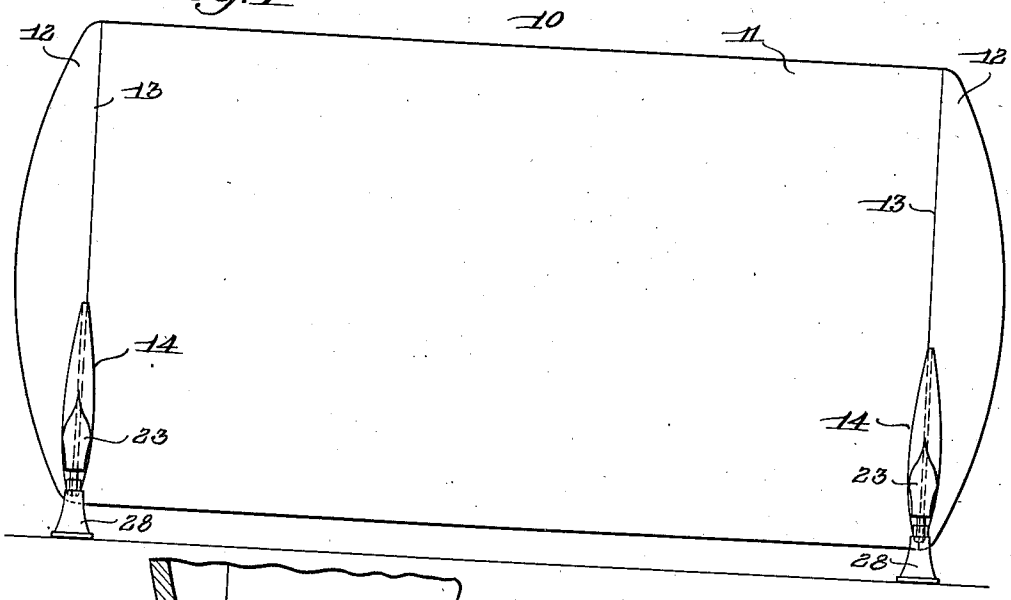
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CONTAINER SUPPORT

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Fig. 1



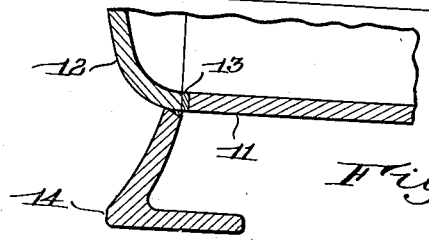
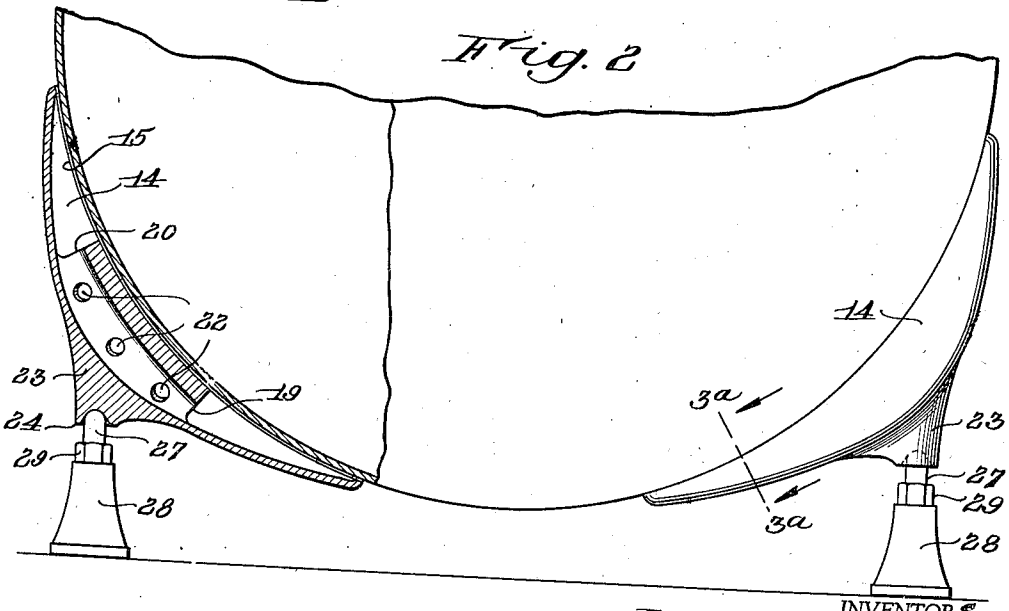


Fig. 3

Fig. 2



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Fig. 8

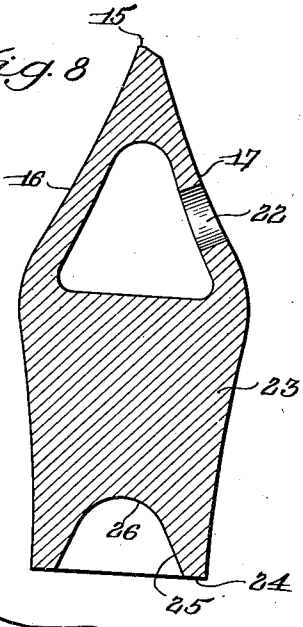


Fig. 9

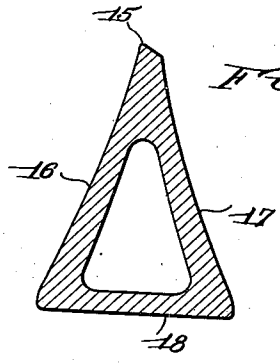


Fig. 6

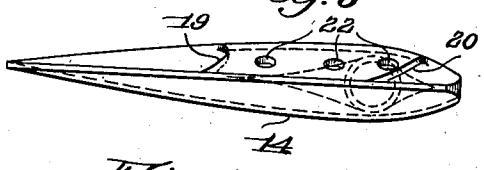


Fig. 5

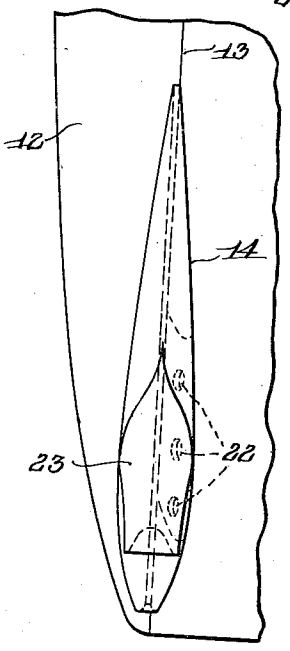


Fig. 7

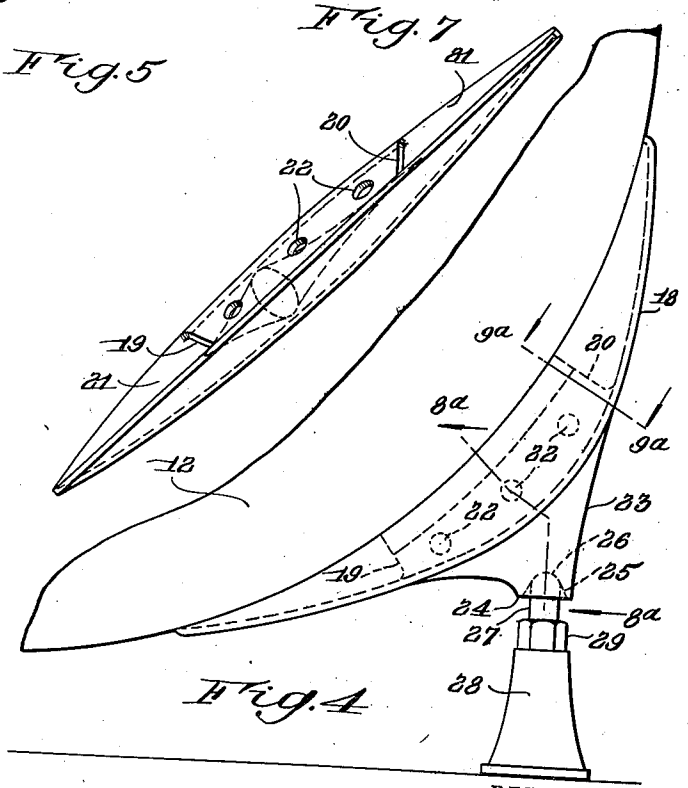


Fig. 4

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CONTAINER SUPPORT

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Application November 16, 1940, Serial No. 365,990

2 Claims. (Cl. 248—146)

This invention relates to supports for containers and, more especially, for containers made of metal plates formed to provide horizontal, cylindrical side walls and dished end walls, such as commonly employed, for example, for containing liquids in the brewing, chemical and various industries. Such containers have been commonly constructed of steel plates and of plates of non-corrosive alloys and also of steel plates with vitreous or glass linings, and in relatively large sizes capable of holding contents of considerable weight, requiring substantial means for supporting such weights and with a minimum of distortion of the containers.

It has been proposed to support such containers by brackets attached to the container heads or to the containers adjacent their heads, as the most rigid wall portions thereof, and to construct such brackets in the form of transversely extending plates, but such brackets have in some instances lacked the necessary strength and rigidity and in others have been built up expensively of a number of structural parts. One object of the present invention, therefore, is to provide a container of the above character with supporting brackets of an improved, less expensive, but more rigid and efficient character.

Another object is to provide such brackets in the form of one-piece, self-supporting, rigid steel castings with relatively thin parts of small mass and with only a thin edge portion for welding to the tank.

To these and other ends the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Fig. 1 is a side elevation of a container, or tank, and supporting brackets therefor embodying the present invention;

Fig. 2 is an enlarged end view of the parts shown in Fig. 1, partly broken away and in section;

Fig. 3 is an enlarged fragmentary section on line 3*a*—3*a* in Fig. 2;

Fig. 4 is an enlarged, detail view of parts shown in Fig. 2;

Fig. 5 is a view of some of the bracket parts shown in Fig. 4 as viewed from the right;

Fig. 6 is a view of some of the parts of Fig. 4 as viewed from the top;

Fig. 7 is a view of some of the parts of Fig. 4 as viewed from above and to the left;

Fig. 8 is an enlarged section on line 8*a*—8*a* in Fig. 4, and

Fig. 9 is an enlarged section on the line 9*a*—9*a* in Fig. 4.

The same reference numerals throughout the several views indicate the same parts.

The invention is embodied in the present instance, by way of illustration, in combination with a tank, indicated generally at 10, of known construction, made of relatively thin metal plates formed into cylindrical side walls 11 and dished end heads 12, the peripheral edges of the heads being turned into abutting alignment with the cylindrical side walls and welded to the ends thereof, along lines 13. The container, as well understood in the art, may be made of ordinary steel, or non-corrosive, steel alloy plates, or may be made of steel plates with the inner surfaces of the container protected by a chemically resistant, vitreous or glass lining, fused thereon by firing in an oven.

The bracket means for supporting the container are applied to its cylindrical side walls adjacent and preferably on the peripheral portions of its dished end heads, with one bracket 14 at each side of each head. Such an arrangement takes advantage, as well understood in the art, of the strength and rigidity of the transversely extending dished heads, with a minimum distortion of the container walls and with a minimum number of such brackets, one of which will now be described.

Each bracket 14 comprises preferably a one-piece steel casting of elongated, generally circular extent as shown, shaped to embrace circumferentially a portion of the cylindrical wall of the container and having, for a substantial portion of its extent, a hollow, generally triangular, or delta (Δ) shape in cross section, as best shown in Figs. 8 and 9, with adjacent sides meeting substantially in a circular arc shaped apex edge 15 shaped and arranged for welding to the periphery of the end head 12. The arcuate extent of the bracket is preferably of substantial length, as shown, to distribute the stresses, reaching from adjacent the under side of the tank well up its lateral or outer side so as to support a substantial proportion of the container weight in substantially vertical compression in the bracket and its leg.

The cross-sectional shape of the bracket, stated in more detail, preferably comprises three side walls 16, 17 and 18, forming a rigid, triangular, box-like frame section. Adjacent side walls 16 and 17 are inclined and preferably

slightly curved, upwardly and toward each other, to meet, as shown, substantially in the common edge 15, which is welded to the tank. The remaining base side wall 18 unites the spaced lower portions of the walls 16 and 17. Each of the side walls 16, 17 and 18, preferably, is relatively thin in construction, depending, of course, upon the size and weight of the tank to be supported and it has been found satisfactory, for example, in case of tanks of the larger sizes, to give the side walls 16 and 17 a thickness tapering from about three-fourths of an inch adjacent the base to a thickness of about five-eighths of an inch adjacent the juncture with the opposite wall, the common edge, 15, for welding to the tank, having a thickness, for example, of about one-half inch, which is also a satisfactory thickness for the base wall 18. The height and width of the bracket is tapered and reduced, as shown, from its central portion toward either end and for tanks of the size referred to, for example, it has been found satisfactory to employ, at its central portion, a height of about fourteen inches and a width, at the base, of about half that amount, but such dimensions will be varied, of course, to suit different requirements, as well understood in the art.

To provide communication with the interior of the bracket, for the transmission of heat to and from the same, for example, one or more of the side walls are preferably made discontinuous. Thus in the present instance, the side wall 17 is preferably discontinued at its ends 19 and 20, Figs. 4 to 7, inclusive, which are spaced from the ends of the bracket, leaving externally communicating openings 21. In addition, the side wall 17 is preferably formed with additional openings as at 22. Such removal of portions of the wall 17 has the additional advantage of reducing the weight of the bracket, but a sufficient area of the wall is retained, of course, to maintain ample strength adjacent the center of the bracket where the side walls are highest, the opposite wall 16 having sufficient strength alone adjacent its narrow end portions such as shown in Fig. 3. A continuous outer wall 16 gives to the bracket an unbroken, strong and gracefully tapered effect and a pleasing appearance.

To provide for the connection of the bracket with suitable legs, or other standards, resting on the ground or foundation, the central portion of the base side 18 of the bracket is preferably formed with an integral enlargement 23, Figs. 2, 4 and 8, extending downwardly substantially under the outer portions of the bracket and terminating in a base 24 in which is preferably formed a substantially semi-spherical socket 25. Engaging in this socket is the semi-spherical upper end 26 of a post 27 which extends down into a leg, or standard, 28, resting upon the floor or other foundation. Post 27 preferably carries a nut 29 resting upon the upper end of the leg 28 for adjustably supporting the post in position for level engagement with the tank brackets.

The invention provides a light and economical, but self-contained and rigid bracket, capable of being welded to the periphery of the container along a single line at its strongest section without other point of attachment to the tank. The triangular, box like frame construction of the bracket affords such advantages while using only relatively thin walls, without any heavy mass of metal adjacent the container. It likewise affords a relatively thin edge for welding to the container, features which are desirable in application to containers of the glass lined variety, as well understood in the art, to avoid any interference with the uniform transmission of heat during the firing of the container to fuse the lining thereon. But the rigidity, economy and other advantageous features of the construction are useful in application to tanks generally and particularly those of large size and weight.

The invention thus accomplishes its objects and while it has been herein described as embodied in a preferred form of construction, it is to be understood that the invention is capable of other embodiments and of various modifications and arrangements of details within the scope of the appended claims.

We claim:

1. A supporting bracket for a horizontal, cylindrical container, comprising a one-piece metal casting of generally arcuate extent arranged to embrace a portion of the cylindrical wall of said container and having, for a substantial portion of its extent, a generally triangular, hollow shape in cross section with adjacent sides meeting substantially in an arcuate apex edge arranged for welding to said container wall and with an opposite base side provided with means for connection with a ground engaging leg.

2. A supporting bracket for a horizontal, cylindrical container, comprising an integral steel casting of generally arcuate extent and having, for a substantial portion of its extent, a hollow, generally delta shape in cross section with adjacent, upwardly inclined, relatively thin sides meeting substantially in an arcuate apex edge arranged for welding to the cylindrical wall of said container and with the remaining base side formed with a strengthening enlargement provided with means for connection with a ground engaging leg, at least one of the sides of said bracket being discontinuous to afford communication with the interior thereof.

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