No. 669,693. Patented Mar. 12, 1901.

H. W. HARRY.

KNOCKDOWN TANK OR CISTERN.

(Application filed Oct. 8, 1898.)

(No Model.)

Fig. 1.

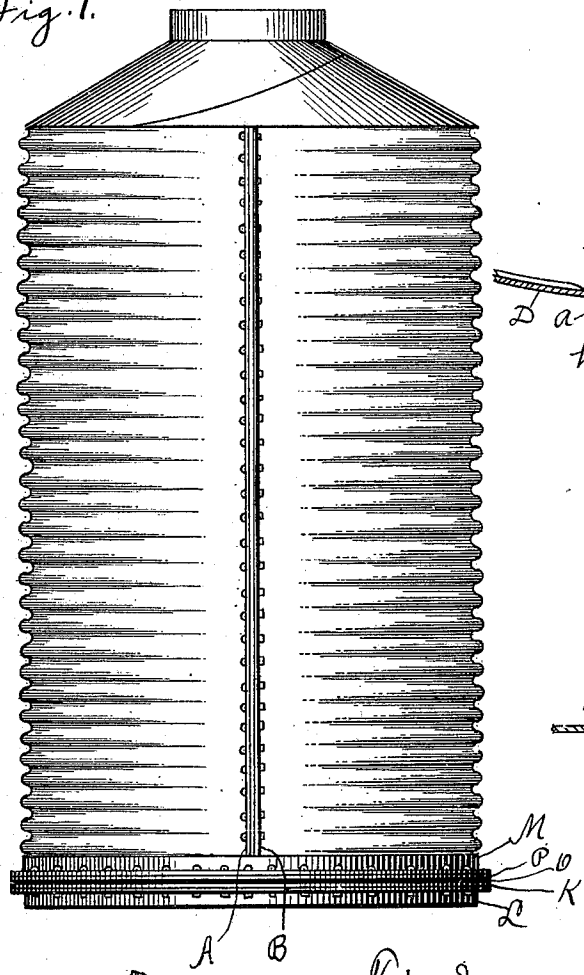


Fig. 2.

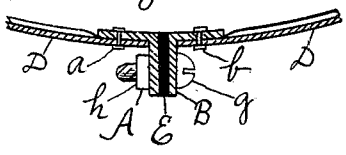


Fig. 4.

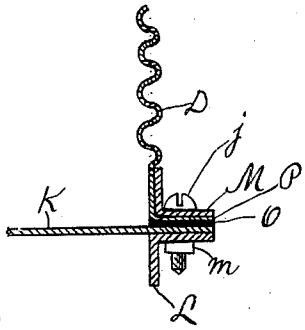


Fig. 3

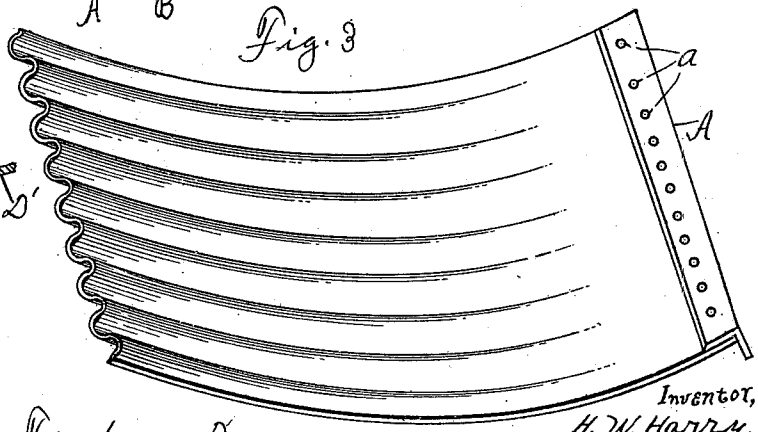


Fig. 5

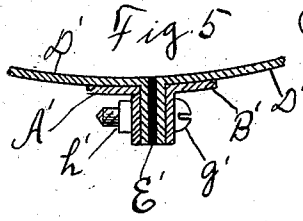
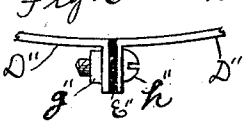


Fig. 6.



WITNESSES:—

J. G. Browning.

B. F. Bouldin

Inventor,

H. W. Harry.

BY

A. L. Jackson,

ATTORNEY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HUGH W. HARRY, OF DALLAS, TEXAS.

KNOCKDOWN TANK OR CISTERN.

SPECIFICATION forming part of Letters Patent No. 669,693, dated March 12, 1901.

Application filed October 8, 1898. Serial No. 693,029. (No model.)

To all whom it may concern.

Be it known that I, HUGH W. HARRY, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented a new and Improved Knockdown Tank or Cistern, of which the following is a specification.

This invention relates to large vessels for holding water, and more particularly to the construction of such vessels; and the object is to construct the vessels in such parts that can be put together and form the complete vessels after being carried to the places at which they are to be put up for use. The object in constructing vessels in this way is to lessen the labor in handling and hauling them and to reduce the cost of shipping. If the vessels had to be completed at the factory, they would be inconvenient to handle and the cost of shipping would be by the car; but if constructed in parts which can be readily put together after they reach their destination the cost of shipping would be by the hundredweight and not by the car.

Reference is had to the accompanying drawings, which form a part of this application.

The advantages will be hereinafter fully described, and more particularly pointed out in the claims.

Figure 1 is a side elevation of a cistern or tank, illustrating a completed vessel. Fig. 2 is a horizontal broken section illustrating a vertical seam. Fig. 3 is a perspective view of a side wall of a cistern before the wall is prepared for putting up. Fig. 4 is a vertical broken section illustrating the construction of the horizontal seam by which the bottom is put on. Figs. 5 and 6 show variations of the vertical seam.

Similar characters of reference indicate the same parts throughout the several views.

The side walls may be constructed of one piece or more than one piece of corrugated or plain sheet metal, such as is shown in Fig. 3. When constructed of several pieces, the pieces are riveted and soldered together. The ends are secured together by means of angle-irons, as shown in Fig. 2. Two angle-irons A and B are riveted to the ends of the sheet metal D by rivets *a* and *b* and then soldered. The metal forming the side wall is corrugated to give strength. The irons A and B add strength to the wall. A piece of packing E is placed between these irons, as shown in Fig. 2, and the irons and the packing are secured together by screw-bolts *g*, provided with nuts *h*. The bottom K is attached to the side in the same way, except that the angle-iron L forms a chime for the cistern. The angle-iron M is attached to the side wall D, as shown in Fig. 4. The bottom seam is formed by the packing O, the bottom K, a flange P on the side wall, the iron L on the outside of bottom K, and the iron M on the outside of flange P. All these parts are secured together by screw-bolts *j*, provided with nuts *m*. The cisterns are to be provided with suitable caps or covers. Fig. 3 shows a side wall having one of the angle-irons attached. It will be seen that when all the parts are prepared the cistern can be set up by putting the parts together and securing them together by bolts, which operation can be done at any place at which the cistern is to be used.

Plain walls may be put together either as shown in Fig. 2 or in Fig. 5. In Fig. 5 the angle-irons A′ and B′ are on the outside of the wall D′, which are bent to form a flange which extends out as far as the angle-irons, the packing E′ coming between the flanges of the wall-piece. These parts are secured together by bolts *g*′, provided with nuts *h*′. From this construction it will be readily seen that the side walls are braced against any liability of expansion and consequent danger of breaking at the angles formed where the flanges are joined to the side walls. This is important, inasmuch as the pressure of the contents is generally sufficient to break or strain this portion of the side wall unless reinforced in some manner. To place a hoop or ring around the top and bottom of the side walls is not sufficient to prevent this expansion, serving rather to place the strain intermediate of the top and bottom of the tank or cistern. In the construction herein described this strain is borne entirely by the reinforce-strip or angle-iron, which extends the entire length of the tank. In small vessels or in large vessels with heavy sheet metal the walls D″ may be fastened together without the angle-irons by bolts *h*″, provided with nuts *g*″ with a packing E″.

Variations might be made in forming the

bottom seam. Instead of an angle-iron a ring may be used. The bolts *j* would have to be turned over or inverted, putting the nuts above the seam. This is an obvious change and would result by a simple removal of the vertical arm of the lower angle-iron L or the substitution of an annulus as an under reinforce or bearing. The chime feature would be abandoned in this particular form and the reversal of the bolts would position the heads to serve as base-rests.

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

1. A knockdown cistern having a side wall horizontally corrugated and provided with a lower outwardly-projecting horizontal flange, a bottom, and means for attaching said bottom to said wall consisting of upper and lower reversely-arranged angle-irons, the horizontal arms of the angle-irons bearing respectively against the said horizontal flange and the under side of the bottom, the vertical arm of the upper iron pressing against the lower portion of the side wall and the similar arm of the lower iron forming a chime for the cistern, a packing completely filling the interval between the bottom and horizontal flange of the side wall and having its inner edge interiorly exposed in the cistern, and nutted bolts inserted through the angle-irons, horizontal flanges and packing.

2. A circular knockdown tank or cistern, composed of a sectional side wall corrugated horizontally, each of the sections having its vertically-extending edges bent outwardly and radially, and having their lower edges bent outwardly in a horizontal direction; a bottom for said tank, having a diameter equal to the diameter of the outer peripheral edges of said horizontal extending flanged portions; a liquid-tight packing interposed between and extending the entire length and width of the meeting faces of said radially-extending portions or flanges, and also extending between said bottom and said horizontal flanged portion; angle-irons removably secured to the outer angular portion of said radial flanges by bolts passing therethrough and through said flanges and packing; a similar angle-iron located in the outer angular portion of said horizontally-extending flange; an angle-iron located on the under side of the bottom in alinement with the horizontally-extending angle-iron, said bottom iron having a non-contacting portion extending downwardly to form a seat for said tank; and bolts for securing said bottom and said horizontally-extending flange together by being passed therethrough, through the angle-iron and through said packing, whereby said tank may be readily assembled and taken apart, substantially as and for the purposes set forth.

In testimony whereof I set my hand, in the presence of two witnesses, this 30th day of September, 1898.

HUGH W. HARRY.

Witnesses:
A. L. JACKSON,
JAMES GILFORD BROWNING.