

United States Patent

Zurmuehlen

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[54] STORAGE TANK

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[51] Int. Cl.B65d 25/04, B65d 7/02

[58] Field of Search.....220/5 A, 20, 22

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[57]

ABSTRACT

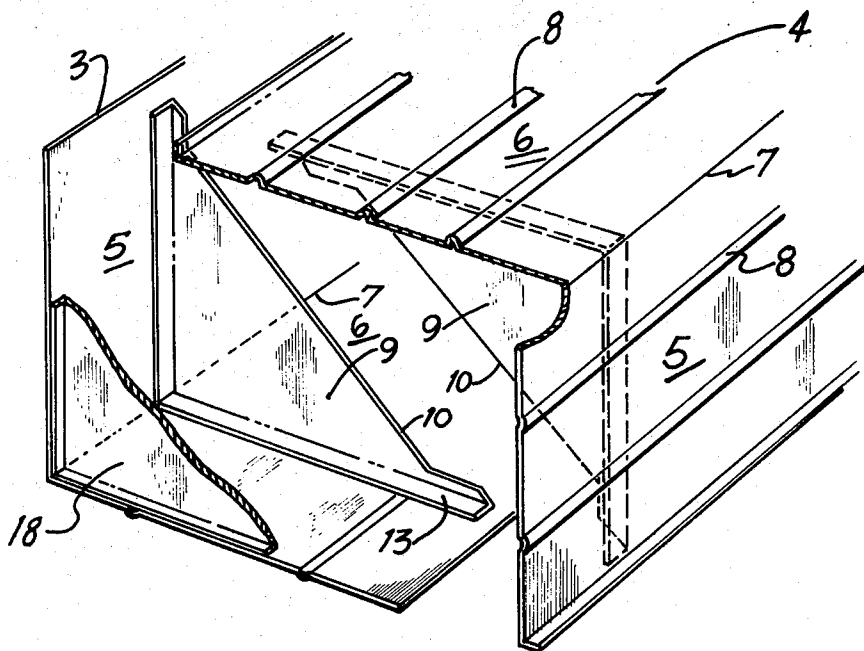
A storage tank including opposed anti-slosh baffle means extending normally from the inner walls thereof to form a diagonally extending flow-through slot therebetween, the anti-slosh baffle means further serving as structural strengthening members for the tank.

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4 Claims, 2 Drawing Figures



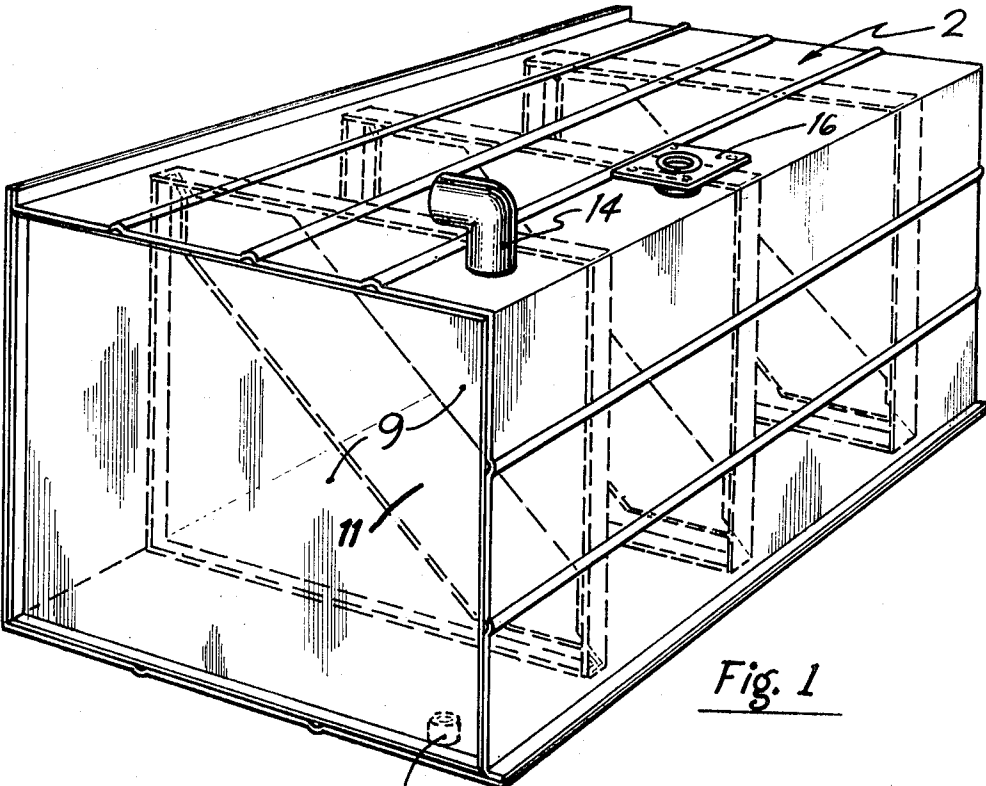


Fig. 1

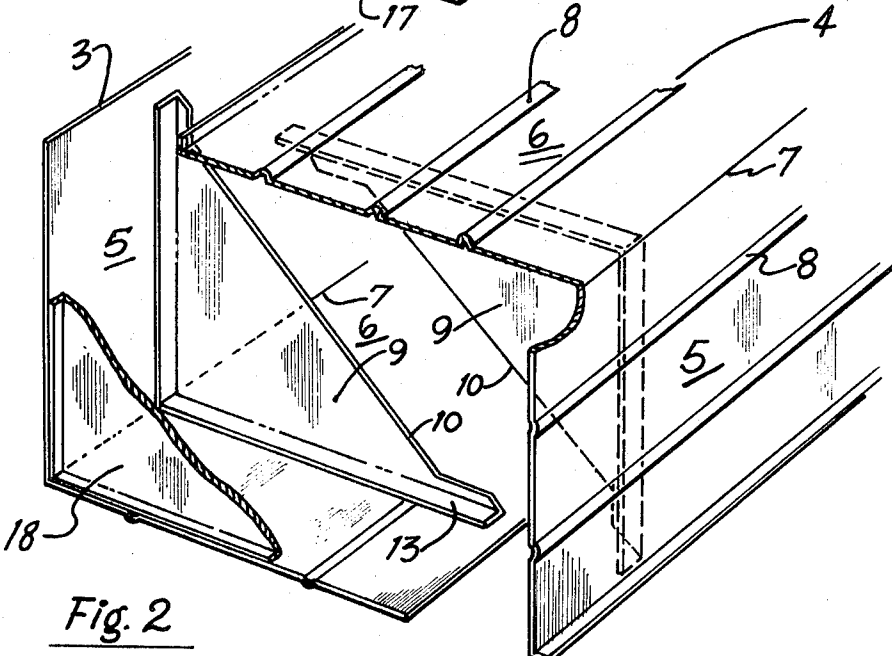


Fig. 2

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STORAGE TANK

BACKGROUND OF THE INVENTION

The present invention relates to compartmental receptacles and more particularly to an improved anti-slosh baffle arrangement for a storage tank receptacle.

Anti-slosh baffles for storage tanks, particularly those used for storing liquids, have long been known in the storage tank art. In the past, most such baffles have included a plurality of flow-through apertures to permit communication between adjacent chambers of the tank, the baffles being installed and assembled in a comparatively complex and expensive manner after a major portion of the shell of the tank is formed and before the roof of the tank is added, the apertured baffles serving to reduce sloshing of the materials stored within the tank.

SUMMARY OF THE INVENTION

The present invention recognizing the numerous disadvantages of past arrangements provides a straight-forward, economical and readily assembled construction for a storage tank which includes anti-slosh baffle members which serve not only to reduce sloshing of the material to be stored within the tank but which, at the same time serve to provide structural strength to the tank, eliminating the need for providing strength reducing apertures and permitting utilization of symmetrical housing sections to reduce construction and assembly costs.

Various other features of the present invention will become obvious to one skilled in the art upon reading the disclosure set forth herein.

More particularly, the present invention provides a storage tank comprising a pair of longitudinally extending housing sections joined together along abutting longitudinal edges of the sections to form the longitudinal body portion of the tank housing, each section having anti-slosh baffle means extending from the inner walls thereof in a plane substantially normal to the wall with the free edges of the anti-slosh baffle means extending diagonally from one longitudinal edge of its section to the other, the anti-slosh baffle means of one section being disposed opposite the anti-slosh baffle means of the other section in aligned spaced relationship therefrom to form a flow-through slot therebetween extending diagonally across the longitudinal body of the housing; and opposed end walls fastened to the joined sections to form the storage tank.

It is to be understood that various changes can be made by one skilled in the art in the arrangement, form and construction of the apparatus disclosed herein without departing from the scope or spirit of the present invention.

Referring to the drawing which discloses one advantageous embodiment of the present invention:

FIG. 1 is a perspective view of a storage tank incorporating the novel features of the present invention; and,

FIG. 2 is an exploded view of a portion of the tank of FIG. 1 disclosing the novel sections of the storage tank.

Referring to the drawing, storage tank 2 of rectangular cross-sectional configuration is disclosed. It is to be understood that the present invention is not limited to the particular rectangular cross-sectional configuration as disclosed but that other cross-sectional geometrical configurations such as a square, a circle, or an ellipse can be utilized to incorporate the novel features of the present invention.

Tank 2 in the advantageous disclosure of the present invention is comprised of two identical sections 3 and 4 joined in mirror relationship. Each section includes a pair of walls 5 and 6 normally disposed to each other and connected along the longitudinal edges thereof as at 7. In the instant embodiment the walls can be formed from the same sheet of material which

is turned at right angles at 7. To provide for further strength, each of the walls can include longitudinally extending spaced ribs 8 therealong, as is known in the art. Sections 3 and 4 are further provided with at least one pair of anti-slosh baffle members 9 which extend from the inner walls of each section in a plane substantially normal to the walls with the free edge of each anti-slosh baffle member 10 extending diagonally from one longitudinal edge of its section to the other. It is to be noted that the anti-slosh baffle member 9 of one section is positioned so as to be disposed in the same plane as and opposite the anti-slosh baffle member of the other section when sections 3 and 4 are fastened in mirror relationship along their edges. It further is to be noted that the anti-slosh baffle members are not only in aligned relationship in the same plane but in addition are spaced from each other to form slot 11 therebetween. This slot 11 serves as a flow-through slot for the materials to be stored in the tank and extends diagonally across the longitudinal body of the tank. It is to be noted that anti-slosh members 9 not only serve for the purposes of preventing sloshing but in addition serve as structural strengthening members for the joined sections forming the overall tank body when assembled. It is to be understood that the edges of the sections can be joined together by any one of several means, such as seam welding or spot welding with appropriate sealing materials inserted therealong. Once the tank body is assembled appropriate end wall members 18 can be fastened to complete the overall assembly.

As can be seen in the drawing, each anti-slosh baffle 9 is provided with a flange border member 13, which abuts against the inner wall of the housing section to which it is joined.

As also can be seen in FIG. 1 of the drawing, the upper portion of tank 2 can be provided with an appropriate right angle venting tube 14 and an appropriate inlet opening 16 for introduction of the material to be stored in the tank. In addition, a drain device 17 can be provided at the lower portion of the tank to permit drainage of material without requiring manipulation of the tank.

From the above description, it can be seen that sections 3 and 4 with body strengthening baffles 9 inserted therebetween can be readily assembled in mirror image relation in a straight forward and economical manner with a minimum of operational steps and a minimum of materials to provide a structurally stable storage tank which at the same time is equipped to prevent anti-sloshing of material within the tank.

The invention claimed is:

1. A storage tank comprising a pair of longitudinally extending housing sections joined together along abutting longitudinal edges of said sections to form a longitudinal body portion of said tank housing, each section including a pair of walls connected along their abutting longitudinal edges, each section further including anti-slosh baffle means extending from the inner surfaces of said walls in a plane substantially normal to said walls with the free edge of said anti-slosh baffle means extending diagonally from one longitudinal edge of its section to the other, said anti-slosh baffle means of one section being disposed in a common plane opposite the anti-slosh baffle means of the other section in aligned spaced relationship therefrom to form a flow-through slot therebetween extending diagonally across the longitudinal body of said housing; and opposed end walls fastened to said joined sections to form said storage tank.

2. The apparatus of claim 1, said anti-slosh baffle means having a flanged border member therealong facingly abutting said inner wall of the housing section to which it is joined.

3. The apparatus of claim 1, said housing sections being identical in configuration and joined in mirror relationship to each other.

4. The apparatus of claim 3, said storage tank being rectangular in its cross-sectional configuration.

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