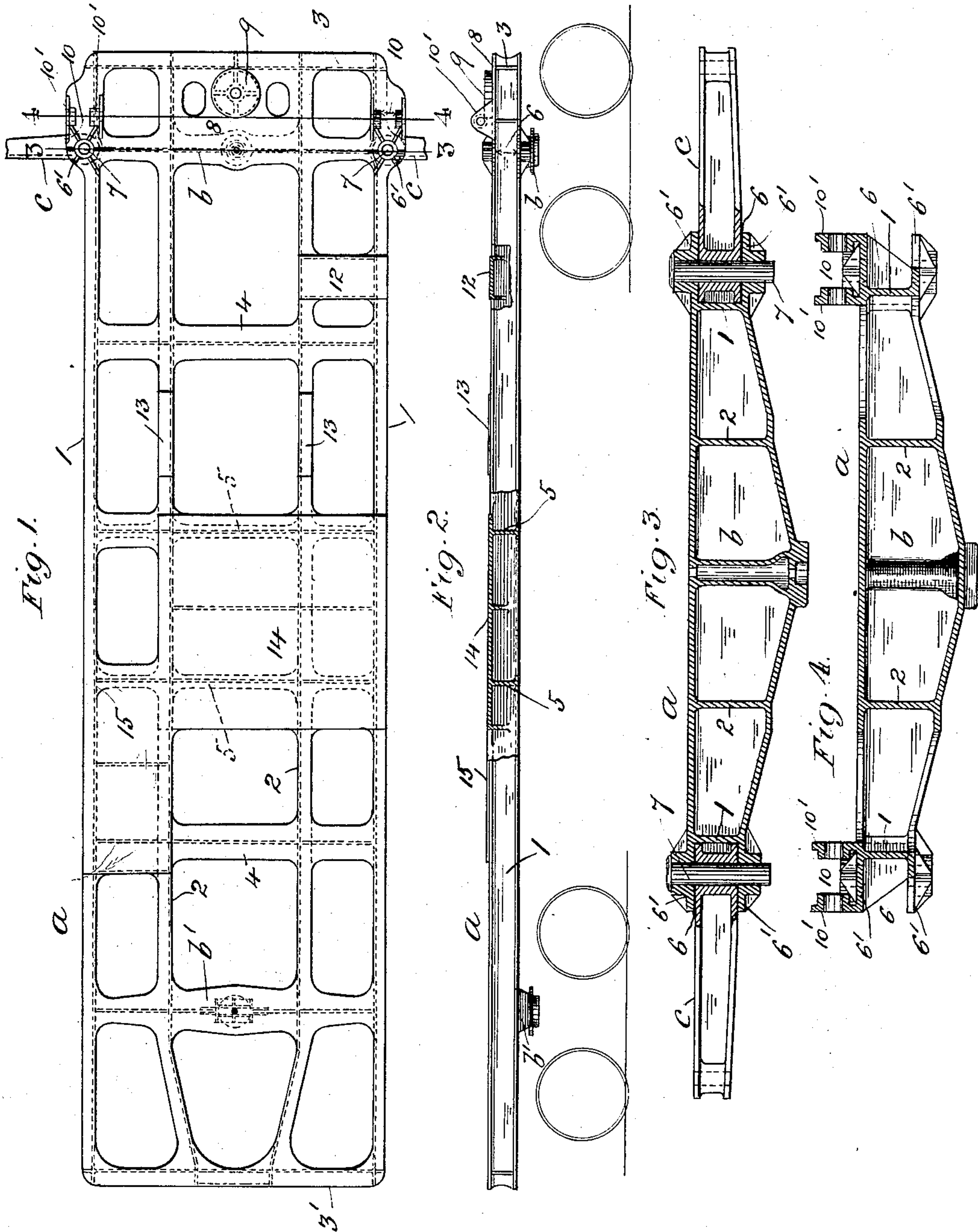


T. E. ADAMS & C. H. HOWARD.
 STEAM SHOVEL CAR UNDERFRAME.
 APPLICATION FILED MAY 11, 1908.

905,127.

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WITNESSES

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UNITED STATES PATENT OFFICE.

THOMAS E. ADAMS, OF PINE BLUFF, ARKANSAS, AND CLARENCE H. HOWARD, OF ST. LOUIS, MISSOURI, ASSIGNORS TO LOCOMOTIVE TENDER FRAME COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF DELAWARE.

STEAM-SHOVEL-CAR UNDERFRAME.

No. 905,127.

Specification of Letters Patent.

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Application filed May 11, 1908. Serial No. 432,153.

To all whom it may concern:

Be it known that we, THOMAS E. ADAMS and CLARENCE H. HOWARD, citizens of the United States, residing, respectively, at Pine Bluff, in the county of Jefferson and State of Arkansas, and at St. Louis, in the State of Missouri, have invented a new and useful Improvement in Steam-Shovel-Car Underframes, of which the following is a specification.

Our invention relates to a steam shovel car underframe, and has for its object to simplify construction and to provide a light, strong, rigid, and compact metallic underframe specially adapted for the direct attachment thereto of the steam engine and boiler, derrick and other operating mechanism of the shovel without the use of separately constructed base-pieces or supports ordinarily used in fixing the said parts to the underframe.

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 our improved steam shovel car underframe; Fig. 2, a side elevation thereof partly broken away, and Figs. 3, and 4, vertical transverse sections to enlarged scale through the underframe on lines 3, 3, and 4, 4, in Fig. 1.

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

α represents our improved steam shovel car underframe which is preferably composed of cast steel integral throughout and similar in general configuration and arrangement of its component members, or body, to the well-known cast metal underframe of a locomotive engine, tender, or railroad car, the underframe α in the present case consisting of two side longitudinal outwardly flanged channel members 1 and two middle longitudinal outwardly flanged channel members 2, intermediate to the side members 1, the longitudinal members 1 and 2 being united together at one end by a transverse outwardly flanged channel member 3 adapted to form the front end sill, and at their other end by a similar transverse member 3' adapted to form the rear end sill of the underframe α .

At a suitable distance from each end sill

3, 3', the longitudinal members 1 and 2 are united together by a transverse I-shaped member b, b' , respectively, adapted to form the body-bolster of the car, the rear body-bolster b' being also adapted for the application thereto of a suitable draft-gear. Furthermore, the longitudinal members 1 and 2, are united together at suitable distances apart between the body-bolsters b, b' , by a series of transverse members 4 and 5, which are suitably shaped in cross section and adapted to strengthen the underframe α and reinforce the base-plates cast thereon, and forming parts of our invention, as hereinafter more particularly described.

In (or on) the outer face of each side longitudinal member 1 adjacent to the front end sill 3 and preferably in alinement with the front body-bolster b , is formed a horizontally arranged jaw 6 which is adapted to receive the inner end of one of the jack-arms c by which the car is held steadily in position during the operation of the steam shovel in the usual well-known manner, the sides 6' of the jaw 6, which in the present case are formed by the outward extension of the corresponding flanges of the side member 1, being perforated vertically for the passage of a pin 7 therethrough and through the inner end of the jack-arm c , which is thereby pivoted and movable radially to the pin 7 in a horizontal plane, so that when not in use it can be swung inward against the side of the underframe α .

Extending between and uniting the front end sill 3, the front body-bolster b , and the two middle longitudinal members 2 together at the top of the underframe α is a floor-plate 8 which in the present case is flush with, and forms a continuation of the top flanges of the said members, but may be above the top of the underframe α if desired, and on the plate 8 in central alinement with the longitudinal center of the underframe α is formed a circular block 9 which is adapted to support and form the pivot bearing of the derrick boom, while on the top of each side longitudinal member 1 adjacent to the jaw 6 is formed an upright jaw 10 having its sides 10' perforated horizontally for receiving the pivot pin (not shown) of the derrick post or mast.

Formed on and uniting one of the side longitudinal members 1 to the correspond-

ing middle longitudinal member 2 adjacent to the front body-bolster *b* is a base-plate 12 which is adapted for the attachment thereto of the brackets to which the operating levers 5 of the derrick hoisting drum are fulcrumed, while on each middle longitudinal member 2 adjacent to the plate 12 is formed a base-plate 13 for the attachment thereto of one of the hoisting drum bearing frames.

10 Extending along and partway across the top of the underframe *a*, between and uniting one of the side longitudinal members 1, the middle longitudinal members 2, and the middle transverse members 5 together, is 15 formed a base-plate 14 which is adapted to support, and for the attachment thereto of, the steam engine (or other suitable motor) and its appurtenances, a similar plate 15 being formed along and partway across the 20 top of the underframe *a* between, and uniting the other side longitudinal member 1, the corresponding middle longitudinal member 2, and the transverse members 4 and 5 adjacent to the rear body-bolster *b'* together, 25 and adapted for the support, and attachment thereto of, the auxiliary engine used for swinging the derrick boom in the operation of the steam shovel, the boiler (or other source of power) for supplying the 30 said engines with steam being supported on and attached partly to the plate 15, but mainly to the longitudinal members 1 and 2 adjacent thereto, and to the rear body-bolster *b'*.

35 By the above construction in which the component longitudinal and transverse members, or "body", of the underframe *a* with the jaws and base-plates combined therewith as described, are collectively integral, a 40 strong, rigid, and durable underframe is produced adapted to support the different relative weights, and to distribute the different functional stresses of the various parts of the steam shovel apparatus uni-

formly therethrough with fewer parts and less liability to fracture than an ordinary steam shovel frame. 45

What we claim as our invention and desire to secure by Letters Patent is:—

1. In a steam shovel car underframe of 50 the character described, the combination with the component members or "body" of the underframe, of a jaw having its sides integral with the said body and perforated vertically for the pivot-pin of a jack-arm, 55 substantially as described.

2. In a steam shovel car underframe of the character described, the combination with the component members or "body" of the underframe, of a jaw having its sides 60 integral with the said body and perforated horizontally for the hinge-pin of one of the derrick masts, substantially as described.

3. In a steam shovel car underframe of the character described, the combination 65 with the component members or "body" of the underframe, of a base-plate integral with the said body and adapted for the attachment thereto of the fulcrum brackets for the operating levers of the hoisting drum, 70 substantially as described.

4. In a steam shovel car underframe of the character described, the combination with the component members or "body" of the underframe, of a base-plate integral with 75 the said body and adapted for the support and attachment thereto of the hoisting drum bearing frame, substantially as described.

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