No. 817,314. PATENTED APR. 10, 1906.

A. HAHN.

TANK.

APPLICATION FILED NOV. 21, 1903.

2 SHEETS—SHEET 1.

Fig. 1.

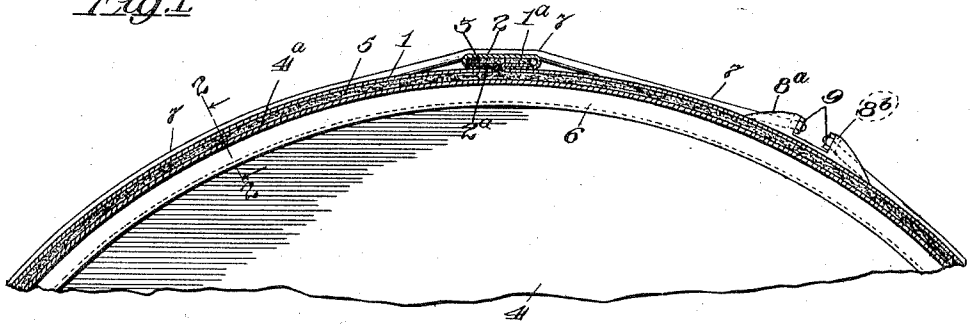


Fig. 3.

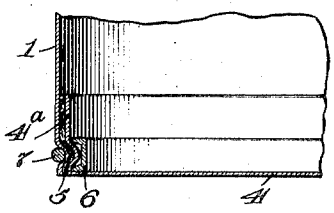


Fig. 2.

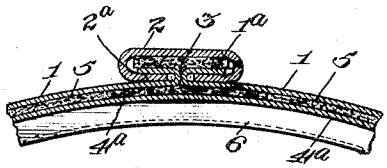


Fig. 7.

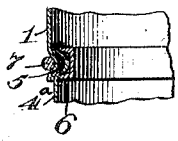


Fig. 4.

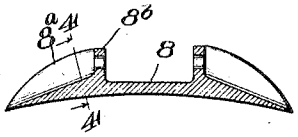


Fig. 6.

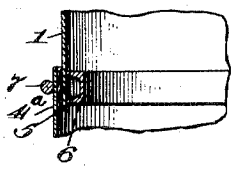
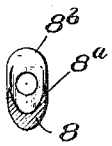


Fig. 5.



Witnesses:

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Inventor.

Andrew Hahn

by Burton & Burton

Attys

No. 817,314. PATENTED APR. 10, 1906.

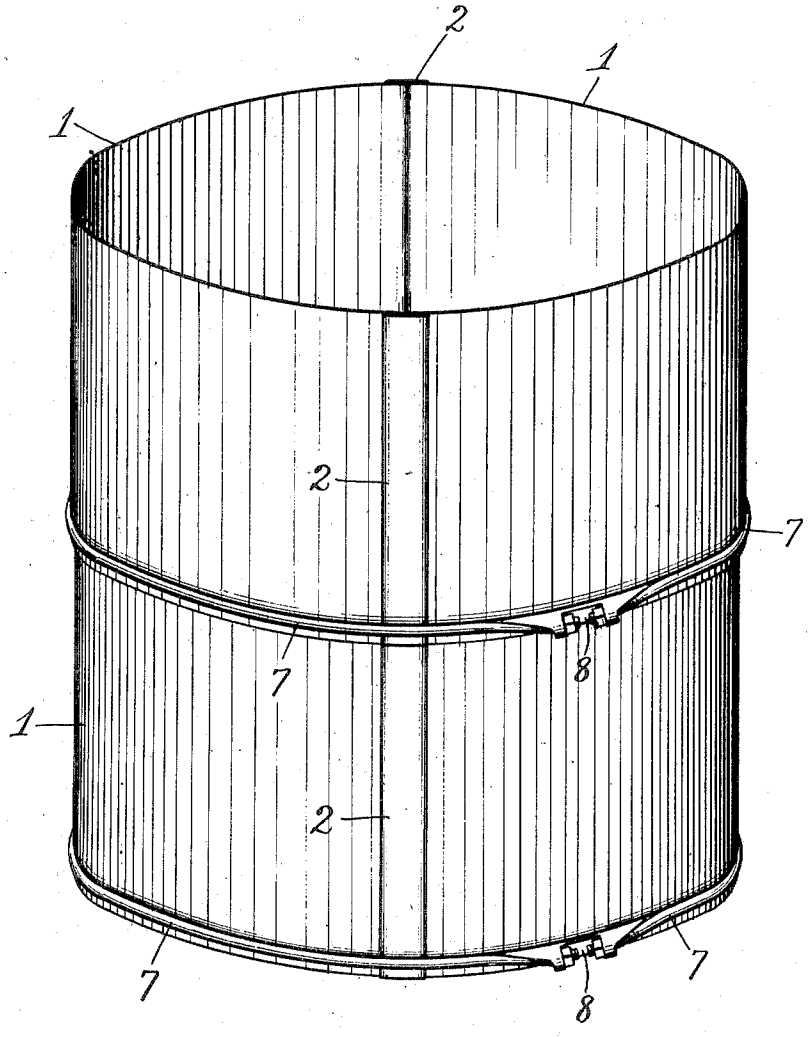
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2 SHEETS—SHEET 2.

Fig. 8



Witnesses.
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Fred' G. Fischer

Inventor.
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his Atty's.

UNITED STATES PATENT OFFICE.

ANDREW HAHN, OF CHICAGO, ILLINOIS.

TANK.

No. 817,314. Specification of Letters Patent. Patented April 10, 1906.

Application filed November 21, 1903. Serial No. 182,058.

To all whom it may concern:

Be it known that I, ANDREW HAHN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Tanks, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

This invention is designed to provide a novel structure of tanks, troughs, and like devices adapted for knockdown tanks and troughs by dispensing with rivets or solder for securing the joints.

It consists in the features of construction set out in the claims.

In the drawings, Figure 1 is a transaxial section of a segment of the cylindrical tank embodying my invention. Fig. 2 is an enlarged detail section across the longitudinal seam of the tank. Fig. 3 is a detail section at the line 3 3 on Fig. 1. Fig. 4 is a detail section of the junction element. Fig. 5 is a section at the line 5 5 on Fig. 4. Fig. 6 is a longitudinal section across a transverse junction-seam in the body, showing the same as it would appear before the seam is tightened or closed up. Fig. 7 is a similar view showing the same seam tightened. Fig. 8 is a perspective view of a tank embodying my invention.

I will first describe the cylindrical tank shown in the first group of figures. This tank comprises the cylindrical body portion 1, whose edges for junction at the longitudinal seam are flanged back outwardly, the flanges 1^a 1^a being embraced by the clasp element 2, whose inturned marginal flanges 2^a engage within the outturned flanges 1^a of the body element, a packing-strip 3 of asbestos or other suitable material being interposed between the outer surface of the flanges 1^a and the inner surface of the clasp, as seen in Fig. 2. The parts are prepared for shipment with the flanges adapted to be engaged easily, as shown in Fig. 2. The body is rolled up for shipment in compact form, and the purchaser or user assembling the parts as shown in Fig. 2 may tighten the seam by hammering upon the outside against any suitable support inserted within the body. The bottom element 4 has an upturned marginal flange 4^a, its diameter being such that this flange may enter loosely within the cylindrical body after the latter has its longitudinal seam tightened, and a packing-strip 5 is preferably interposed between the outer surface of the flange 4^a and the inner surface of the body. The element of the structure which distinguishes my invention is the exteriorly-channeled ring 6, whose exterior diameter is such that it fits within the upturned flange 4^a of the bottom. A clamping-hoop 7, preferably of round iron rod, is provided for encompassing the tank about the bottom, such hoop being lodged outside the body opposite the interior channeled ring 6. This hoop is designed to be drawn tight about the structure and to sink the metal of the body and flange 4^a of the bottom into the channel of the ring 6. For accomplishing this purpose a junction element 8 is provided, which is preferably of malleable iron segmental in form, corresponding to the curvature of the tank and in cross-section approximately corresponding to the round iron hoop 7, so that it will force a channel or groove in the metal when it is sunken into it corresponding to that which will be formed by the hoop in like process of sinking. Exteriorly the junction element 8 is channeled from the ends toward the middle concavely in cross-section to seat the hoop 7, said channels 8^a, however, terminating each at the outer side of a radially-projecting lug 8^b, these lugs being apertured in continuation of the channel, so that the ends of the round iron hoop project through the lugs and extend toward each other between the latter and being threaded receive inside the lugs the clamping-nuts 9 9, which draw against said lugs, respectively, for taking up the necessary amount of slack of the hoop for sinking it in the metal, as described. Upon applying the hoop and engaging the ends with the junction-piece and drawing up the nuts till the parts are snugly seated together the sinking process may be started at one side of the tank by a few blows of the hammer, preferably commencing with the junction element itself, and the sinking process thus started is readily extended around in both directions by continuing the tightening and hammering moderately on the outer side of the hoop as the sunken channel extends gradually around from opposite sides until it is continuous and the hoop is sufficiently sunken to tightly compress the parts together, closing up all crevices and effecting sufficiently-deep engagement of the metal with the channel to insure the retention of the parts thus engaged. Any transverse seam which may be necessary in making tanks longer than the dimension of the sheet-

metal plates employed will be formed in the same manner, the inner lapped end of the sheet at such junction corresponding in structure perfectly to the flange 4^a of the bottom in the bottom seam. Figs. 7 and 8 show a section of such a seam, which will be understood without further description.

I claim—

1. A transverse seam in a sheet-metal tank comprising an interior exteriorly-grooved reinforcing element; body elements whose marginal portions overlap the groove of the reinforcing element; a clamping-hoop in the zone of the groove of the reinforcing element and the marginal portions of the body elements, and means contracting the hoop to sink the marginal portions in the groove of the reinforcing element.

2. A knockdown sheet-metal cylindrical tank comprising a body whose sections are joined up endless by a locked longitudinal seam, the transverse seams being formed by the adjacent portions of the elements at such seams lodged one within the other; an internal reinforcing element peripherally channeled, located within the zone at which the transverse seam elements are lodged, and an exterior hoop which encompasses the other parts at the zone of the channel in the reinforcing element, and means for contracting the hoop for sinking it, together with the encompassed parts, in the channel.

3. A knockdown sheet-metal cylindrical tank comprising a body whose sections are each joined up endless by a locked longitudinal seam, the transverse seams being formed by the adjacent portions of the elements at such seams lapped one within the other; a packing interposed between the lapped edges of such elements; a channeled reinforcing element within the inner of the elements thus lapped, having its channeled side facing outwardly against the inwardly-facing surface of the inner of the said lapped elements; a metal hoop encompassing the lapped parts at the zone of the channel in said interior reinforcing element, such hoop having its opposite ends extending in substantially opposite directions, and means connecting the ends for drawing them in the opposite directions in which they respectively extend to reduce the periphery encompassed by the hoop and sink it, together with the encompassed parts, in the channel of the reinforcing element.

4. A knockdown sheet-metal cylindrical tank comprising a body which is joined up endless by a locked longitudinal seam; an end or bottom element having a peripheral flange extending in cylindrical form, the said flange and the adjacent end of the cylindrical body being lapped one within the other; a peripherally-channeled element lodged within the inner of said two lapped elements; a hoop encompassing said lapped elements at the zone of the channel in the reinforcing element, and means for contracting the hoop to sink it, together with the encompassed parts, in the channel.

5. A knockdown sheet-metal tank structure which comprises, when assembled ready for tightening the transverse seam, two elements to be united at such a seam, each closed up endless by a locked longitudinal seam, telescoped one within the other at their adjacent ends; an annular reinforcing element peripherally channeled, located within the zone at which the two similar elements are so telescoped; an exterior hoop which encompasses the other parts at the zone of the channel in the reinforce, and means for contracting the hoop for sinking it and the encompassed sheet-metal parts by means of it into the channel.

6. A knockdown sheet-metal tank structure which comprises, when assembled ready for tightening the transverse seam between the body and the bottom, a body element which is joined up endless by a locked longitudinal seam; a bottom element having a marginal cylindrically-formed flange, said flange and one end of the cylindrical body element being telescoped one with the other; an interior reinforcing element which is peripherally channeled and located at the zone of the interlap of said telescoped parts; a hoop which encompasses said telescoped parts at the zone of the peripheral channel of the reinforce, and means for contracting the hoop.

7. A knockdown sheet-metal cylindrical tank comprising a body whose sections are each joined up endless by means of a longitudinal seam, such seam being formed by means of interlocking flanges on the edges united thereat, each transverse seam being formed by the adjacent portions of the elements at the seam lapped one within the other; an annular interior reinforce peripherally grooved within the zone at which the transverse seam elements are so lapped, and an exterior hoop which encompasses the other parts at the zone of the channel in the reinforce, and means for contracting the hoop for sinking it, together with the encompassed parts, in the channel.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, at Chicago, Illinois, this 14th day of November, 1903.

ANDREW HAHN.

In presence of—

CHAS. S. BURTON,

FRED. G. FISCHER.