H. M. PFLAGER.

LOCOMOTIVE TENDER FRAME.

APPLICATION FILED JAN. 4, 1913.

1,078,638.

Patented Nov. 18, 1913.

2 SHEETS—SHEET 1.

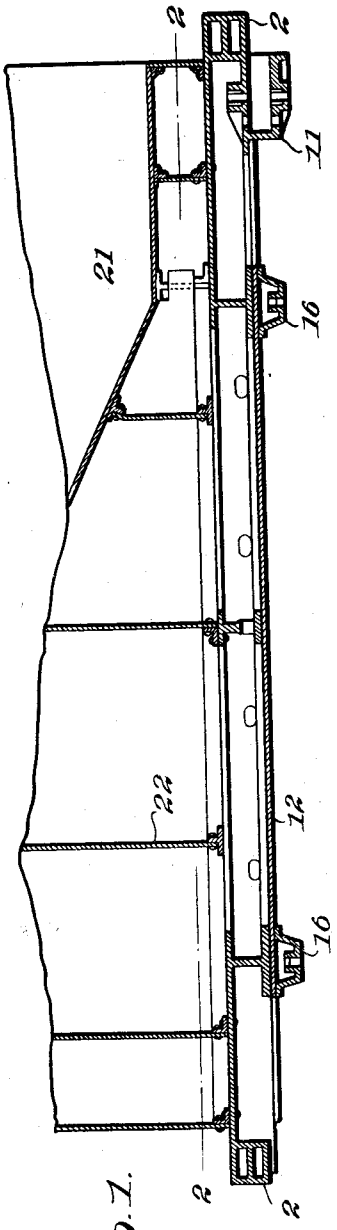


Fig. 1.

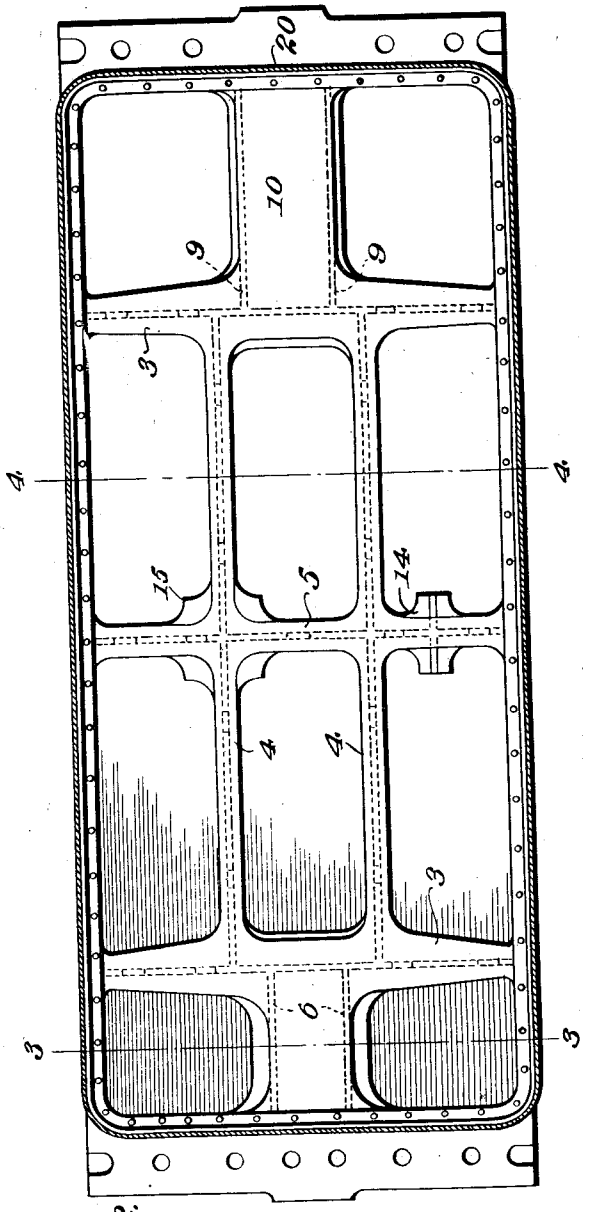


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

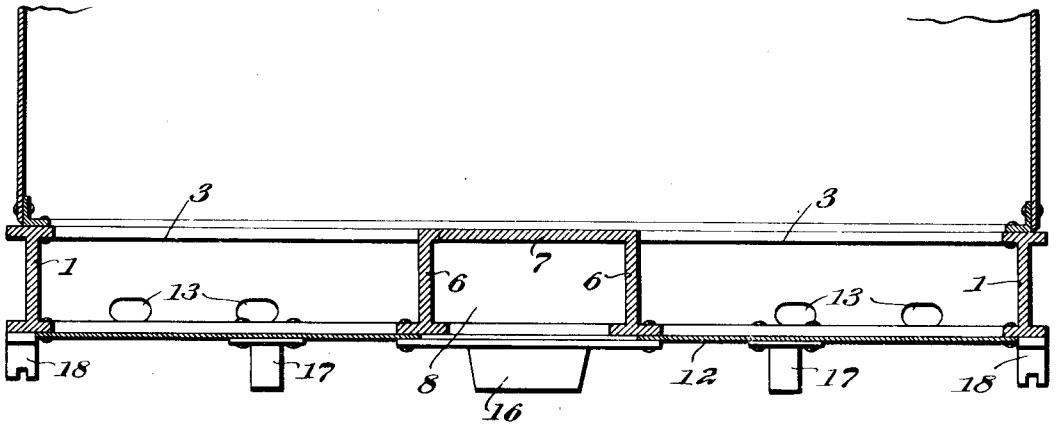
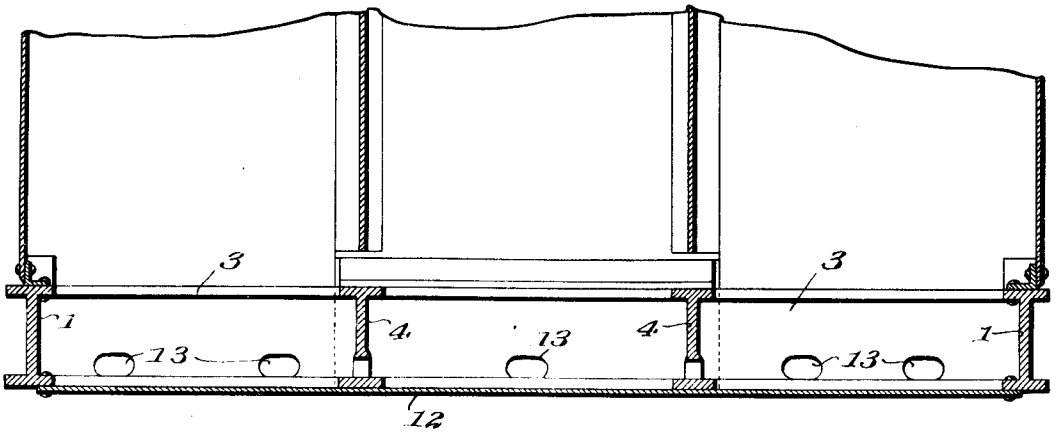


Fig. 4.



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UNITED STATES PATENT OFFICE.

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LOCOMOTIVE-TENDER FRAME.

1,078,638. Specification of Letters Patent. Patented Nov. 18, 1913.

Application filed January 4, 1913. Serial No. 740,186.

To all whom it may concern:

Be it known that I, HARRY M. PFLAGER, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Locomotive-Tender Frames, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section taken longitudinally through the center of the lower portion of a locomotive tender of my improved construction. Fig. 2 is a horizontal section taken approximately on the line 2—2 of Fig. 1 and showing the tender underframe in plan view. Fig. 3 is an enlarged transverse section taken approximately on the line 3—3 of Fig. 2. Fig. 4 is an enlarged transverse section taken approximately on the line 4—4 of Fig. 2.

This invention relates generally to locomotive tenders, and more particularly to the tender underframe, and the arrangement or combination between said underframe and the upper portion or body of the tender.

The principal object of my invention is to materially lower the center of gravity of the tender and to accomplish this object I propose to practically inclose the entire underframe, which is preferably formed in a single piece, substantially within the body or tank portion of the tender thereby forming water space within the underframe.

As tenders are commonly constructed the body of the tender which forms the tank or cistern generally rests upon a flooring, which latter rests upon the underframe, and thus the entire water space within the tank or cistern is located wholly and a substantial distance above said underframe. In such construction the center of gravity of the tank when full is comparatively high, and in my improved construction, I propose to close the bottom of the tender underframe, thereby forming a series of communicating water compartments within the frame between the longitudinally and transversely disposed members forming said underframe, which water compartments communicate with the main compartment of the tank positioned upon the underframe, which arrangement not only materially lowers the center of gravity of the tender, but provides an exceptionally strong, rigid, and durable structure.

With the above and other objects in view, my invention consists in certain novel features of construction and arrangement of parts hereinafter more fully described and claimed.

As shown in the drawings, the tender underframe is formed in a single piece and comprises a pair of flanged side sills 1, end or buffing sills 2, which are preferably hollow, a pair of bolster members 3, preferably of I-beam shape in cross section, a pair of flanged center sills 4 between the bolster, and a centrally arranged transversely disposed cross sill 5. A pair of vertically disposed longitudinally extending parallel walls 6 extend from one of the end sills 2 to the adjacent bolster 3, and the upper portions of these walls are united by a horizontally disposed plate 7, thereby forming a pocket 8 between said walls 6, which pocket is adapted to receive suitable draft rigging. At the opposite end of the underframe, a pair of vertically disposed walls 9 extend between the corresponding bolster and end sill, the upper edges of which walls are united by a top plate 10. Formed on the undersides of the walls 9 and the underside of the corresponding end sill 2 is a housing 11 which is adapted to receive a coupler shank (not shown.)

Fixed to the underside of the underframe in any suitable manner, preferably by means of rivets, is a bottom plate 12 which closes all of the open spaces between the longitudinally and transversely disposed members forming the underframe, with the exception of the draft rigging pocket 8 and the space between the walls 9 and below the plate 10. Suitable openings, such as 13, are formed through the lower portions of the webs of the bolsters 3, sills 4 and cross sill 5, for the purpose of establishing communication between the various spaces in the underframe, thereby permitting the water to circulate or pass from one space or compartment to the other. Formed integral with the lower portion of the cross sill 5 are horizontally disposed plates 14 and 15 to which are adapted to be fixed the air brake cylinder, auxiliary tank, and other parts usually applied to the underside of the tender. Fixed to the undersides of the bolsters 3 are center bearings

16 and side bearings 17, and fixed to the undersides of the side sills 1 at suitable points are safety chain hanger brackets 18. Fixed in any suitable manner to the tops of the side sills 1 and the tops of the end or buffing sills 2 are the lower edges of the side and end walls 19 and 20 respectively, which form the body or tank of the tender. This body or tank is of the usual or any well known construction and is provided at one end with a fuel compartment 21. Located on the interior of the tank above the underframe is a series of transversely disposed bulk heads 22. By closing the underside of the underframe with a plate and fitting the lower edges of the side and end walls of the tank to the side and end sills of the underframe, practically the entire space within the underframe between the longitudinally and transversely disposed members thereof is utilized as water space and as such space is of considerable area, a comparatively large amount of water can be accommodated, and thus the center of gravity of the tender is materially lowered.

It will be readily understood that minor changes in the size, form and construction of the various parts of my improved tender can be made and substituted for those herein shown and described without departing from the spirit of my invention, the scope of which is set forth in the appended claims.

I claim:

1. In a locomotive tender a tank and an underframe upon which the tank is mounted which underframe constitutes a part of the tank.

2. A locomotive tender comprising a tank, an underframe therefor, which underframe is located above the bottom plate of the tank.

3. A locomotive tender comprising a tank and an underframe therefor, the side and end walls of which combined with the side and end walls of the tank form a water compartment.

4. In a locomotive tender, an underframe, a tank bottom plate applied to the underside thereof, and tank walls fixed to the side and end sills of the underframe.

5. In a locomotive tender, an underframe, the bottom of which is closed to form a series of water compartments within said underframe, and tank walls fixed to and extending upwardly from the side and end sills of the underframe.

6. In a locomotive tender, the combination with an underframe formed in a single piece, a plate applied to the underside of said underframe, and a tank body positioned upon and fixed to said underframe, the interior of which tank communicates with the space within the underframe.

7. In a locomotive tender, the combination with an underframe provided with a series of water spaces, and a tank positioned upon and fixed to said underframe, the chamber within which tank communicates with the water spaces in the underframe.

8. In a locomotive tender, the combination with an underframe having side and end members, of a tank positioned upon and fixed to said underframe, and a plate applied to the underside of the underframe and forming a bottom for the tank.

9. In a locomotive tender, the combination with a tank comprising walls and a bottom plate, of a tender underframe positioned between the bottom plate and the tank walls.

10. In a locomotive tender, a tank and an underframe supporting said tank, which underframe is provided with a series of chambers which communicate with the water space within the tank.

11. The combination with a tender underframe, of a tank bottom plate applied to the underside of the underframe, and tank walls applied to the top of the underframe.

12. In a locomotive tender, the combination with an underframe formed in a single piece and having water spaces, of a tank bottom applied to the underside of said underframe, and tank walls fixed to the top of said underframe.

13. A locomotive tender comprising a tank and an underframe provided with a water compartment, which underframe is substantially inclosed by the tender tank.

14. A locomotive tender comprising a tank and an underframe provided with a series of water compartments, which underframe is substantially inclosed by the tender tank.

15. A locomotive tender comprising a tank and an underframe provided with a water compartment, which underframe is located above the bottom plate of the tender tank.

16. In a locomotive tender comprising a tank an underframe provided with a water compartment, which underframe is located substantially within the tender tank.

17. In a locomotive tender, a tank, and an underframe supporting said tank, which underframe is provided with a series of intercommunicating water spaces which communicate with the water space within the tank.

18. A locomotive tender comprising a tank and an underframe which is substantially inclosed by the tender tank and which is provided with a series of inter-communicating water spaces which communicate with the water space within the tank.

19. In a locomotive tender a tank and an underframe located above the bottom plate of said tank, which underframe is provided with a series of inter-communicating water spaces which communicate with the water space within the tank.

20. In a locomotive tender a tank and an underframe which is located substantially within said tank and which underframe is

provided with a series of inter-communicating water spaces which communicate with the water space within the tank.

21. In a locomotive tender a tank and an underframe therefor the side and end walls of which underframe form parts of the side and end walls of the tank, said underframe being provided with a series of inter-communicating water spaces which communicate with the water space within the tank.

22. As a new article of manufacture, a locomotive tender tank underframe formed in a single piece and having a series of intercommunicating compartments adapted to contain water.

23. The combination with a locomotive tender tank body, of a tender underframe having a series of normally open intercommunicating compartments adapted to contain water, which compartments are in open communication with the water space within the tank body, and a bottom plate applied to said underframe.

24. The combination with a locomotive tender underframe having a series of intercommunicating compartments adapted to contain water, of a tender tank bottom plate applied to the underside of said underframe, and tank walls supported by said underframe.

25. A locomotive tender underframe provided with a chamber adapted to contain water and a tank mounted upon said underframe.

26. A locomotive tender underframe having a plurality of water compartments and a tank mounted upon said underframe.

27. A locomotive tender underframe having a plurality of inter-communicating water compartments and a tank mounted upon said underframe.

28. A locomotive tender comprising an underframe, a tank supported thereby, and a tank bottom plate applied to the underside of the underframe.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 31st day of December, 1912.

HARRY M. PFLAGER.

Witnesses:
HAL C. BELLVILLE,
FRED H. BLANKENHORN.