

M. V. HOSTETTER.
KNOCKDOWN BIN OR TANK.
APPLICATION FILED JAN. 3, 1911.

1,024,133.

Patented Apr. 23, 1912.

2 SHEETS-SHEET 1.

Fig. 1.

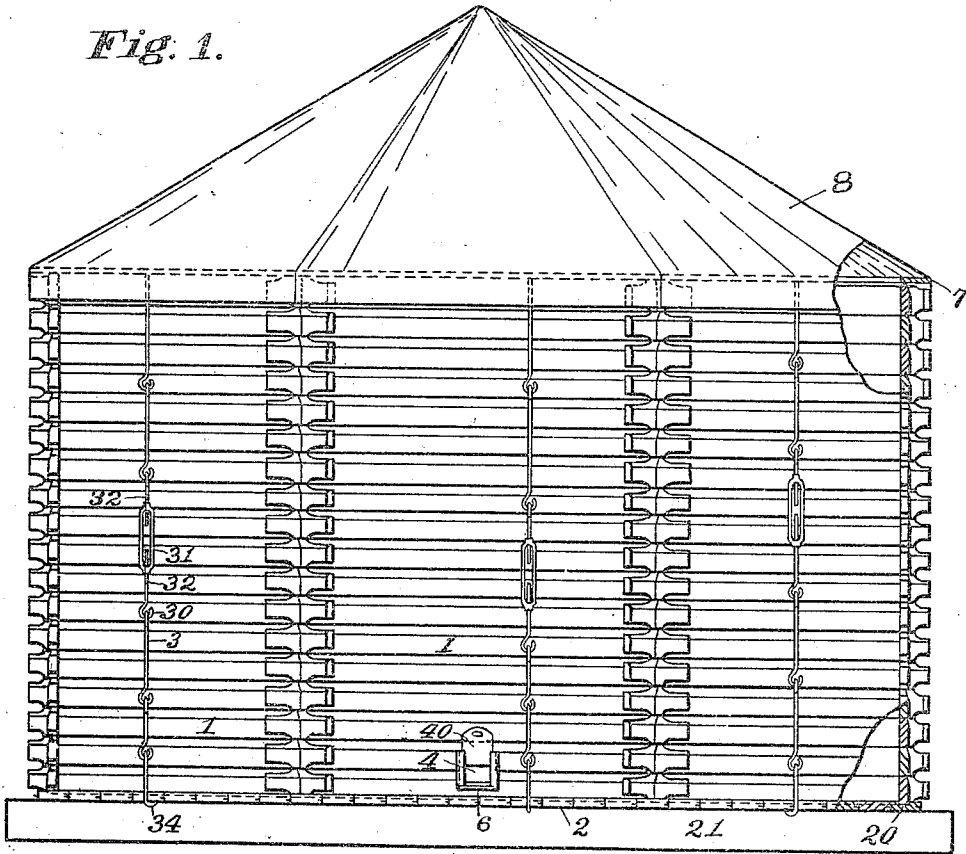
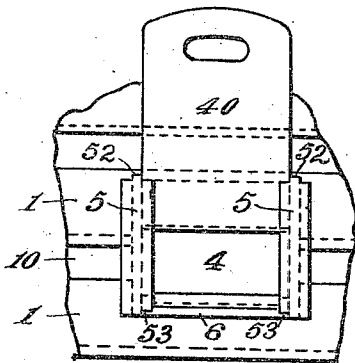


Fig. 7.



WITNESSES.

Charles H. Kueger.
Gott & Young

Fig. 8.

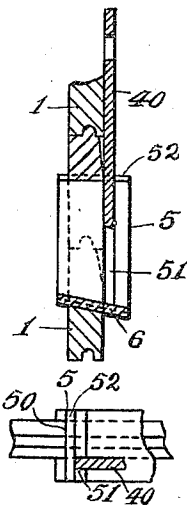
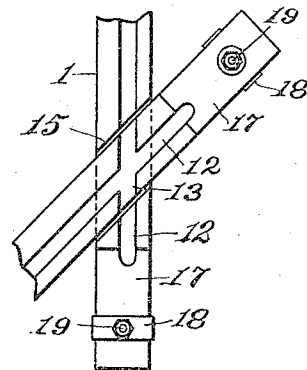


Fig. 9.

Fig. 6.



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2 SHEETS—SHEET 2.

Fig. 2.

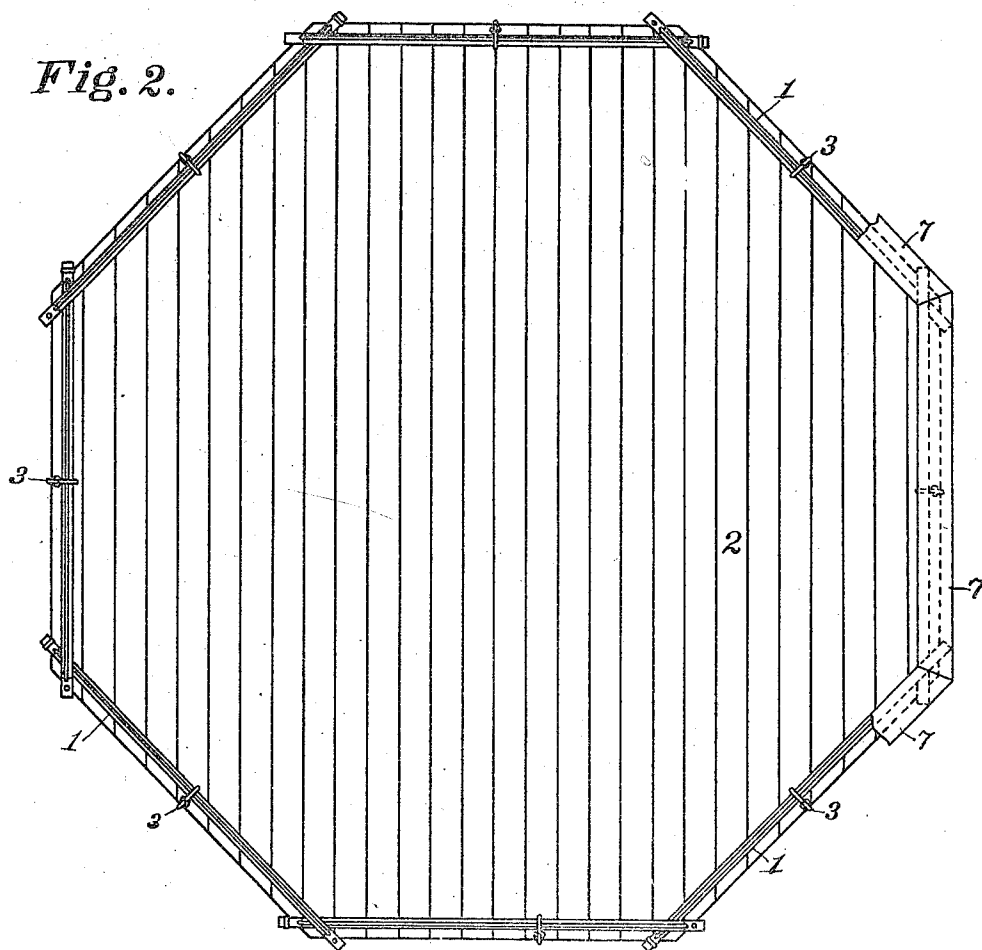


Fig. 3.

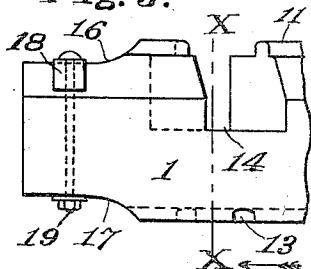


Fig. 5.

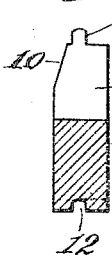
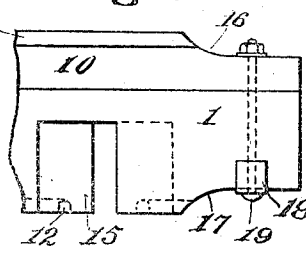


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

MELVIN V. HOSTETTER, OF KING COUNTY, WASHINGTON.

KNOCKDOWN BIN OR TANK.

1,024,133.

Specification of Letters Patent.

Patented Apr. 23, 1913.

Application filed January 3, 1911. Serial No. 600,633.

To all whom it may concern:

Be it known that I, MELVIN V. HOSTETTER, a citizen of the United States, and resident of King county, State of Washington, have invented certain new and useful Improvements in Knockdown Bins or Tanks, of which the following is a specification.

My invention relates to an improvement in bins or tanks, and comprises a knockdown bin adapted for the reception of wheat, or other grains, and for any material which is not of a liquid character and does not demand unusually tight joints.

My invention comprises the novel parts and combinations of parts which will be hereinafter described and particularly pointed out in the claims.

The object of my invention is to provide a bin which may be readily set up and taken down without demanding skilled labor for the work, and one in which the parts are all of such small size and weight that they may be easily handled.

Another object of my invention is to construct the bin out of materials which are low in first cost and which may be relied upon to give a long service.

In the drawings I have shown my invention embodied in the form which is now preferred by me.

Figure 1 is an elevation of a completed crib, two of the corners having the wall broken away to better show its construction. Fig. 2 is a plan view. Fig. 3 is a side view of one end of one of the members of which the wall is composed, and Fig. 4 is a side view showing the opposite end of the same member, from the same side. Fig. 5 is a section upon the line X, X, of Fig. 3. Fig. 6 is a bottom plan view of the joint between two of the wall members, at their point of overlapping, at the corners. Fig. 7 is a front elevation of the chute or gate, and Fig. 8 a section on the center line of the chute. Fig. 9 shows one side of the chute in plan.

I make my bin in the outline of a polygon, preferably as a regular polygon, the sides being built up of boards placed on edge and notched so as to interlock at the corners where they overlap, so that they will be securely held together. I also prefer to have their edges shaped so as to interlock, as by forming them with tongue and groove, so as to make a firm and solid wall, and one which may be built up to whatever height may be desired or needed.

The members which compose the sides are notched at each end, as is shown in Figs. 3 and 4, the two figures representing respectively the construction of opposite ends of the same member. Each end has a groove or notch cut across it down to the middle line of the board. The angle at which this groove or slots extends corresponds with the angle of the corners of the bin. In the bin herein shown the angles at the corners are all 45° , and consequently the angle of the notches or slots are 45° .

The slot or notch 14 at one end of the wall boards, is on one edge of the board, while the notch 15 at the other end of the wall board is on the opposite edge thereof, but are otherwise alike. As a consequence these boards may be built up and interlocked, in tiers, the boards of the same tier being each interlocked with the adjacent boards of the tier. Upon one edge these boards are provided with a groove 12 and upon the opposite edge with a tongue 11, so that the boards of adjacent tiers are interlocked and held in proper position, as well as forming a tight joint between the tiers. Upon that end of the boards in which the notch 14 is in the edge of the board having the tongue, the opposite edge is provided with a supplemental groove 13 to accommodate the tongue of the board in the tier below and in the side next adjacent. This is clearly shown in Figs. 6 and 3.

The projecting ends of the wall boards are preferably slightly cut down or beveled, as shown at 16 and 17, enough to remove the tongue and the walls of the groove. I also prefer to reinforce the ends by a bolt 19 and a clip 18 of metal, thereby lessening the probability of the outer side of the notches from breaking off.

The floor of the bin is preferably composed of tongue-and-grooved lumber, cut to form the shape and size of floor needed, and also preferably grooved near the ends of the boards so as to receive the lower edge of the bottom tier of boards, whereby a tight joint is secured. This groove is shown at 20, where one corner of the wall is broken away.

It may be desired, or necessary at times, to provide some means for holding the walls together securely in a vertical direction. To secure this I have provided clamping or tension rods, which are secured to the floor and hook over the boards of the upper tier and are provided with means for taking up and

bringing a strain upon the walls. As shown these consist of links 3 provided with eyes or hooks 30 adapted to be engaged, the lower link having a hook 34 adapted to hook over the end of a floor board and the upper with a hook adapted to hook over the top board. I also provide a turnbuckle 31 and two threaded sections 32, whereby the whole may be tightened up. These links may be made in sections of different lengths, so that they may be adjusted for different heights of walls. If desired, also, two rods such as the end rods, each provided with a hook 34 on one end and threaded to receive the turnbuckle at the other end, may be used.

When this bin is set up outdoors, it should be provided with a cover. I have herein shown a means for the ready application of a canvas cover. This will be found sufficient where its use partakes of a temporary character. On top of the walls is placed a board 7, of sufficient width to extend out as far as the projecting ends of the wall boards. This may be a one inch board and would not need to be wider than about six inches. It forms a straight bearing for the reception of the canvas and carries the canvas beyond the walls, so that there will be no leakage into the bin. To make it better able to stand rain without leaking, I prefer to provide the wall boards with a bevel 10 on their outer sides next their upper edge. This will prevent the possibility of rain beating into the crack between the boards. I also provide a chute from which grain may be drawn when desired. This is shown in detail in Figs. 7, 8 and 9. In the upper edge of the lower board and the under edge of the board next above it, I cut notches which will register when the boards are put in place. I also provide two blocks 5, alike except that they are rights and lefts. These blocks are made of two inch lumber, and are provided, upon their outer side faces with a groove 50 of a width to fit closely over the end surfaces of the wall boards within the notches provided for the reception of the chute or gate. The length of these blocks is the vertical height of the opening provided in the wall boards, except that a tenon or tongue 52 is provided and a groove for the reception thereof is provided in the upper board, whereby the upper ends of the blocks 5 are prevented from moving inward. I also provide a sill board 6, adapted to lie in the bottom of the chute opening and to project from the outer face of the bin wall, as shown in Fig. 8. The side blocks 5 are provided with a shoulder or chamfer 53, for the reception of the ends of the sill 6, to securely hold it in place, and also to prevent the blocks 5 from being forced inward, or toward each other. The inner or opposed faces of the blocks 5 are provided with a vertically extending

groove 51, adapted to receive the gate 40. These grooves 51 are located just outside the outer plane of the wall of the bin, so that the gate 40 may be raised to discharge grain when desired. The opening 4 for the discharge may be made of any size desired. When a canvas cover is used, a central support therefor must be provided. As this comprises no part of my present invention, I have not herein shown its construction. It may be provided in any manner which happens to be most convenient.

The floor may be put upon any suitable supports which happen to be available. I have shown it as upon timbers 21. This form of bin may be set up in the field, to receive the grain as threshed, or may be placed where its use may be conveniently made permanent. It may be quickly set up by any one, and may be made of any height desired or required to furnish the capacity desired. The boards forming the walls are all of the same shape and size, being interchangeable, except the two which contain the notches which form the chute opening. They are of such substantial character that they are not likely to become broken. They are also small and light and convenient to handle. They may be stacked away, under cover when the bin is not needed, thus prolonging its life. A bin constructed in this manner may be made very tight, in fact may be used successfully as a silo. The only place where there would be any possibility of leakage is at the corner joints, and if these are accurately cut there will be little leakage there, particularly as the tension under which they would be placed when filled, tends to draw these joints tight. By substantially supporting the floor and placing something to serve as a packing in the floor groove which receives the wall boards, this joint may be made water tight.

The material for the bin may be made in the finished form at the mill and shipped ready to set up, thereby avoiding payment of freight upon waste material. When made under factory or mill conditions, where machinery exists for doing this work economically, the cost of shaping the pieces is but little.

What I claim as my invention is:

1. A knock-down bin having walls built in tiers of interlocking tongue and grooved boards, each board having a transverse notch extending from opposite edges at opposite ends half way across the board, the grooved edge of the end which is notched from the tongued edge having a transverse groove adapted to form an extension of the groove in the edge of the board of the same tier which interlocks therewith.

2. A knock-down bin having walls composed of tongue and grooved boards, each having at one end, a transverse notch extend-

ing from the tongued edge half way across
the board and at the other end having a
notch extending from the grooved edge half
way across the board, the grooved edge of
5 the board having an auxiliary transverse
groove extending opposite to and parallel
with the walls of the notch in the tongued
edge and adapted to receive the tongue of a
board in the adjacent tier, the ends of said
10 boards beyond their transverse notches hav-
ing a bolt extending transversely there-
through from edge to edge, and a clip em-
bracing the edge of the board and placed as
a washer upon said bolt at its notched side.
15 3. As an article of manufacture, a tongue
and grooved board having a notch at each
end extending transversely thereof and half

way across the board, said notches extend-
ing from opposite edges at opposite ends,
the grooved edge having an auxiliary groove 20
of like character and dimensions as the main
groove and extending transversely thereof
opposite the notch which extends from the
tongued edge and in position to receive the
tongue of a like board placed above and with 25
its sides in the same planes as those of the
side walls of said notch.

In testimony whereof I have hereunto
affixed my signature at Milton, Washington,
this 27th day of December, 1910.

MELVIN V. HOSTETTER.

Witnesses:

R. W. CULVER,
THOMAS C. HURST.