May 14, 1929. H. B. DAVISS 1,713,170

FLUID STABILIZER

Filed Sept. 7, 1928

Fig. 1.

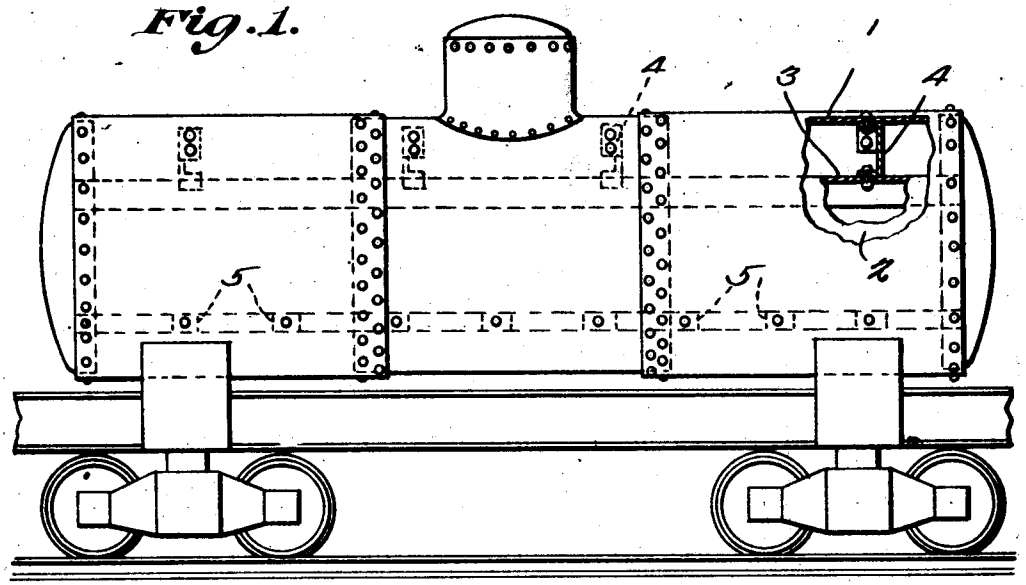
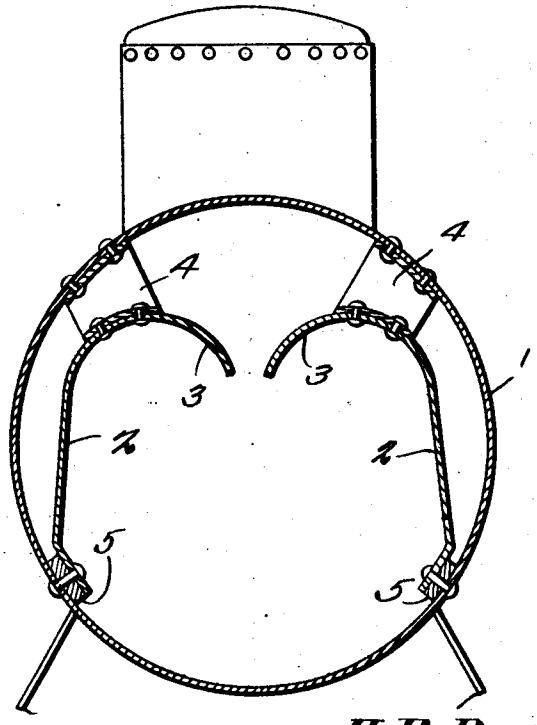


Fig. 2.



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Patented May 14, 1929. 1,713,170

UNITED STATES PATENT OFFICE.

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FLUID STABILIZER.

Application filed September 7, 1923. Serial No. 304,547.

This invention relates to a stabilizing construction for use in tank cars.

As is well known to those skilled in the art it frequently happens that, when large tank cars filled with oil or other liquids are rounding curves at high speeds in transit, the liquid contents of the cars tend to slosh upwardly and outwardly by centrifugal force, thereby throwing the cars out of balance, and frequently overturning them with disastrous results.

It is an object of the present invention to arrange within a tank at the sides thereof deflecting shields which will hold the liquid down and in place and prevent the objectionable results heretofore stated.

A further object is to provide a stabilizing structure which does not reduce the capacity of the tank to an objectionable extent nor produce an objectionable increase in the weight of the tank.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings,

Figure 1 is a side elevation of a tank car embodying the present improvement, a portion being broken away.

Figure 2 is an enlarged transverse section through the tank.

Referring to the figures by characters of reference, 1 designates a cylindrical tank such as commonly used by railways for transportation of oil and other fluids. Arranged within the tank at each side thereof is a deflecting shield in the form of a plate 2 extending longitudinally of the tank and secured at its lower edge to the tank at one side of the bottom portion thereof. The lower edge of the plate is spaced from the side or wall of the tank by blocks 5 so as to permit the return of all fluid to the bottom of the tank. The plate is preferably flat for a portion of its height and then merges into an inwardly and downwardly curved upper portion 3 which is held fixedly to the tank by means of interposed brackets 4 riveted to the plate and to the tank. The free upper edges of the shield plates come close together and the upwardly extending flat portions of the plates preferably converge slightly in an upward direction and are of course spaced from the side and top portions of the tank. The spacing blocks 5 hold the bottom edges of the deflecting shields or plates any desired distances from the wall of the tank, thus permitting free return of liquid to the bottom of the tank at all times.

When the tank is partly filled with liquid and is subjected to side pressure therefrom, as while rounding a curve, the liquid, instead of sloshing upwardly along one side of the tank, will be crowded downwardly by the upstanding plate 2 and the inwardly curved upper portion 3 thereof, thus maintaining the center of gravity at the lowest possible point. Consequently the liquid will be stabilized and all danger of wrecks, due to overbalancing a tank, is eliminated.

The shields constituting the present invention can be used in tanks of standard construction, and may be placed in an already constructed standard tank car by removing one end or head of the tank. The upstanding plates 2, interposed brackets 4, and spacing blocks 5 are then inserted and secured after which the head is replaced.

What is claimed is:

1. The combination with a tank car, of means therein for preventing upward sloshing and outward pressure of liquid contents while in transit and rounding curves, said means including an upstanding plate within each side portion, said plates having inwardly and downwardly curved upper portions.

2. The combination with a cylindrical tank of the portable type, of means therein for stabilizing the liquid contents thereof, said means including plates within the side portions of the tank secured at their lower edges to the tank and extending longitudinally of the tank, each of said plates having an inwardly and downwardly curved upper portion.

3. The combination with a portable cylindrical tank, of stabilizing means therein including substantially flat plates in the tank adjacent the sides thereof and secured along their bottom edges to the tank, said plates being extended longitudinally of the tank and converging upwardly.

4. The combination with a portable cylindrical tank, of stabilizing means therein including substantially flat plates in the tank adjacent the sides thereof and secured along their bottom edges to the tank, said plates being extended longitudinally of the tank and having their upper portions extended inwardly and downwardly toward each other, and means for connecting the upper portions of the plates to and spacing them from the tank.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature this September 4th, 1928.

HUGH B. DAVISS.