April 12, 1932. J. R. FOULDER 1,853,897

TANK FOR LOCOMOTIVE TENDERS

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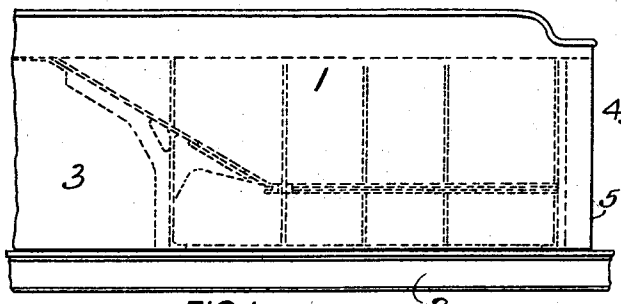
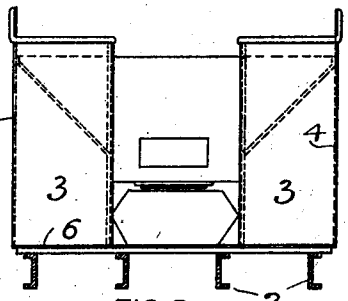
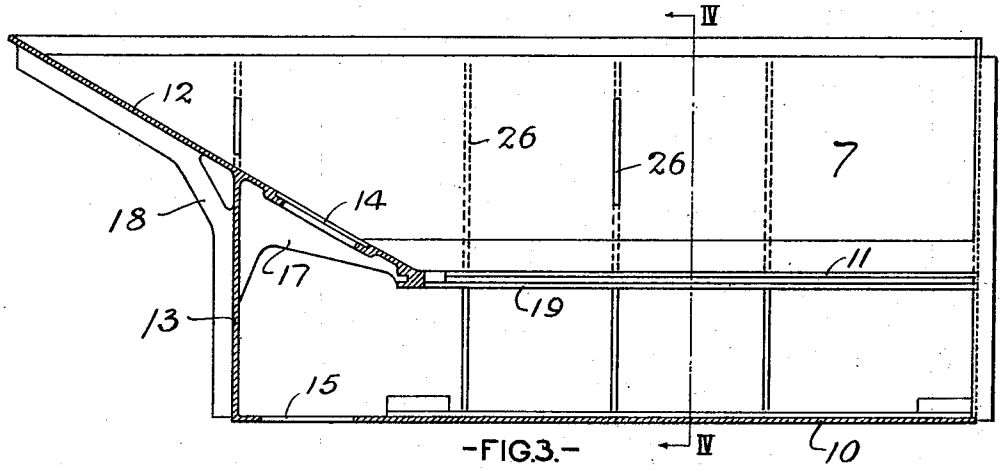


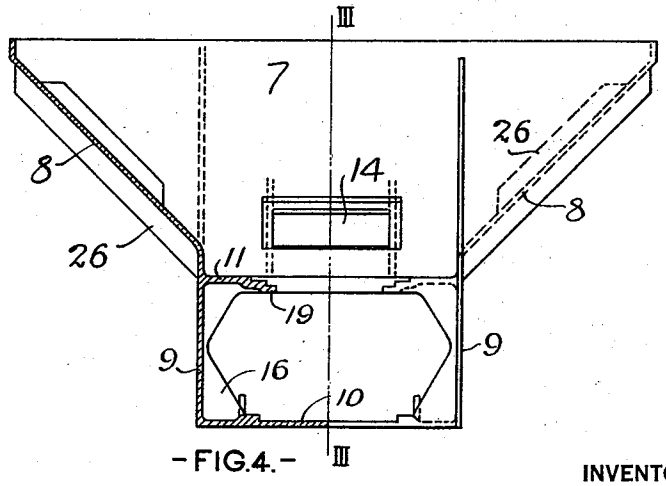

-FIG.1.-




-FIG.2.-




-FIG.3.-




-FIG.4.-

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TANK FOR LOCOMOTIVE TENDERS

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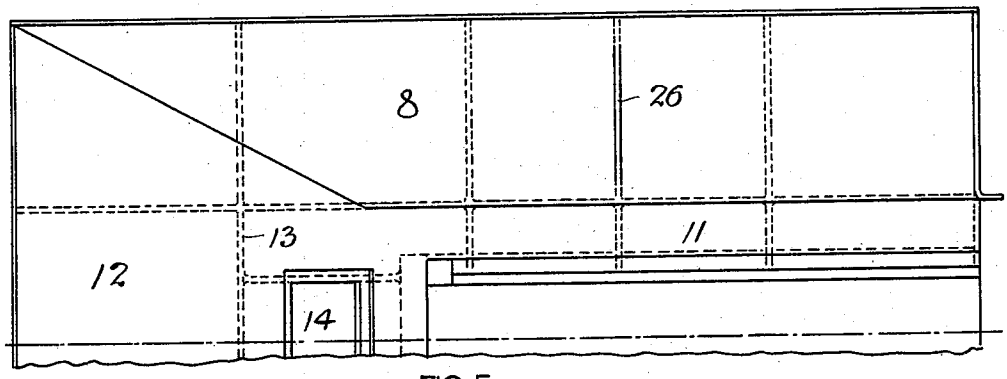
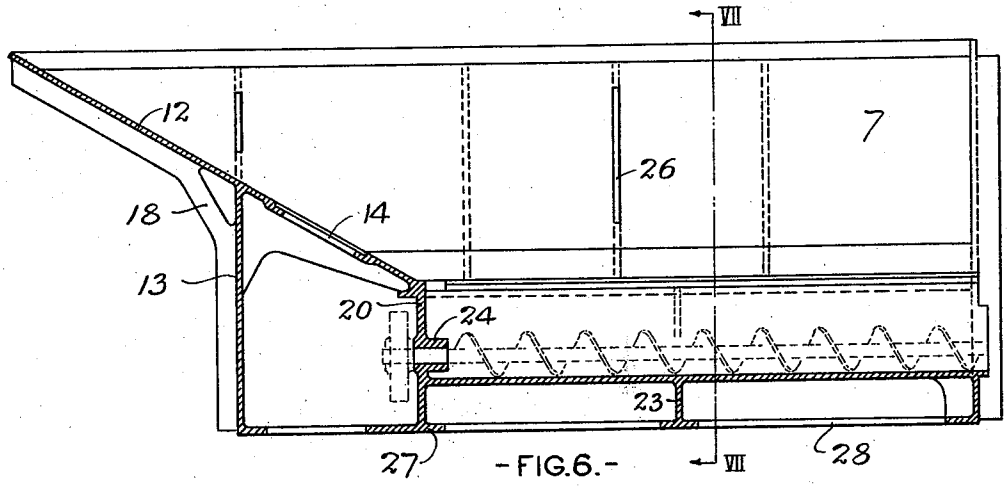
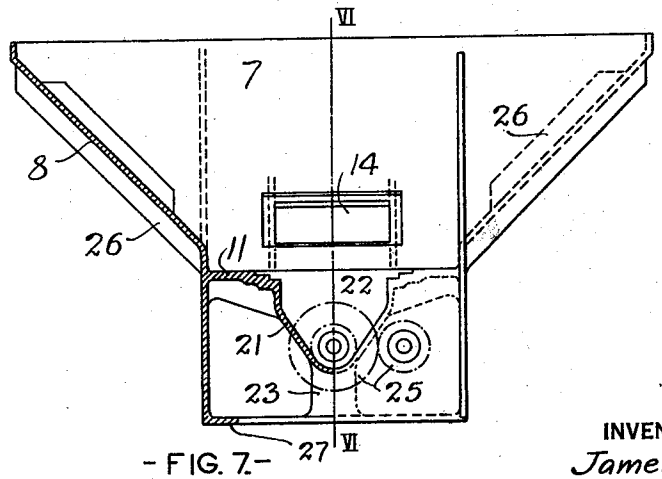



- FIG. 5. -




- FIG. 6. -




- FIG. 7. -

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# UNITED STATES PATENT OFFICE

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## TANK FOR LOCOMOTIVE TENDERS

Application filed March 11, 1931. Serial No. 521,770.

The present invention relates to improvements in the tanks of locomotive tenders.

Heretofore, in locomotive practice, the fuel chambers of locomotive tender tanks have been fabricated or built up of metal plates riveted or welded together in their positions in the tank. Due to the acid formed by the affects of the elements on the coal, such plates have been subjected to rapid deterioration from rust and other chemical reactions. The cost of cutting and fitting the plates and riveting and bolting the same has been substantial and replacement or repair of the plates has involved great expense.

The object of this invention is to provide a tender tank having a fuel chamber disposed therein, formed as an integral casting, which structure will avoid the aforesaid undesirable characteristics of the fabricated chambers and materially reduce both the cost of manufacture and maintenance of the tender tank. Another object of the invention is to provide such a chamber having a fuel conveyor compartment also formed integrally therewith. And, a further object is to provide such a chamber having a conveyor trough and conveyor shaft bearing also formed integrally with the fuel chamber.

The invention is illustrated in the accompanying drawings, in which:

Figure 1 is a partial side view of the locomotive tender showing the invention applied thereto; Fig. 2 is a front view of the same; Fig. 3 is an enlarged longitudinal section of the fuel chamber on the line III—III of Fig. 4; Fig. 4 at the right half is a front end view of Fig. 3, and at the left half is a section on the line IV—IV of Fig. 3; Fig. 5 is a half plan view of the same; Fig. 6 is a longitudinal section on the line VI—VI of Fig. 7, showing a modified form of the fuel chamber; and Fig. 7, at the right side is a front end view and at the left side is a section on the line VII—VII, of Fig. 6.

In the practice of the invention, referring descriptively to the specific embodiment thereof which is herein exemplified, a locomotive tender tank, indicated generally by the numeral 1, is supported on the longitudinal beams 2 of the tender frame and is connected thereto in the usual manner. The tank embodies the usual water section 3, formed by side plates 4, which are turned at their front ends to form front plates 5, bottom plates 6, and the usual rear and roof plates (not shown), all of which plates are suitably attached together in the usual manner.

The fuel chamber is formed as an integral one piece casting, indicated generally by the numeral 7, disposed within the tank and secured in place by welding or rivets in the usual manner. The chamber comprises side inclined walls 8, extending from the upper outer ends of the tender tank inwardly downward to vertical walls 9, which are connected at their lower extremities by a horizontal bottom wall 10. At the upper ends of the walls 9, inwardly extending longitudinal horizontal walls 11 are disposed, a space being left between their inner edges for the passage of fuel therethrough to the rectangular conveyor compartment formed by the walls 9, 10 and 11.

At the rear of the fuel chamber, an inclined wall 12 extends from the top of the tender tank, inwardly downward to the rear end of the walls 11, the walls 8, 11 and 12, forming a hopper compartment for the fuel chamber. Spaced to the rear of the connection of walls 11 and 12, a vertical wall 13 extends downward from the said wall 12 to the rear end of the bottom wall 10, closing the conveyor compartment. An opening 14 is provided in the wall 12 between its connections to the walls 11 and 13, and an opening 15 is provided at the rear end of the bottom wall 10, the openings affording access to the conveyor compartment and being provided with suitable cover plates (not shown). Strengthen-

ing ribs are provided at suitable points of jointure of the walls as indicated at 16, 17 and 18, and the inclined walls 8 are reinforced by ribs 26. The inner edges of the horizontal walls 11 are formed with flanges 19 adapted to engage cover members (not shown), in such places as may be desired.

In Figures 6 and 7, a modified form of the conveyor compartment is illustrated. The said compartment is closed by a wall 20 providing a completely enclosed chamber to the rear of the same and walls 21 are extended downwardly and inwardly from the inner edges of the walls 11 meeting at their lower ends at the center of the tank and forming a conveyor trough beneath the open passageway 22. Bracing legs 23 are formed between the bottom wall 27 and the bottom of the trough. The rear wall 20 closes the end of the trough and forms a walled chamber to the rear of the same. The said wall 20 is formed with a bearing 24 adapted to support the rear end of a conveyor shaft, longitudinally disposed in the trough and having a screw formed thereon, as indicated in the dotted lines (Fig. 6). Suitable gears 25 are connected to the shaft for operating the same, within the said chamber to the rear of the wall 20, said chamber providing a housing for such gearing. The bottom wall 27 of this structure is formed with openings 28 for the purpose of reducing the weight of the casting.

While there has, hereinbefore, been described and illustrated, preferred forms of construction of the invention, it will be obvious that many and various changes in procedure, form, arrangement, and construction of parts may be resorted to and that this invention, therefore, is not limited to the particular embodiment disclosed but includes all and any such changes and modifications as come within the spirit and scope of the invention as described in the appended claims.

The invention claimed and desired to be secured by Letters Patent is:

1. A locomotive tender tank having a fuel chamber formed as a separate unit disposed within the same, said chamber comprising an integral structure.

2. A locomotive tender tank having a fuel chamber formed as a separate unit disposed within the same, said chamber comprising an integral casting having downwardly and inwardly inclined side and rear walls.

3. A locomotive tender tank having a fuel chamber formed as a separate unit disposed within the same, said chamber comprising an integral casting having downwardly and inwardly inclined side and rear walls forming a hopper, and an oblong compartment extending longitudinally thereof below said hopper providing a conveyor compartment.

4. A locomotive tender tank having a fuel chamber formed as a separate unit disposed within the same, said chamber comprising an integral casting having downwardly and inwardly inclined side and rear walls and horizontal bottom walls forming a hopper compartment, and vertical rear and side walls extending downwardly from said inclined walls and a horizontal bottom wall for said vertical walls forming an oblong conveyor compartment longitudinally extending beneath the hopper compartment.

5. A locomotive tender tank having a fuel chamber formed as a separate unit disposed within the same, said chamber comprising an integral casting having downwardly and inwardly inclined side and rear walls and horizontal bottom walls forming a hopper compartment, and vertical rear and side walls extending downwardly from said inclined walls and a horizontal bottom wall for said vertical walls forming an oblong conveyor compartment longitudinally of the hopper compartment, said rear inclined wall of the hopper compartment being provided with a covered opening above the conveyor compartment to permit access thereto.

6. A locomotive tender tank having a fuel chamber formed as a separate unit disposed within the same, said chamber comprising an integral casting having downwardly and inwardly inclined side and rear walls and horizontal bottom walls forming a hopper compartment, and vertical rear and side walls extending downwardly from said inclined walls, and a horizontal bottom wall for said vertical walls forming an oblong conveyor compartment longitudinally extending beneath the hopper compartment, said bottom wall of the conveyor compartment being provided with a covered opening to permit access thereto.

7. A locomotive tender tank having a fuel chamber formed as a separate unit disposed within the same, said chamber comprising an integral casting having downwardly and inwardly inclined side and rear walls and horizontal bottom walls forming a hopper compartment, and vertical rear and side walls extending downwardly from said inclined walls and a horizontal bottom wall for said vertical walls forming an oblong conveyor compartment longitudinally extending beneath the hopper compartment, said rear inclined wall of the hopper compartment and said bottom wall of the conveyor compartment being provided with covered openings permitting access to said conveyor compartment.

8. A locomotive tender tank having a fuel chamber formed as a separate unit disposed within the same, said chamber comprising an integral casting having downwardly and inwardly inclined side and rear walls and horizontal bottom walls forming a hopper compartment, vertical side and rear walls extending downwardly from said inclined walls of the hopper compartment and a bottom wall

forming a conveyor compartment, said bottom walls of the hopper compartment having a longitudinal open space therebetween, and a conveyor trough formed on said horizontal walls beneath the said longitudinal space.

9. A locomotive tender tank having a fuel chamber formed as a separate unit disposed within the same, said chamber comprising an integral casting having downwardly and inwardly inclined side and rear walls and horizontal bottom walls forming a hopper compartment, vertical side and rear walls extending downwardly from said inclined walls of the hopper compartment and a bottom wall for said vertical walls forming a conveyor compartment, said horizontal bottom walls of the hopper compartment having a longitudinal open space therebetween, a conveyor trough formed on said horizontal walls beneath the said longitudinal space, and a wall at the rear of said trough extending from the bottom walls of the hopper compartment to the bottom wall of the conveyor compartment.

10. A locomotive tender tank having a fuel chamber formed as a separate unit disposed within the same, said chamber comprising an integral casting having downwardly and inwardly inclined side and rear walls and horizontal bottom walls forming a hopper compartment, vertical side and rear walls extending downwardly from said inclined walls of the hopper compartment and a bottom wall for said vertical walls forming a conveyor compartment said bottom walls of the hopper compartment having a longitudinal open space therebetween, a conveyor trough formed on said horizontal walls beneath the said longitudinal space, and a wall at the rear of said trough extending from the bottom walls of the hopper compartment to the bottom wall of the conveyor compartment, said rear wall being provided with a bearing for supporting a conveyor shaft.

11. A structure for dividing a locomotive tender tank into a water compartment and a fuel compartment, said structure comprising a separately formed integrally cast unit having a plurality of walls forming a hopper compartment and a plurality of walls forming a conveyor compartment beneath said hopper compartment.

12. A locomotive tender comprising a water compartment and a solid fuel compartment, said compartments being divided by walls comprised in a separately formed one-piece unit comprising an integrally cast structure having retaining walls for the fuel compartment and the top and side walls of the water compartment, a conveyor trough formed at the bottom of the unit, and a walled compartment to the rear of said trough adapted for housing the gearing for said conveyor.

13. A locomotive tender comprising a centrally disposed solid fuel compartment and outer water compartments, one on each side of the fuel compartment, said fuel and water compartments being separated by a separately formed unit comprising an integrally cast structure having walls and means rigidly holding the said walls in spaced relation, each of said walls being formed of a lower vertical section and an upper section extending from the upper edge of the lower section upwardly and outwardly.

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