My invention relates to tanks and more particularly to vehicle tanks and means for discharging the liquid contents thereof.

In vehicle tanks it is often difficult to discharge the same completely because of the fact that the vehicle carrying the tank may be located on ground that is inclined at the time the tank is being discharged. It is a purpose of my invention to provide a discharge and drainage means for vehicle tanks such that the same can be completely discharged even if the same are standing on uneven ground, such as on a street or roadway that is inclined at a grade as great as the steepest of those ordinarily encountered on roadways and streets.

Ordinarily vehicle tanks are provided with partitions dividing the same into compartments, and my invention is shown as being applied to such a tank. My improvements comprise inclined bottom portions in each of said compartments leading to a discharge pipe connection, the inclination of said bottom portions being such as to be slightly greater than the greatest inclination of a roadway or street ordinarily encountered. The inclination of said bottom is, of course, lengthwise of the tank vehicle, as the tank curvature crosswise thereof will ordinarily take care of any inclination of the ground crosswise thereof. In the preferred form of the invention, however, the inclined bottom portions are struck downwardly from the bottom of the tank and form longitudinal extensions of a sump with which the discharge pipe or conduit connects. These downwardly struck portions preferably extend from the sump to a point in close adjacency to the end walls of the compartment, and taper both in width and depth gradually from said sump toward the end walls.

Other objects and advantages of my invention will appear as the description of the drawing proceeds. I desire to have it understood, however, that I do not intend to limit myself to the details of structure 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 drawing:

Fig. 1 is a fragmentary view of a tank partly in elevation and partly in section, showing my improvements applied thereto.

Fig. 2 is a fragmentary horizontal sectional view of the tank partly broken away taken near the bottom thereof, and

Fig. 3 is a fragmentary view thereof partly in elevation and partly in vertical section, the section being taken substantially on the line 3—3 of Fig. 1.

Referring in detail to the drawing, a vehicle tank is shown comprising curved shell portions 5 which combine with the sheets 6 to form compartments 7 in said tank. The sheets 6 may be either partition sheets or end sheets of the tank. In either case the sheets are extended downwardly at 8 to form supporting members or bolsters for the tank and the lower edges thereof may be provided with horizontal flanges 9. Each compartment of the tank is provided with a sump 10 and the tank is provided with sloping bottom portions inclined downwardly from adjacent the end walls 6 of the compartments to said sump.

In the preferred form of the invention the sloping bottom portions of the tank are formed by striking a portion of the shell of the tank downwardly or outwardly at the same time that the sump 10 is formed, said inclined outstruck portions being indicated by the numeral 11 in the drawing and having inclined side walls 12, whereby the grooves or depressions 13 formed in the bottom of the tank thereby are substantially V-shaped in transverse section and decrease gradually in depth and width from the sump 10 to the ends 14 thereof adjacent the sheets 6.

The walls of the depressions merge with normal curvature of the shell of the tank near the end walls of the compartment formed by the sheets, said depressions extending as near as practicable in the manufacture of the same, to said end walls. The walls of said depressions also merge with the conical wall of the sump 10. Thus a sump is provided with elongations extending from the same lengthwise of the tank to points adjacent the sheets.
or end walls 6 of the compartment, and these extensions gradually decrease in width and depth from the sump to said sheets 6. The extensions formed by the outstruck portions 11 are not quite as wide at the point where the same empty into the sump as the diameter of the sump, as will be evident from Fig. 2. The shell portion of the tank is preferably flanged outwardly at 13 and these outwardly flanged portions 15 are preferably welded to the sheets 6 at 16.

A pipe or conduit 17 extends from each of the sumps 10 and each of said pipes or conduits is provided with a funnel-shaped end portion 18 welded to the sump 10 at 19, said sump having an opening therein aligning with the open end of the pipe 17. The conduits or pipes 17 extend through openings in the extensions 8 of the sheets 6 and are secured thereto as by welding as indicated at 20, in Fig. 1.

The inclination of the portions 11 is such that it is somewhat greater than the steepest grades ordinarily encountered on roadways and streets, and it is obvious that these inclined bottom portions of the tank can be inclined more or less as conditions may require, if desired, as long as the inclination is such as to assure drainage of the tank whether standing on level ground or on any inclination ordinarily encountered.

Having thus described my invention what I claim and desire to secure by United States Letters Patent is

1. In a vehicle tank, a transversely curved shell portion and transverse wall portions dividing said tank into a plurality of compartments, said compartments being arranged in a row lengthwise of said tank, said shell portion having a downwardly depressed portion in the bottom thereof comprising a central sump portion spaced from said transverse wall portions and longitudinal extensions tapering in width and gradually decreasing in depth from said central sump portion to merge with the curved shell portion at points adjacent said transverse wall portions.

2. In a vehicle tank, a longitudinal shell portion, transverse upright walls cooperating with said shell portion to form a tank compartment, said compartment having a bottom wall varying in depth transversely of said tank from a portion of maximum depth, said tank having a discharge outlet in the bottom thereof at said portion of maximum depth, said bottom wall having inclined portions extending from adjacent said transverse wall portions downwardly lengthwise of said tank to said outlet.

3. In a vehicle tank, a shell portion transversely curved to provide a transversely curved bottom wall for said tank, transverse sheets cooperating with said shell portion to divide said tank into a plurality of compartments arranged in a row lengthwise of said tank, said bottom wall in each compartment having a discharge outlet therein and having inclined portions extending from adjacent said transverse sheets downwardly lengthwise of said tank to said outlet.

4. In a vehicle tank, a longitudinal shell portion, transverse sheets cooperating with said shell portion to divide said tank into a plurality of compartments arranged in a row lengthwise of said tank, the bottom wall of each compartment varying in depth transversely of said tank from a portion of maximum depth, each compartment having a discharge outlet at said portion of maximum depth, said bottom wall of each compartment having inclined portions extending longitudinally of said tank from adjacent said transverse wall portions downwardly to said outlet.

5. In a vehicle tank, a shell portion transversely curved to provide a transversely curved bottom wall for said tank, transverse sheets cooperating with said shell portion to divide said tank into a plurality of compartments arranged in a row lengthwise of said tank, said bottom wall in each compartment having a sump struck downwardly therefrom, and having inclined wall portions extending lengthwise of said tank from adjacent said transverse sheets downward to said sump, and a discharge conduit extending from said sump.

In testimony whereof, I hereunto subscribe my name this 21st day of February, 1929.

ANDREW A. KRAMER.