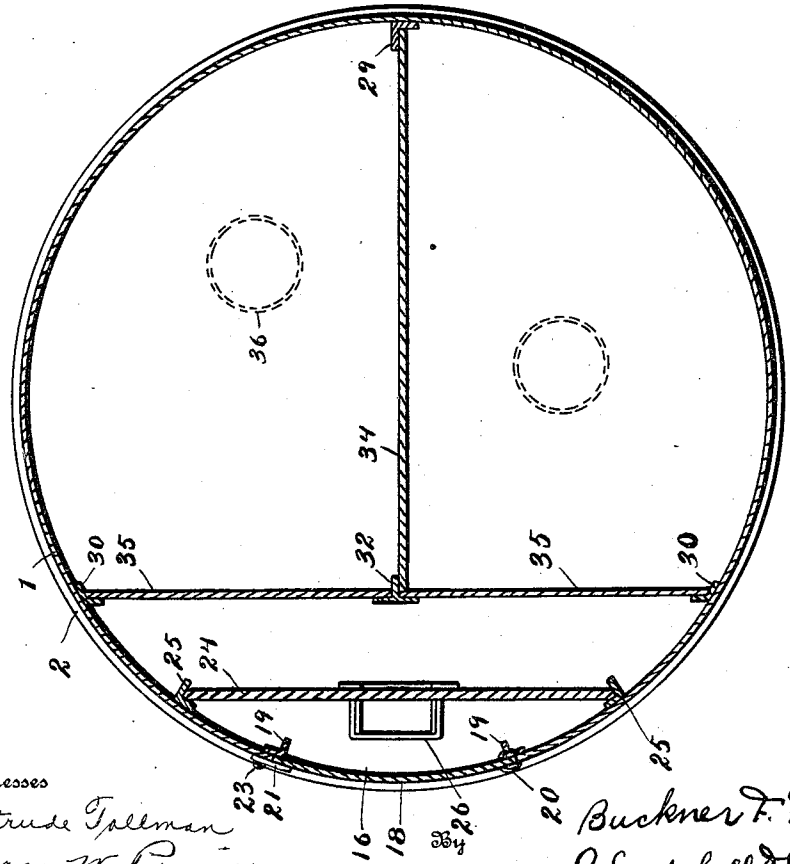

Fig. 6.

Witnesses

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UNITED STATES PATENT OFFICE.

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METAL GRAIN BIN OR CRIB.

1,046,456. Specification of Letters Patent. Patented Dec. 10, 1912.

Application filed March 12, 1910. Serial No. 548,929.

To all whom it may concern:

Be it known that I, BUCKNER F. FREELAND, a citizen of the United States, residing at Middlebury, Indiana, have invented certain new and useful Improvements in Metal Grain Bins or Cribs, of which the following is a specification.

This invention relates to improvements in metal grain bins or cribs.

The main objects of this invention are: First, to provide an improved metal grain bin or crib adapted for corn, wheat or like grains which can be shipped in the knock-down and quickly and easily assembled or set up. Second, to provide in a structure of the class described, an improved roof. Third, to provide in a structure of the class described, an improved door. Fourth, to provide in a structure of the class described, an improved partition structure. Fifth, to provide an improved metal grain bin or crib which is simple, economical and durable in structure and convenient in use.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The structure described constitutes one effective embodiment of my invention. Other embodiments would be readily devised by those skilled in the art.

The invention is clearly defined and pointed out in the claim.

A structure constituting an effective and preferred embodiment of the features of my invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which:

Figure 1 is a front elevation of my improved metal grain bin or crib. Fig. 2 is a vertical central section thereof taken on a line corresponding to line 2—2 of Fig. 1. Fig. 3 is a plan view, the roof being omitted. Fig. 4 is an enlarged inverted detail, showing the arrangement of the rafter pieces. Fig. 5 is a detail perspective of one of the rafter pieces in an inverted position. Fig. 6 is a horizontal cross section. Fig. 7 is a plan of the roof in the flat. Fig. 8 is a perspective of the roof rolled up for shipment. Fig. 9 is a detail side elevation of one of the ventilators.

In the drawings, similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, the wall 1 is preferably cylindrical, and made of sheet metal. The wall is, in practice, made up of suitable strips riveted together. The strips are not here illustrated, as the manner of joining them will be readily understood by those skilled in this art. The wall is provided with a bottom ring 2 and a top ring 3 formed of angle iron, arranged with their angles inwardly, the vertical leg being arranged inside of the wall, and the horizontal leg projecting beyond the same. The bottom 4, which is also preferably of sheet metal, is arranged under and secured to the horizontal leg of the bottom ring 2. The bottom ring, thus arranged, serves as a means for supporting the side walls, attaching the bottom, and as a water deflector.

The rafters 5 are formed of crossed pieces of angle iron arched at the center and arranged with their angles upwardly. The vertical leg of the superimposed rafter pieces are notched to receive those below. In the structure illustrated, there are three rafter pieces, the top rafter piece being notched at 6 to receive the other two rafter pieces, and the intermediate rafter piece being notched at 7 to receive the lower rafter piece. These notches are preferably arranged to keep the parts properly in position. A rivet 8 is also preferably provided. The ends of the vertical legs of the rafter pieces are preferably cut away at 9 to engage the top ring 3 of the wall. Rivets or bolts 10 are arranged through the horizontal legs of the rafter pieces and horizontal leg of the top ring 3 for securing the roof in position.

The roof 11 is preferably formed of triangular shaped pieces riveted together, so that it may be readily coned up to fit the rafters. This roof is, in practice, preferably made in the form illustrated in Fig. 7 at the factory, so that in applying the same it is only necessary to bring the edges 12 together and rivet the same in order to properly conform the roof to the rafters. The roof is provided with an opening 13 for the introduction of the grain, the door 14 being provided for this purpose. The opening 13 is provided with a flange 15 around its edges to deflect the water therefrom. The door opening is preferably

formed by cutting out a section of the wall, the cut out piece being adapted to form the door 18. At each side of the door opening are casing pieces 19, preferably extending from the top to the bottom of the wall and secured to the top and bottom wall rings. These casing pieces are preferably arranged to overlap the door opening and form jambs for the door, see Fig. 6. The door is preferably secured by staple-like hinge members 20, the door being perforated to receive these hinge members. On the door is a securing plate 21, perforated at 22 to receive a staple 23. This forms a simple and effective means for supporting and securing the door. I preferably provide in this connection, an auxiliary closing means for the door opening 16, consisting of a plurality of boards 24, supported by the uprights 25 which are secured to the wall on either side of the door. The auxiliary closure is arranged in a spaced relation to the door to provide a space for the delivery spout 26. This delivery spout is mounted on one of the boards, which is provided with a delivery opening 27. The delivery spout is made up of sections pivoted together at 28, so that when extended it projects from the door opening 16, and when collapsed, the door may be closed, inclosing the spout. It is intended that this auxiliary closure shall be used when the bin is intended for wheat or oats or like grains, which it is desired to draw from the bin through the spout. I also preferably provide in this connection, partitions so that the bin can be used for grains of different kinds, or as a bin or store house. These partitions are formed by providing uprights 29 and 30, which are secured to the walls in a triangularly disposed relation, see Fig. 6. Between the uprights 30 is a horizontally disposed piece 31, to which the lower end of the central upright 32 is secured, its upper end being secured to one of the rafter pieces at 33. The partition boards 34 and 35 are secured to the angle pieces in any suitable manner. If they are inserted as the bins are filled, as is common practice, the grain will serve to hold them in place.

Ventilators 36 are preferably provided for use in my improved bin, the ventilators being foraminated tubes and are adapted to be set about in the bin as may be deemed necessary. The side walls are preferably provided with ventilating openings 37, the openings being located at the upper end of the side wall so as to be protected by the projecting eaves. Where the bin is to be used as a corn crib, foraminated side walls are satisfactory.

It will be obvious that the structure is adapted for use for other purposes than that of a grain bin or crib. By providing the partitions, it may be used partly as a grain bin and partly as a storage for other articles, and when not used as a bin for grain, it is conveniently adapted for other purposes. By arranging the auxiliary closure, as I have illustrated, the grain may be delivered through a spout and the delivery spout is inclosed and locked when the door is closed and latched, thus obviating the necessity for any separate closing means for the grain spout.

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

In a structure of the class described, the combination with the sheet metal wall, having a door opening therein; a sheet metal door fitted into said opening; angle iron top and bottom rings for said wall arranged with their angles facing outwardly and their vertical legs within said wall; a pair of casing strips secured to the said wall along the edges of said door and to the vertical legs of said top and bottom rings, said casing strips being arranged to project beyond the edges of the door opening to provide door jambs, said door being hinged to one of said casing strips.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

BUCKNER F. FREELAND. [L. S.]

Witnesses:
CHAS. L. SWARTZ,
JOSEPH D. MATHER.