Oct. 16, 1934. A. A. KRAMER 1,976,734

OPEN COMPARTMENT PONTOON DECK

Filed May 23, 1931 2 Sheets-Sheet 1

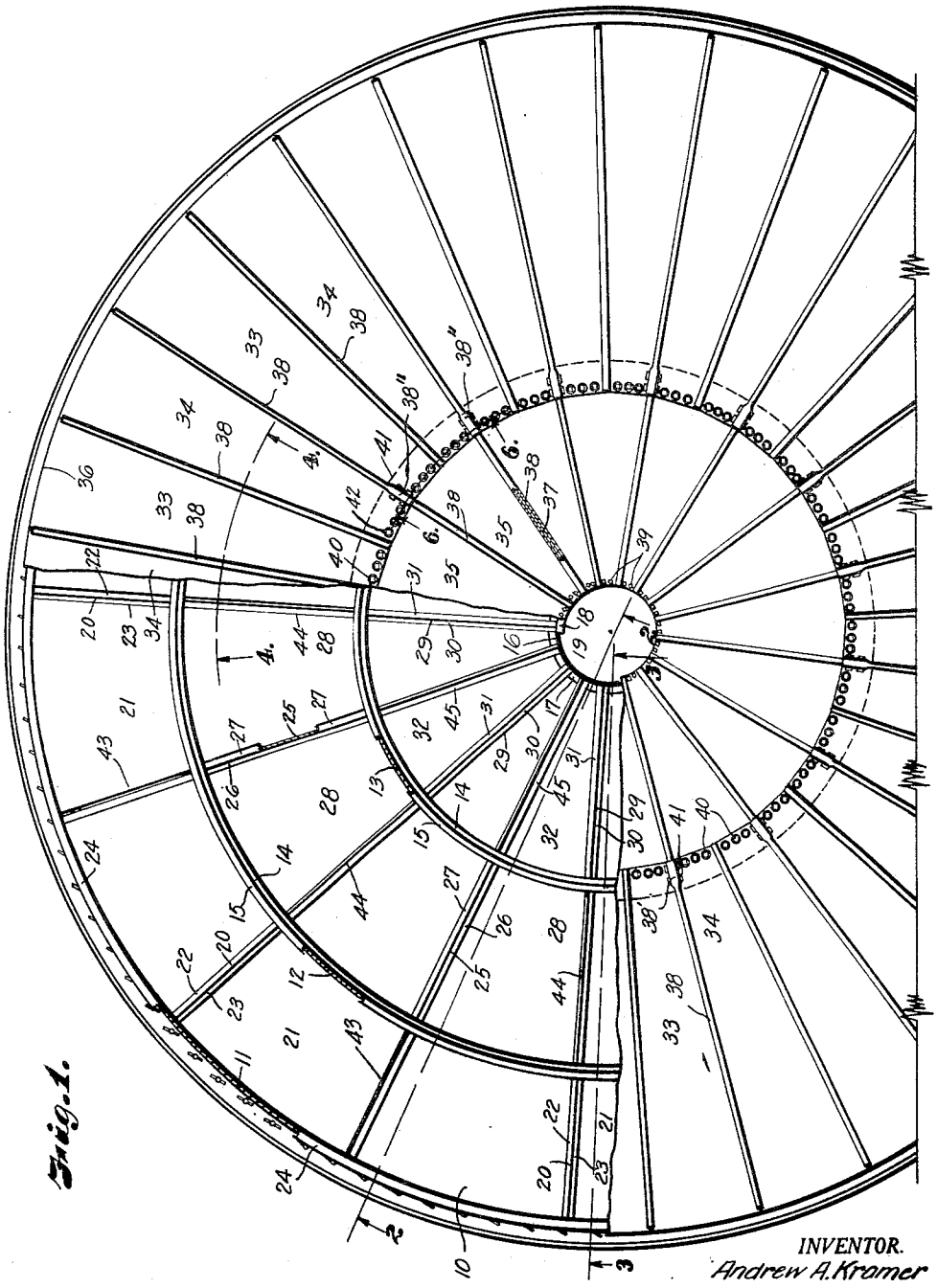


Fig. 1.

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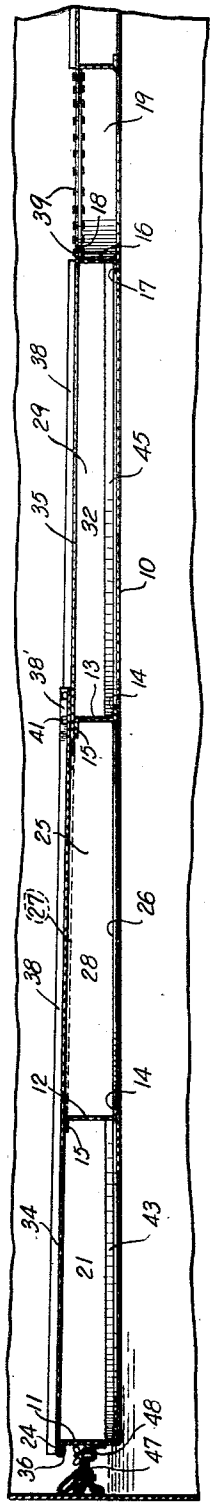


Fig. 2.

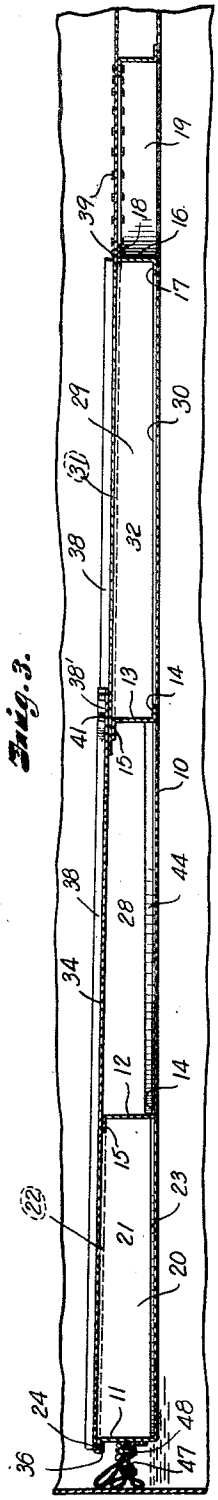


Fig. 3.

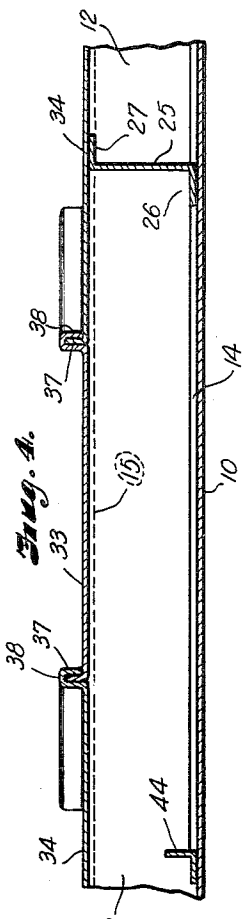


Fig. 4.

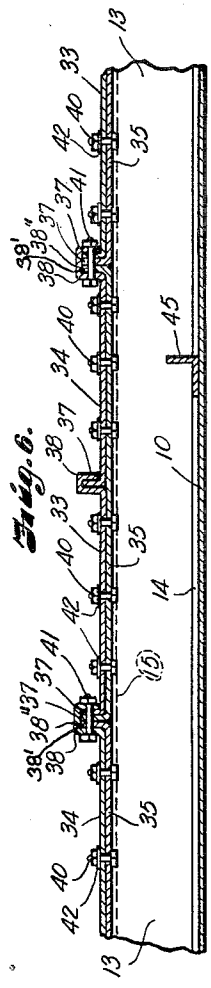


Fig. 6.

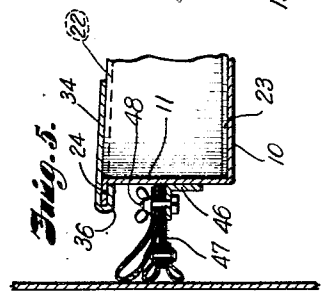


Fig. 5.

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Patented Oct. 16, 1934 1,976,734

UNITED STATES PATENT OFFICE

1,976,734

OPEN COMPARTMENT PONTOON DECK

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Application May 23, 1931, Serial No. 539,495

4 Claims. (Cl. 220—26)

My invention relates to floating decks for tanks, and more particularly to an open topped pontoon floating deck provided with a cover or water shedding means.

It is a purpose of my invention to provide a floating deck that has a plurality of separate water tight compartments, which are open on the top side thereof, which floating deck is provided with rain or water shedding means overlying said compartments, said water shedding means being detachably mounted thereon.

More particularly, my invention comprises a floating deck having a body portion which is partitioned so as to divide the same into a plurality of water tight compartments, preferably arranged in a plurality of concentric circular series on the deck, said floating deck being provided with water shedding means covering said compartments and inclined from the outer peripheral edge of the deck toward the center thereof to direct water falling on said cover toward a drain well at the center of said floating deck. The open topped pontoons or water tight compartments are preferably arranged so that the compartments of adjoining circular series are arranged in offset or staggered relation to each other, and are preferably provided with bracing means between the ends thereof, the bracing means aligning radially with the dividing walls of the compartments of adjoining circular series.

It is a further purpose of my invention to provide a cover for my improved floating deck which serves as rain or water shedding means overlying the tops of all the pontoons and resting on the top edges of the dividing wall portions, said cover member comprising a plurality of sections detachably mounted on said floating deck.

More particularly, my invention comprises a cover member for an open top pontoon floating deck, which is interlocked with the deck at the rim portion thereof, and which comprises segmental sections that have the adjoining edges thereof interlocked, said segmental sections being detachably secured to the floating deck at the inner ends thereof.

Other objects and advantages of my invention will appear as the description of the drawings proceeds. I desire to have it understood, however, that I do not intend to limit myself to the particular details shown or described, but that I intend to include as part of my invention all such obvious changes and modifications as would occur to a person skilled in this art and as would fall within the scope of the claims.

In the drawings:

Fig. 1 is a plan view of my improved floating deck, partly broken away, the cover and certain other portions being partly broken away to more clearly reveal the construction thereof.

Fig. 2 is a section taken on the line 2—2 of Fig. 1.

Fig. 3 is a section taken on the line 3—3 of Fig. 1.

Fig. 4 is a section taken on the line 4—4 of Fig. 1, on an enlarged scale.

Fig. 5 is a fragmentary section of the outer or rim portion of the floating deck taken substantially on a radial plane, and

Fig. 6 is a section taken on the line 6—6 of Fig. 1.

Referring in detail to the drawings, my improved floating deck comprises a pan-like body portion, having a bottom wall 10, and a peripheral upstanding rim portion 11. Said floating deck is provided with a plurality of circular partitions that are substantially concentric with the rim portion 11, two of such partitions being shown at 12 and 13 in the drawings, and being provided with oppositely directed flanges 14 and 15, the flanges 14 being secured to the bottom wall 10 of said floating deck by welding or in any other manner to obtain a fluid tight joint between the same. The partitions 12 and 13 are thus substantially Z shaped in cross section, and the flanges 15 form circular ledges, the purpose of which will be described below.

The floating deck is further provided with an upstanding circular partition 16, which has an outwardly directed flange 17 welded to the bottom 10 of the deck, and with an inwardly directed flange 18 serving as a circular ledge or lip extending inwardly from the top edge of the drain well 19 thus formed at the central portion of said floating deck.

Between the circular partition member 12 and the rim portion 11 of the deck extend in equidistantly spaced relation, the radially extending partition members 20, dividing the deck into a plurality of segmental open topped compartments 21 arranged in a circular series around the deck. Said partitions 20 are made also with oppositely directed top and bottom flanges 22 and 23 respectively, the flanges 23 being welded to the bottom 10 to provide a fluid tight joint between said partitions 20 and the bottom 10, while the flanges 22 provide inclined ledges which are substantially flush with the outwardly directed flange 24 on the rim 11, and with the top flange 15 on the circular partition member 12.

Similar partition members 25 extend radially

between the circular partition members 12 and 13, but are arranged in staggered relation to the radial partitions 20. The partitions 25 are provided with bottom flanges 26, which are welded to the bottom 10 of the floating deck and with the flanges 27, which are inclined from the partition 12 to the partition 13 so as to be flush with the flange 15 on said partitions 12 and 13. The flanges 26 and 27 are oppositely directed so as to provide partition members that are substantially Z shaped in cross section. The partitions 25 are preferably, equidistantly spaced to provide a plurality of similar segmental compartments 28 between the same and the walls 12 and 13. The deck is further provided with similar partitions 29, also extending radially, located between the circular partition 13 and the circular wall 16 that defines the drain well. The partitions 29 are staggered relative to the partitions 25, but are aligned with the partitions 20. The partitions 29 have a lower flange 30, which is welded to the bottom 10 of the deck, and an upper flange 31, which is inclined from the partitions 13 to the wall portion 16 so as to be flush with the flange 15 on the wall 13, and with the flange 18 on the wall 16. The radial partitions 29 are spaced equidistantly around the deck to provide a plurality of segmental compartments 32, arranged around the drain well 19.

By the staggered arrangement of the radial partitions 20, 25 and 29, and the provision of the ledges along the top edges thereof formed by the flanges 22, 27 and 31, in combination with the flange 24 on the rim 11, and the flange 18 on the drain well 19, serve as supporting means for a cover for the floating deck, which is detachable therefrom and which serves as a rain shedding means to prevent entrance of water that falls on the deck into the pontoons. The cover is made up of a plurality of sections which are segmental, and which extend from the rim of the deck to the drain well. In the case of a small deck these would all be made in one piece, but in the construction shown, the deck would be of such a size that the sheets from which the cover member sections are made, would not be of sufficient size that the same would extend from the rim to the drain well, and the sections are shown as being spliced between the outer and inner edges thereof, being made up of three separate pieces, but being constructed so that the same will be secured together as a unit and serve as a unit in the assembly of the device.

Each of said rain shed or cover sections is made up of the members 33, 34 and 35. The members 33 and 34 are made exactly alike and are each provided with a hook-like flange 36, which interlocks with the flange 24 on the rim 11, and are also each provided with a radial flange 37 along one edge thereof, and a hook-like flange 38 in the other edge thereof substantially inverted U-shaped in cross section so that the open side thereof is downward, the hook-like flanges 38 embracing the flanges 37 so as to be interlocked therewith. The same numerals are applied to these parts in the case of both the members 33 and 34, as they are substantially identical in construction.

The members 35 are also constructed in the same manner as the members 33 and 34, except that they do not have the hook-like flange 36, merely having the radial flanges 37 and 38 and being similarly interlocked. The inner edges of the members 35 overlie the flange 18, and are secured thereto in any suitable manner, as by means of the bolts 39. The sections 35 lap under the sections 33 and 34 slightly, and are secured thereto by means of the bolts 40 extending through said overlapping portions, and the bolts 41 extending through the flanges on the members 35, 33 and 34 at their overlapping portions. Thus a unit is provided, which is segmental in section, made up of the members 33, 34 and 35 that interlocks with the rim 11 and rests on the flanges provided on the tops of the partitions that form the segmental compartments or pontoons, and is secured to the inwardly directed flange or lip on the drain well 19.

While the members 33, 34 and 35 may be secured together by any desired means and by any desired arrangement of the joint to obtain a liquid tight joint of sufficient stiffness to permit handling of the section comprising the members 33, 34 and 35, one form of such joint is shown in Fig. 6, and in order to provide the liquid tight joint at the point of connection of the members 33, 34 and 35, compressible gaskets or washers 42 are provided under the nuts on the bolts 40.

The bolts 41 extend through a flange 37 on a member 33, through a flange 37 on a member 35, and through the portion 38' of a flange 38 on a member 35, the portion 38' of the flange 38 on the member 35 being cut away for a distance at the end thereof so that the same extends merely at right angles to the body of the section, instead of being U-shaped, as it is throughout the remainder of said section. The inverted U-shaped flange 38 on the member 34 at said joints is spread slightly to permit the passage of three thicknesses of the material, that is, the flanges 37 and the one flange 38' between the vertical portions thereof so that the widened portion 38' of the flange 38 on the member 34 covers and houses the flanges on the members 33 and 35 with which it is joined by means of the bolts 41.

It will be evident that the hook-like flanges 38 not only interlock the sections and the members 33, 34 and 35 of the sections on the radial edges thereof, but also provide a joint that is weatherproof, in that rain or water falling on the cover for the floating deck will not enter under said cover at this joint because of the flanged nature thereof and the covering that is provided over the flange 37 by the U-shaped flange 38.

The compartments or open topped pontoon portions that are provided in the floating deck by means of the partitions above described are provided with bracing means between the ends thereof, said bracing means extending substantially radially and comprising angular members, the angular braces being welded or otherwise secured in fixed position to the bottom 10, and to the circular wall portions with which the same engage at the end thereof. These braces are arranged so that they substantially align with the radial partitions, separating the pontoons of the adjoining circular series. This will be evident from Figs. 1, 2 and 3, in which the angular braces in the outer series of pontoons 21 are designated by the numeral 43, those in the intermediate series of pontoons 28 by the numeral 44, and those in the inner series of pontoons 32 by the numeral 45.

The outer rim portion 11 of the deck is provided with an angular bracket 46 intermediate the top and bottom edges thereof, upon which is detachably mounted a flexible sealing means 47, the same being secured in position by means of the securing members 48.

I claim:—

1. The combination with a tank, of a deck adapted to float on the liquid in said tank comprising a body portion having a central drain well and a plurality of concentric series of compartments surrounding said drain well, and a cover overlying said compartments and overlapping the edge, of said drain well, the compartments of adjoining series being arranged in staggered relation.

2. A floating deck comprising a body portion having a plurality of partitions therein dividing said body portion into a plurality of circular series of segmental compartments, the radial partitions of adjoining series of said compartments being offset, and water shedding means comprising a plurality of segmental cover sections resting on the top edges of said partitions.

3. A floating deck having an upstanding rim, a central drain well, and upstanding walls on top of said deck between said rim and drain well, and a cover for said deck comprising a plurality of sections resting on top of said upstanding walls and on the top edge of said drain well, interlocking means on said cover sections and said rim and means detachably securing said cover sections to said top edge of said drain well.

4. A floating deck having an upstanding rim, a central drain well, and upstanding walls on top of said deck between said rim and drain well, and a cover for all said deck except said drain well comprising a plurality of interlocking sections resting on top of said upstanding walls, and means for securing said sections on said deck.

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