

provided with a thread. This arrangement is very objectionable, especially in very cold weather. These tank cars are not provided with steam heating pipes, and the outlet being only 4 inches and exposed to the cold weather, it takes a long time to empty the car, and it is almost impossible to empty it completely, the bottom of the car being level, which means that a great quantity of the thick oil stays inside. This quantity may amount to several hundred gallons, according to the severity of the weather, and, of course, makes quite a reduction in the capacity of the car, outside of having to carry this quantity of oil back and forth on the line.

To obviate all the above objections, a tank car has been designed as follows:—

1. On account of the long haulage, the tank car has a capacity of 10,000 Imp. gal. The dome is provided with an opening of 18 in. x 36 in., the cover being hinged and hermetically closed by means of eye bolts and hand nuts.

starting from the centre will travel at once towards the two ends, and then come back to the centre around the outlet valve which is provided with a steam jacket, the condensation water being discharged on the ground through a "sarco" valve with ample capacity to avoid any water remaining in the pipes.

4. To solve the third condition, that is to say, the complete emptying of the car, the tank is provided with a trough running longitudinally between the bolsters. This trough, 8 inches wide, riveted to the bottom of the tank, has a semi-cylindrical bottom, and a depth of 6 inches at the outside extremity and 1 foot in the centre. The outlet valve is riveted to this trough. Six 6-inch diameter holes and one 6-inch x 18-inch hole in the centre will let the oil run through the whole length of the car into the trough. The return steam pipe is placed in the bottom of this trough, and is connected to the steam jacket of the outlet valve. With such an arrangement the oil will be heated

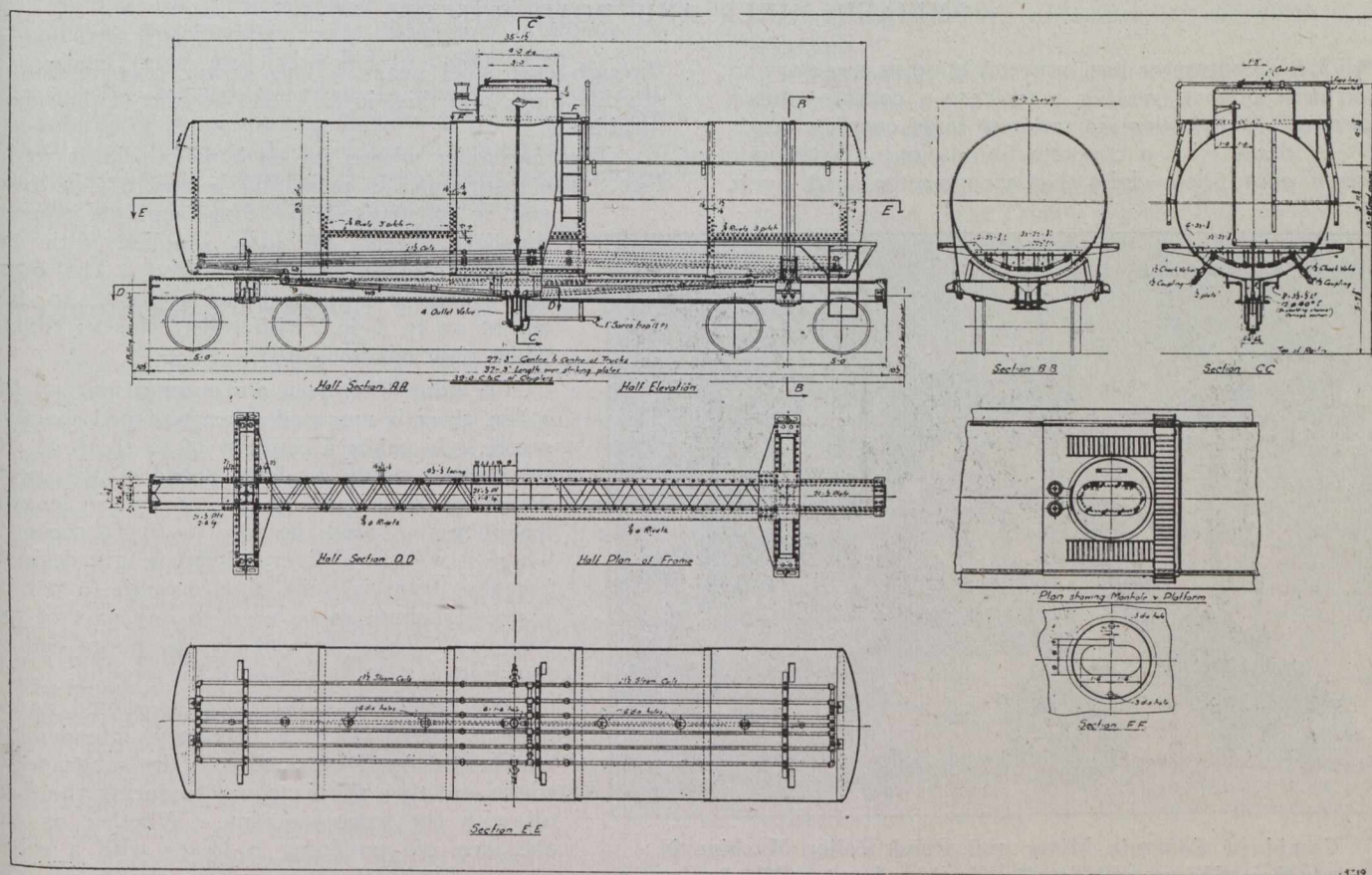


Fig. 2.—Design of G.T.P. Fuel Oil Tank Car.

This arrangement will allow an easy opening of the cover in any kind of weather. The opening in the dome is long enough to facilitate the spotting of the car at the oil delivery. The car is so designed that, when arriving at a fuel station it can be spotted, heated and emptied completely, all these operations being done in the shortest possible time.

2. To solve the first condition, that is to say, the spotting of the cars, which will be three at a time, the car has been provided with the outlet valve exactly in the centre, and the steam inlets for heating the car, also placed exactly on centre, one on each side of the car. In short, the car has been designed so as it can be headed either way.

3. To solve the second condition, i.e., heating, the car is provided with the piping so arranged that the steam

thoroughly, and, therefore, run quickly, and the 6-inch fall of the trough towards the outlet valve will allow the car to be emptied completely.

In designing this car, the trough placed under the tank was considered in figuring the thickness of the shell of the tank, and it was found that the strength of such section was 30% stronger than similar section of tank without the trough. This allowed us to make this tank with a shell of 5/16 inch throughout, except the two ends which are 3/8 inch in thickness.

The body of the car is composed of a centre sill and two body bolsters, the whole resting on trucks. The centre sill, 37 feet and 3 inches in length out to out of striking plates, which means 39 feet c. to c. of couplings, is made of two 12-inch at 40 lbs. ship building channels (Carnegie section) spaced 12 1/8 inches back to back. The