W. F. WATKINS.

STORAGE BIN.

APPLICATION FILED JUNE 25, 1913.

1,112,952.

Patented Oct. 6, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

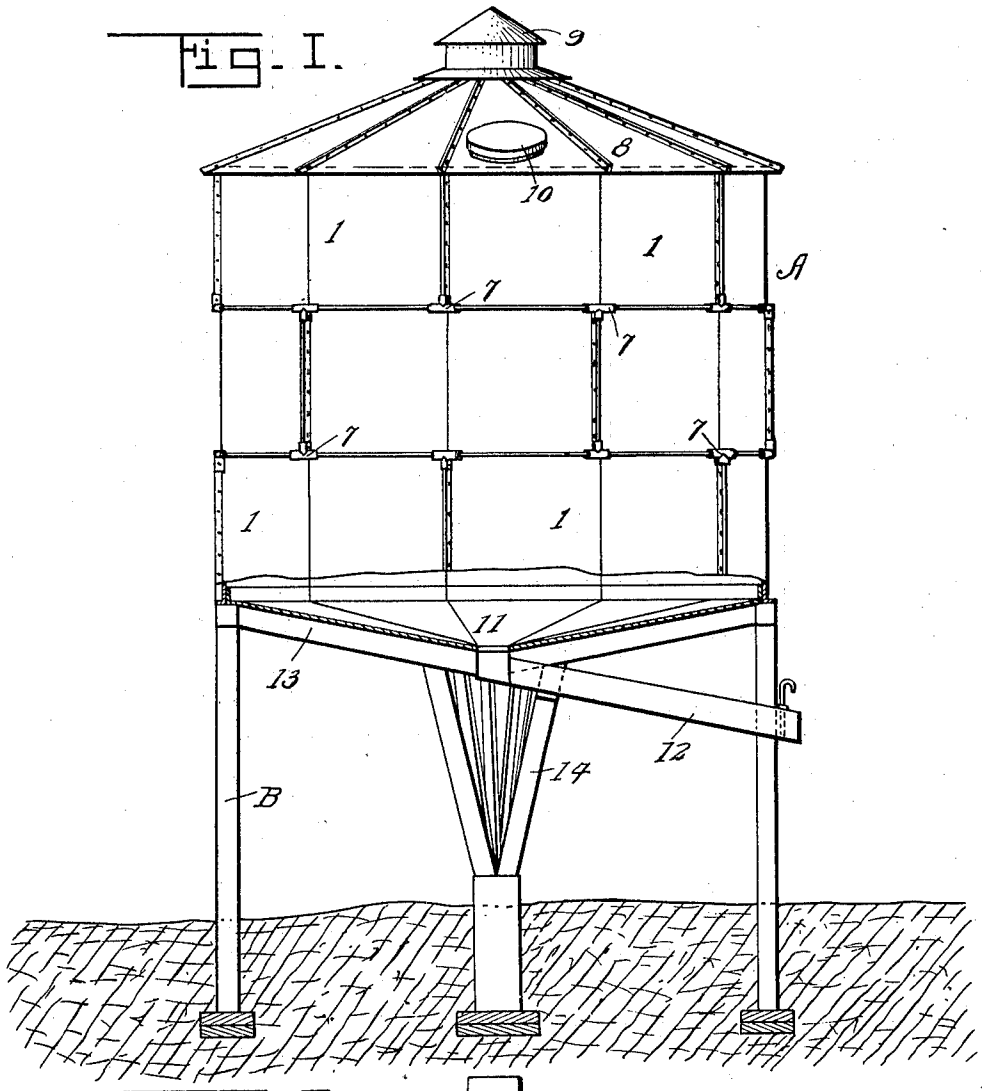
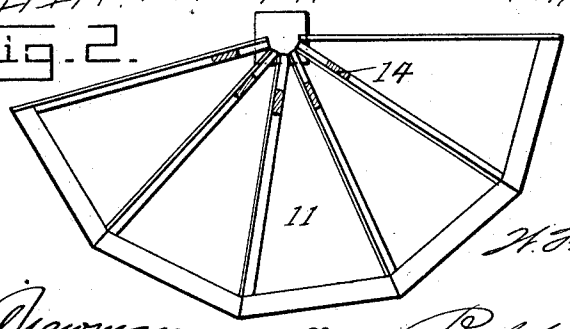


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

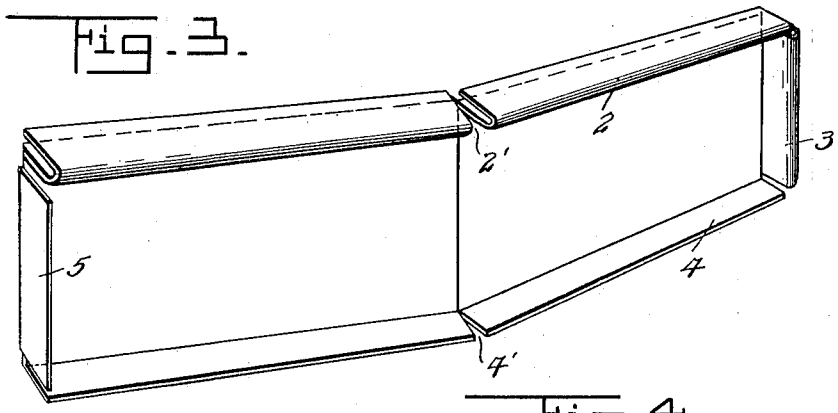


Fig. 4.

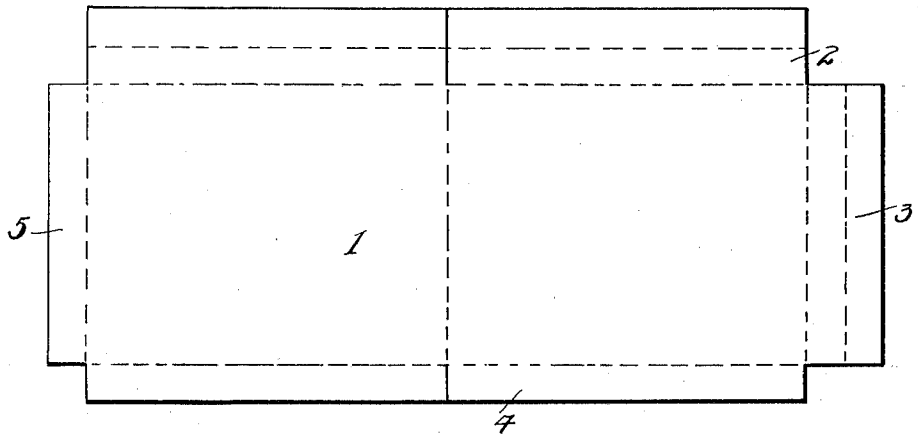


Fig. 5.

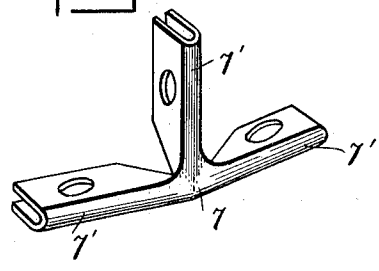
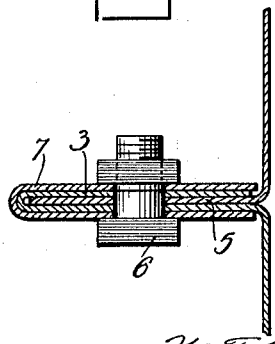


Fig. 6.



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UNITED STATES PATENT OFFICE.

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STORAGE-BIN.

1,112,952. Specification of Letters Patent. **Patented Oct. 6, 1914.**

Application filed June 25, 1913. Serial No. 775,745.

To all whom it may concern:

Be it known that I, WILLIAM F. WATKINS, a citizen of the United States, residing at Spokane, in the county of Spokane and State of Washington, have invented certain new and useful Improvements in Storage-Bins, of which the following is a specification.

The present invention relates to improvements in metallic structures and in particular to such structures comprising a plurality of sectional units each formed so as to cooperate with its adjacent unit whereby the capacity or size of said structure may readily be increased or decreased without necessarily changing the form of the unit.

The main object of my invention is to provide a unit or plate having clamping flanges to receive a tongue of an adjacent plate, each bent intermediate its length to form a many-sided container, said plates being arranged in rows with the plates of one row staggered in relation to the plates of its contiguous row, and angular fastening members being employed to connect the several rows of plates together.

With these and other objects in view, my invention consists of certain combinations, constructions and arrangements of parts, all as hereinafter more fully described, claimed and illustrated in the accompanying drawings, wherein—

Figure 1 illustrates a metallic structure involving the embodiment of my invention. Fig. 2 is a fragmentary, bottom plan of the structure. Fig. 3 is a perspective view of one of the side plates, showing the edge clamping flanges and tongues somewhat exaggerated. Fig. 4 is a plan view of a plate prior to formation of the flanges and tongues. Fig. 5 is a perspective view of a gusset for connecting the rows of plates at their adjoining corners; and Fig. 6 is a sectional view showing more clearly the method of clamping the plates together.

Throughout the following detail description, and on the several figures of the drawings, similar parts are referred to by like reference characters.

In carrying out my invention it is to be understood that the receptacle or structure comprehended by the drawings is designed primarily for the storage of grain and it is desirable that such structures be readily susceptible of enlargement. In order that the capacity or size of the container may be increased or decreased it is essential that the plates or sectional units of which it is composed be of a uniform character, preferably struck from a single die, and capable of being set up quickly. It is again obligatory that the structures be strong as it often occurs in filling the same with grain for storage purposes that said grain is piled against one side as it is discharged from an elevator or threshing machine, and to prevent any tendency to collapse or buckle under weight of the grain the container representing an embodiment of my invention is many-sided and comprises a plurality of plates arranged in horizontal, circumferential rows with the plates of each row staggered in relation to the plates of its contiguous row.

Referring specifically to the drawings, A represents a storage receptacle or bin consisting of a plurality of plates, as will be hereinafter more particularly described, said receptacle being disposed upon the supports B.

In Fig. 4 is shown a side plate 1, it being understood that said plates are of the usual metallic material and of rectangular form, having one longitudnial edge of the same provided with a clamping flange 2. A similar clamping flange 3 is provided at one end, said flanges 2 and 3 being bent outwardly from the body at right angles thereto and back upon themselves so as to be V-shaped in cross section. The other longitudinal edge of the plate 1 is formed with a tongue 4, and the remaining end of the plate with a similar tongue 5, said tongues being also bent outwardly from the body of the plate at right angles thereto.

As most clearly shown in Fig. 3 of the drawings, the clamping flange 2 and the tongue 4 are split at their central portions as indicated at 2′ and 4′, respectively, which permits the plate to be bent transversely. As hereinbefore stated, the side plates 1 are arranged in circumferential rows with the tongues of the adjacent plates inserted between the clamping flanges, bolts 6 or similar fastening members being then passed

through openings in the clamping flanges and tongues so as to rigidly secure said plates together.

As each side plate is arranged to coöperate with end portions of plates in an adjacent row, it is desirable that interlocking means be provided for connecting the plates of one row with another for strengthening the structure, particularly at the bend of said plates. For this purpose I provide an angular interlocking member or gusset 7, which member consists of three arms comprising double clamping flanges 7′, as shown most clearly in Fig. 5 of the drawings. Two of said arms are alined while the third is arranged at right angles intermediate the two just mentioned, whereby the gusset may be positioned with the single arm upon the transverse clamping flange of one row and the alined arms upon the longitudinal flange of a plate in the adjacent row at the bent portion of the latter. Bolts or other fastening members are passed through suitable openings in said arms to secure the interlocking member in position upon the side portions of the receptacle.

As indicated in Figs. 1 and 2 of the drawings, the storage container is provided with a covering consisting of a plurality of metallic plates, as indicated by the numeral 8, each of said plates being provided with clamping flanges and tongues as described with relation to the side plates, with the exception of the reduced end. When connected together by means of suitable fastenings the covering slants so as to form a water shed and the opening at the apex of the covering is covered with a suitable ventilator cap 9. One of the top plates 8 is also formed with an opening over which is positioned a cap 10 whereby the receptacle may be filled in an obvious manner.

The bottom plates 11 are similar in shape and form to the top plates 8 and are connected in like manner so as to constitute a hopper, the opening at the center of said plates communicating with a discharge spout 12 passing beneath the receptacle at an incline. The bottom plates are supported to bear the weight of the grain by means of beams 13, and braces 14 for the central portion of the bottom adequately support any weight which may be placed upon the bottom by grain contained in the storage bin.

As will readily be understood from the foregoing description, a storage container of this character may be very cheaply manufactured from a minimum number of dies, which furthermore facilitates shipping of the receptacle in a "knockdown" condition. If for any reason it is desired to enlarge the capacity or circumference of the container it is only necessary to add a series of side plates and it will be understood, of course, that double the number of top and bottom plates will be employed for this purpose. Since the units are of the same character and form, it is not necessary that they should be in any way changed in the enlarging operation, each plate being used interchangeably at any point, as will be clearly understood from the foregoing description.

In increasing the size of the container as before mentioned, it will be obvious that the ventilating opening at the top is made larger and for this reason the ventilating cap 9 is made sufficiently large to cover the opening in all of its different sizes.

Having thus described the invention, what I claim as new is:—

1. A sectional storage container comprising walls composed of a plurality of units, each unit consisting of a plate formed at its upper edge with a clamping flange and at its lower edge with a locking tongue, said flange and tongue being split intermediate their ends and the plate being bent into angular form at a point in alinement with the splits of the flange and tongue, each unit plate being also provided with locking members at its opposite end, the several units aforesaid being assembled in staggered relation whereby the ends of one unit are arranged opposite the angles at the bent intermediate portion of two adjacent plates, and members uniting the several units together and closing the split portions of the clamping flange and tongue of each plate.

2. A sectional storage container comprising walls composed of a plurality of units, each unit consisting of a plate formed at its upper edge with a U-shaped flange and at its lower edge with an offstanding tongue, said plate being bent intermediate its ends to give the same an angular form and said clamping flange and tongue being split to permit of said bending, the several units aforesaid being assembled by engaging the clamping flange of one unit with the locking tongues of adjacent units, and means uniting the units together at the split points of the clamping flange and tongue of each unit, whereby each unit is not only connected to its adjacent units but reinforced at said split portions.

3. A sectional storage container comprising walls composed of a plurality of units, each unit consisting of a plate formed at its upper edge with a U-shaped flange and at its lower edge with an offstanding tongue, said plate being bent intermediate its ends to give the same an angular form and said clamping flange and tongue being split to permit of said bending, the several units aforesaid being assembled by engaging the clamping flange of one unit with the locking tongues of adjacent units, and

fastening means intermediate the several units aforesaid and comprising a member located at the split portions of the clamping flanges and tongues of said units and secured thereto so as to close said split portions and reinforce each unit at its angular intermediate portion.

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

WILLIAM F. WATKINS.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."