No. 811,561. PATENTED FEB. 6, 1906.

C. H. HOWARD.

LOCOMOTIVE TENDER FRAME.

APPLICATION FILED NOV. 22, 1905.

Fig. 1.

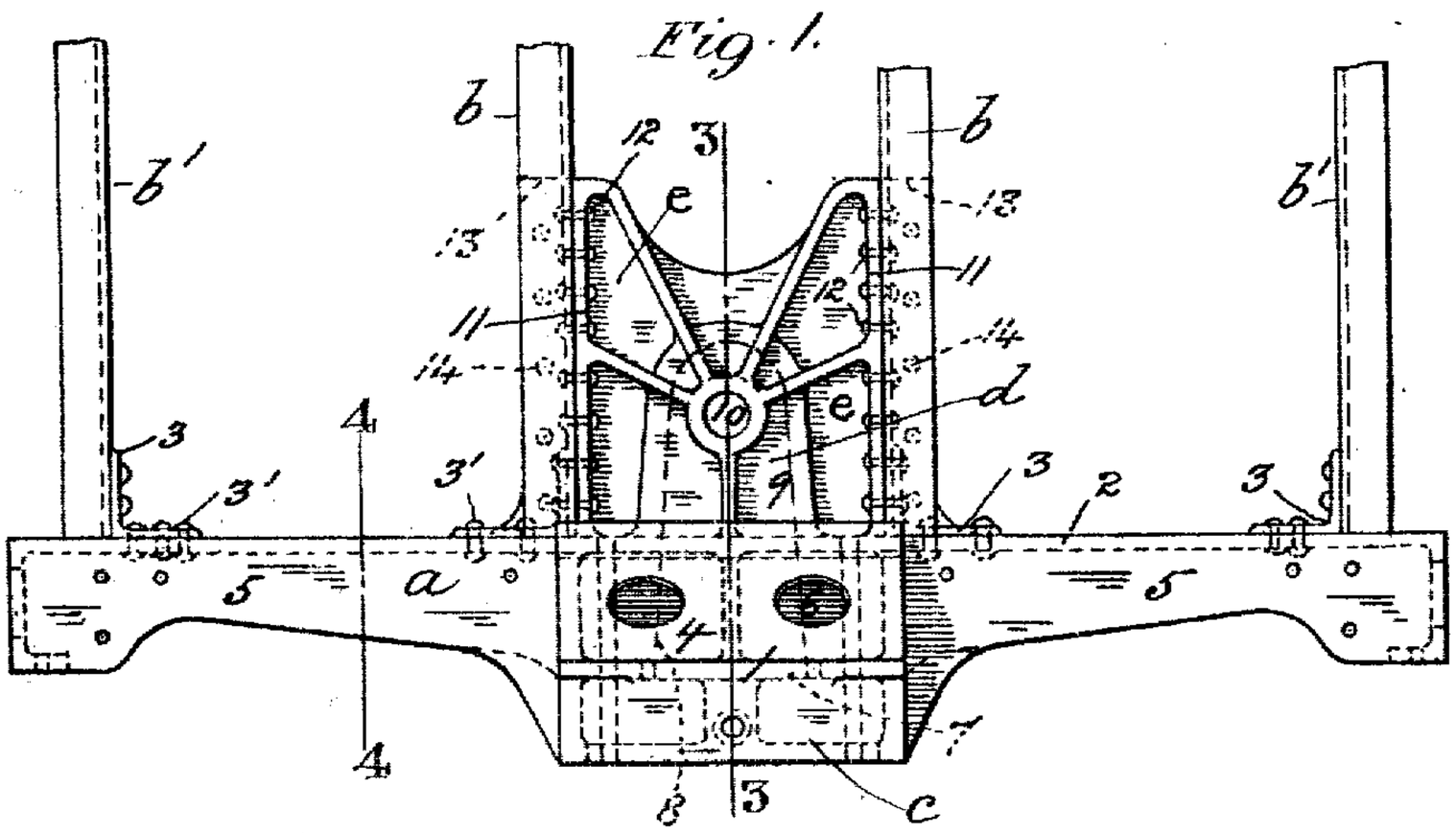


Fig. 2.

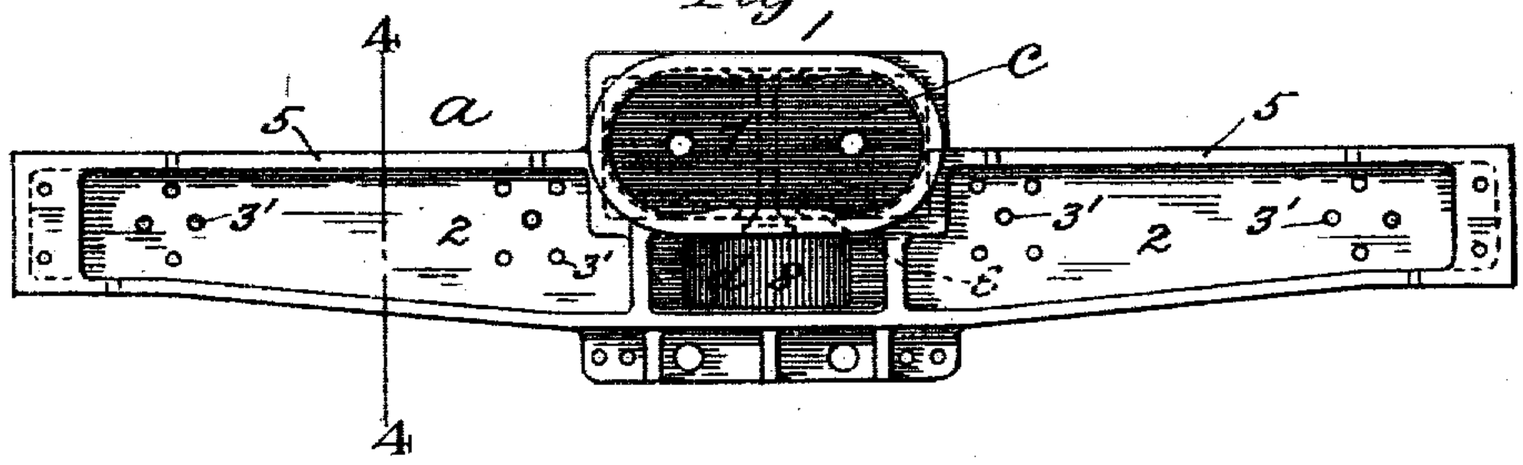


Fig. 3.

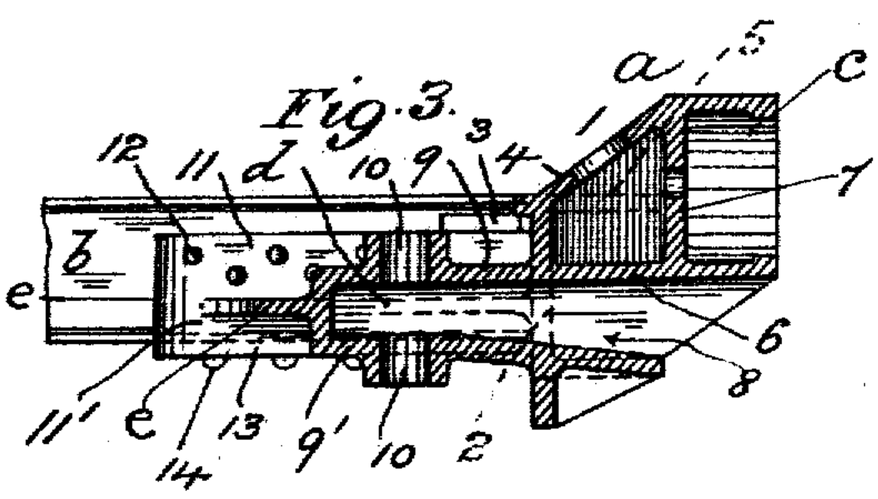
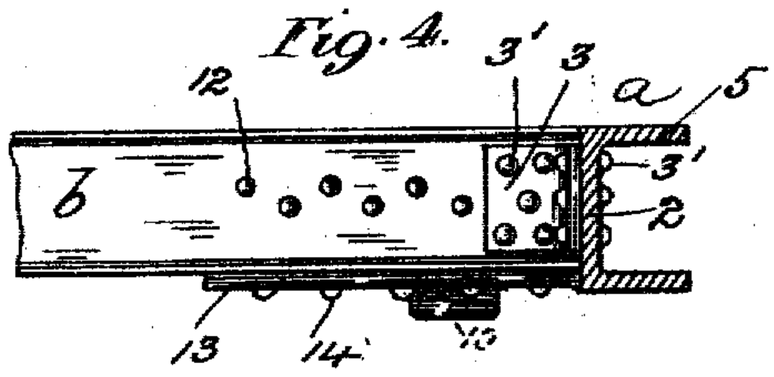


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

CLARENCE H. HOWARD, OF ST. LOUIS, MISSOURI.

LOCOMOTIVE-TENDER FRAME.

No. 811,561. Specification of Letters Patent. Patented Feb. 6, 1906.

Application filed November 22, 1905. Serial No. 288,560.

To all whom it may concern:

Be it known that I, CLARENCE H. HOWARD, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Improvement in Locomotive-Tender Frames, of which the following is a specification.

My invention relates particularly to the front end sill and adjacent combined parts of a tender-frame, and has for its object to increase the rigidity of the end sill and to obtain a firm and extended attachment thereof to the longitudinal sills of the frame.

The invention consists in features of novelty as hereinafter described and claimed, reference being had to the accompanying drawings, forming part of this specification, whereon—

Figure 1 is a top plan of the front end portion of a locomotive-tender frame, showing the end sill with the draw-bar pocket and buffer-spring pocket combined and attached therewith to the longitudinal sills of the frame; Fig. 2, a front elevation thereof; Fig. 3, a vertical longitudinal section through the end sill and draw-bar pocket on line 3 3 in Fig. 1; and Fig. 4, a similar view through the end sill on line 4 4 in Fig. 1, showing its attachment with the draw-bar pocket to one of the middle longitudinal sills, (seen in outside elevation broken away.)

Like letters and numerals of reference denote like parts in all the figures.

a represents the end sill, which in the present case is preferably channel-shaped in cross-section for a suitable distance from each side of its middle portion 1 and having its upright web 2, which extends the entire length of the sill *a*, bearing against the ends of the longitudinal sills *b* and *b'* of the frame, to which it is fixed by angles and rivets 3 3', respectively, in the usual manner. The middle portion 1 is preferably box-shaped in cross-section, having its top wall 4 inclined upward and forward for a suitable distance above the top flange 5 of the channel-shaped portions and having its bottom wall 6 projecting forward at right angles to the web 2 below the top flange 5. From the upright front wall 7 of the middle box portion 1 projects for a suitable distance beyond the front of the sill *a* a pocket *c*, which is adapted to receive the usual buffer-springs, while immediately below the pocket *c* and box portion 1 is formed transversely through the middle of the sill *a* an opening 8 for the passage therethrough and play of the draw-bar (not shown) which couples the tender to the locomotive in the usual well-known manner, the entire sill *a* thus constructed being preferably composed of cast-steel integral throughout, or the end sill *a*, with the buffer-spring pocket *c*, may be of any other suitable shape and the metal disposed therethrough as deemed advisable for obtaining the maximum strength with the least amount of material combined with facility of casting.

The opening 8 communicates with the draw-bar pocket *d*, which projects horizontally from the rear side or upright web 2 of the end sill *a* and is integral therewith and located between the middle longitudinal sills *b* of the frame.

The pocket *d* may be of any suitable construction adapted to receive the inner end portion of the draw-bar, which is located between the top and bottom walls 9 and 9', respectively, of the pocket *d* and coupled thereto by a pin (not shown) passing through the holes 10 in the said walls in the usual well-known manner.

Preferably from each side of the draw-bar pocket *d*, along the middle thereof and externally thereto, projects a brace or bracket *e*, which may be of any suitable shape in cross-section and is united integrally to the rear side or upright web 2 of the end sill *a*, from which it extends, preferably, to a suitable distance beyond the rear end of the pocket *d*, the outer side portion of the bracket *e* being preferably T-shaped or formed with a top and bottom upright flange 11 11', respectively, the flanges 11 11' bearing against the inner side of the corresponding middle longitudinal sill *b* of the frame, to which they are fixed by rivets 12, (or bolts,) and from the bottom flange 11' preferably projects at right angles thereto a flange 13, which underlaps and bears against the under side of the said sill *b*, to which it is fixed by rivets 14.

By the above construction, the brackets *e* being integral with the draw-bar pocket *d* and end sill *a* and having an extended bearing along and attachment to the sides of the longitudinal sills *b*, to which they constitute a brace, and the buffer-spring pocket *c* being also integral with the end sill *a*, the rigidity of the latter is greatly increased, whereby in

the event of collision the deflection of the end sill *a* and consequent buckling of the longitudinal sills *b* and *b'* are prevented.

I do not limit myself to the preferable construction above described and shown on the drawings of a bracket *e*, projecting from each side of the draw-bar pocket *d* along its middle portion, or thereabout, as the bracket *e* may be virtually in one piece extending the entire distance between the middle longitudinal sills *b* below the pocket *d*, to which it is integrally united, my object being to obtain a brace to the said sills having the draw-bar pocket and end sill as component parts thereof.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a locomotive-tender frame, the combination with the longitudinal sills, of an end sill having a central opening transversely therethrough for the draw-bar, a draw-bar pocket integral with the end sill and projecting rearwardly therefrom between the middle longitudinal sills, and in alinement with the said opening, a bracket projecting from each side of, and integral with the said pocket, and with the end sill, the said brackets having their outer lateral portions adapted to bear against the middle longitudinal sills, a pocket projecting from the front side of the end sill and integral therewith for receiving the buffer-springs, and means for fixing the said brackets and end sill respectively, to the longitudinal sills, substantially as described.

2. In a locomotive-tender frame, the combination with the longitudinal sills, of an end sill having a central opening transversely therethrough for the draw-bar, a draw-bar pocket integral with the end sill and projecting rearwardly therefrom between the middle longitudinal sills, and in alinement with the said opening, a pocket projecting from the front side of the end sill and integral therewith for receiving the buffer-springs, and means for fixing the end sill to the longitudinal sills, substantially as described.

3. In a locomotive-tender frame, the combination with the longitudinal sills, of an end sill having a central opening transversely therethrough for the draw-bar, a pocket projecting from the front side of the end sill and integral therewith for receiving the buffer-springs, and means for fixing the end sill to the longitudinal sills, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CLARENCE H. HOWARD.

Witnesses:

ELIZABETH C. TOUHEY,

EDWARD W. FURRELL.