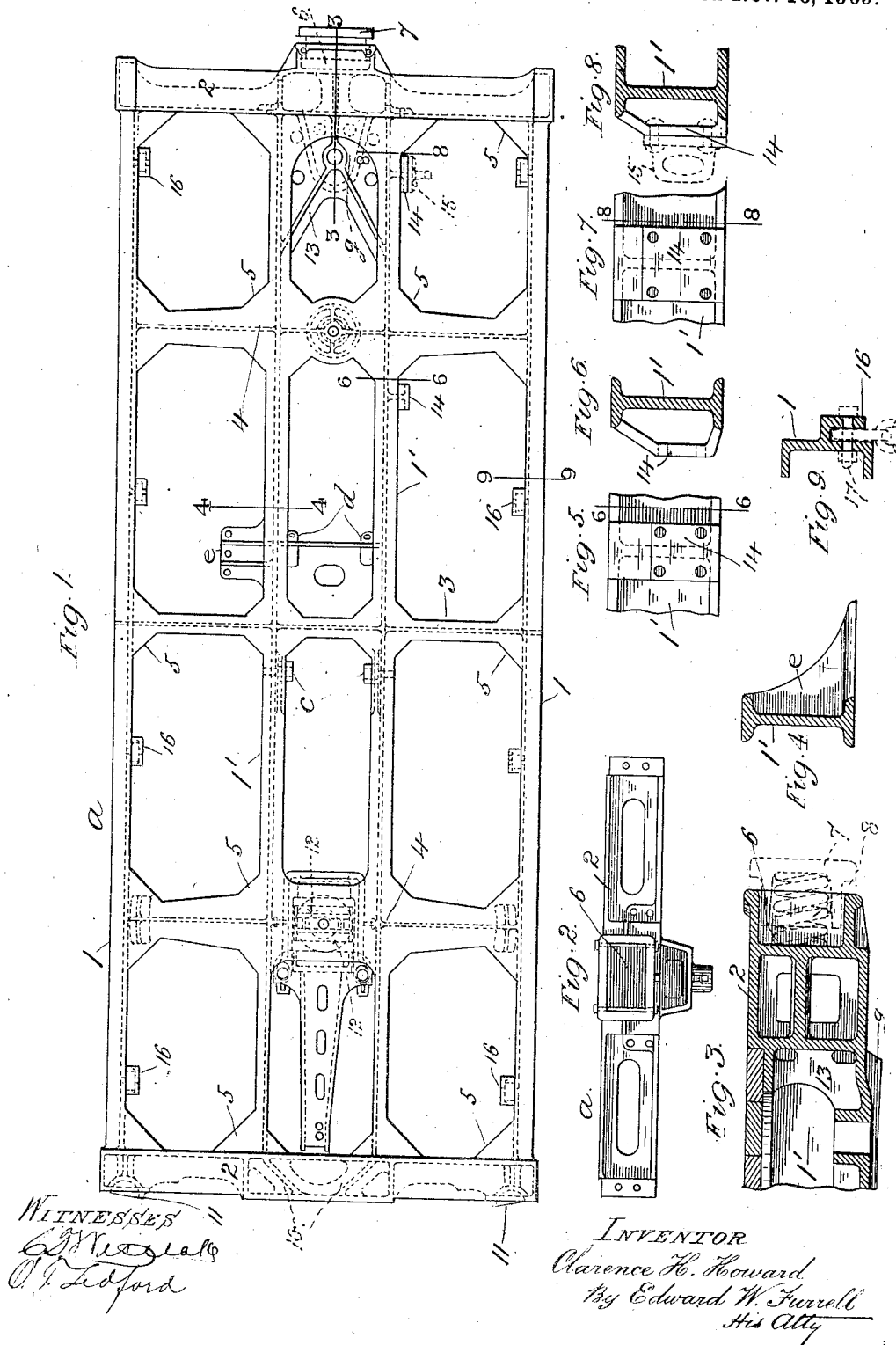


C. H. HOWARD.
 LOCOMOTIVE TENDER FRAME.
 APPLICATION FILED MAR. 18, 1908.

940,157.

Patented Nov. 16, 1909.



WITNESSES
[Signature]
[Signature]

INVENTOR
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UNITED STATES PATENT OFFICE.

CLARENCE H. HOWARD, OF ST. LOUIS, MISSOURI, ASSIGNOR TO LOCOMOTIVE TENDER FRAME COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF DELAWARE.

LOCOMOTIVE-TENDER FRAME.

949,157.

Specification of Letters Patent.

Patented Nov. 16, 1909.

Application filed March 18, 1908. Serial No. 421,769.

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 to that class of locomotive tender frames in which the longitudinal and transverse members constituting the framework proper, are combined in a single piece of cast metal, and is in the nature of an improvement in the tender frame described and claimed in the Letters Patent of the United States granted to Thomas E. Adams, October 18, 1904, Number 772,328, for an improvement in locomotive tender frames, the said patent comprising mainly two side and end pieces respectively, and two cross pieces intermediate to the end pieces and adapted to form the tender body-bolsters, combined or not with two longitudinal pieces intermediate to the side pieces and adapted to form draft-gear pockets.

My invention has for its object to strengthen the longitudinal and transverse members of a tender frame of this type at the corners or junctions with each other respectively, to adapt one of the cross members for the application directly thereto of a suitable draft-gear without the use of lateral housings in the adjacent longitudinal members, and to provide means integral with the longitudinal and transverse members for the support and operation of the various appendages of the frame.

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

Figure 1, is a top plan view of my improved locomotive tender frame; Fig. 2, a front end view thereof; Fig. 3, a vertical longitudinal section through the front end member or sill of the frame on line 3, 3, in Fig. 1; Fig. 4, a cross section through one of the middle longitudinal members of the frame on line 4, 4, in Fig. 1, showing the bracket for the brake cylinder; Fig. 5, a side view to enlarged scale of one of the longitudinal members, broken away, showing a bracket forming part of my invention, in front elevation, and Fig. 6, a cross

section thereof on line 6, 6, in Fig. 5, showing the bracket in side view; Figs. 7 and 8, corresponding views to Figs. 5 and 6 of a similar adjacent bracket, and Fig. 9, a cross-section through one of the side longitudinal members showing a bracket forming another part of my invention, projecting therefrom.

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

a represents my improved tender frame which is composed preferably of cast steel integral throughout having the longitudinal side members 1, intermediate longitudinal members 1', transverse end members 2, middle transverse member 3, and two transverse members 4 intermediate respectively, to each end and middle member 2 and 3, and adapted to form the tender body-bolsters, all arranged in a similar manner and, excepting the transverse end members 3, of the same shape in cross section as the corresponding members of the tender frame described and shown in the said patent.

The longitudinal members 1, 1', and transverse members 2, 3, and 4, at their respective corners or junctions with each other are preferably formed with reinforcing gussets (triangular as shown, or otherwise) 5 which impart rigidity to and resist fracture of the frame thereat, especially when subjected to diagonal stress.

On (or in) the outer face of the front end member or sill 2 is preferably formed at its middle portion, which in the present case is box-shaped in cross section, with a pocket 6 adapted to receive the barrel of the buffer 7, and the buffing springs 8 which are adapted to bear at one end against the rear wall of the pocket 6 (or body of the sill 2) and at their other end against the buffer 7 in the usual manner, the other end member or rear sill 2 being preferably box-shaped at its middle portion adapted for the attachment thereto of a solid buffer (not shown) and having preferably diagonal struts 10 diverging from the front to the rear wall of the sill 2 thereat, the end portions of the front and rear end sills 2 being in the present case channel-shaped, but may be of any other suitable configuration, and the rear end sill 2 formed with push pole pockets 11 as shown.

On (or in) each side of the upright web of the I-shaped transverse member 4 ad

adjacent to the rear end sill 2, is formed a pocket or housing 12 for the "draft" and "buffing" springs (not shown) of a suitable and preferably self-centering draft-gear analogous to that described in the Letters Patent of the United States granted to Harry M. Pflager, January 23, 1906, Number 810,805, for improvement in draft-gear for railroad cars, in which the "buffing" and "draft" springs bear directly at their inner ends against the front and rear sides respectively, of the body-bolster, the outer ends of the "buffing" springs being engaged by the inner end of the draw-bar and the outer ends of the "draft" springs by a yoke coupled to the draw-bar, the arms of the yoke passing through openings therefor in the bolster and the whole being self-contained, self-centering, and independent of lateral housings (and followers) in the longitudinal members of the frame as in the ordinary draft-gear, whereby the draft-pocket described and indicated by the numeral 11 in the said patent to Adams is eliminated and the construction of the frame thereat simplified.

On the inner side of the longitudinal members 1' are formed the two opposite brackets *c* to which the lower end of the water-scoop (not shown) is hinged, and adjacent thereto are formed the two opposite scoop adjusting sockets *d*, while on the outer side of one of the members 1' in proximity to the sockets *d* is formed the bracket *e* for the brake cylinder, the parts *b*, *c* and *d*, being similar in every respect to the corresponding parts in the said patent to Adams.

Between the longitudinal members 1' adjacent to the front end sill 2, is formed the pocket *g* (similar to the pocket *g* in the Adams patent) for the front end coupling link to the engine, the pocket *g* being perforated vertically for the link bolt or pin (not shown) and united integrally to the

members 1' and rear wall of the end sill 2 by suitable webs 13 as shown.

On the outer side of one of the longitudinal members 1' in proximity to the front end sill 2 and adjacent transverse member 4 respectively, is formed a bracket 14 (see particularly Figs. 5 to 8) to the upright face of which is fixed a suitable bearing or support 15 (indicated by dotted lines) for the operating rod of the water-scoop while on the inner sides of the longitudinal side members 1 adjacent to each side of the transverse members or body-bolsters 4 respectively, is formed a jaw 16 for receiving the end of the corresponding truck safety chain which is coupled to the jaw 16 by a bolt or pin 17 as indicated by dotted lines.

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

1. In a locomotive tender frame of the class described, the combination of two longitudinal side members, and a transverse member integral therewith and adapted for the application thereto of a suitable draft-gear, substantially as described.

2. In a locomotive tender frame of the class described, the combination with one of the longitudinal members, of a bracket integral therewith and adapted for coupling the end of the truck safety-chain thereto, substantially as described.

3. In a locomotive tender frame of the class described, the combination with a longitudinal member thereof, of a bracket integral with the said member and adapted to support the operating rod of the water-scoop, 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:

H. O. BELLVILLE,
 EDWARD W. FURRELL.