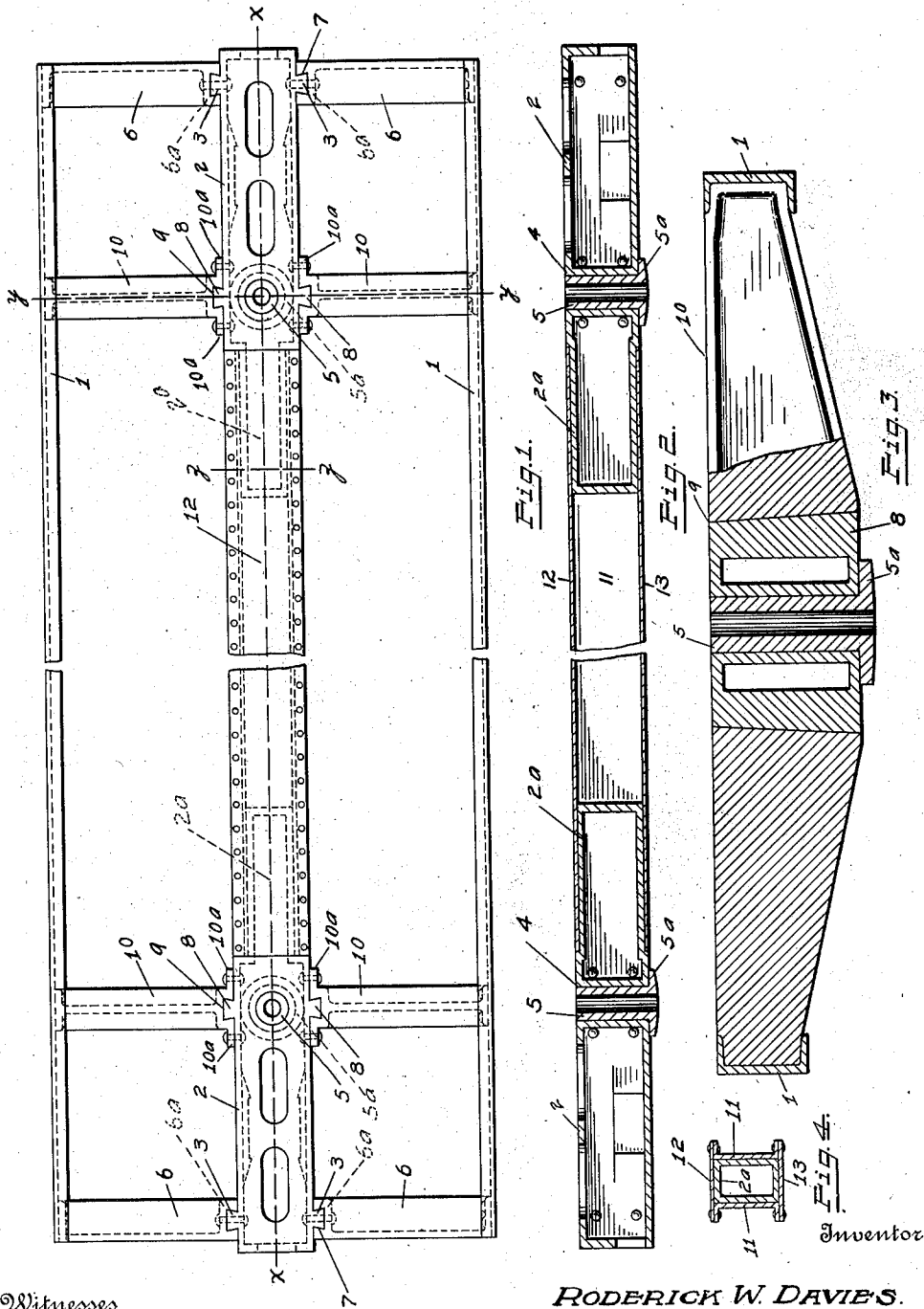


R. W. DAVIES.
 UNDERFRAME FOR CARS.
 APPLICATION FILED NOV. 15, 1909.

968,031.

Patented Aug. 23, 1910.



Witnesses

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UNDERFRAME FOR CARS.

968,031.

Specification of Letters Patent. Patented Aug. 23, 1910.

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To all whom it may concern:

Be it known that I, RODERICK W. DAVIES, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Underframes for Cars, of which the following is a specification.

My invention relates to the improvement of underframes for cars and has particular relation to the improvement of underframes for steel cars.

The objects of my invention are to provide an improved underframe of this class of superior construction and arrangement of parts; to so construct my improved underframe as to render the same exceedingly strong and durable and capable of withstanding great strain or shock; to so construct the underframe as to make the various elements or parts thereof interchangeable, thereby providing for the removal of a broken or injured part and substitution of a new part and to produce other improvements the details of which will be more fully pointed out hereinafter.

These objects I accomplish in the manner illustrated in the accompanying drawing, in which—

Figure 1 is a plan view of my improved car underframe, Fig. 2 is a central longitudinal section on line $x-x$ of Fig. 1, Fig. 3 is an enlarged transverse section on line $y-y$ of Fig. 1, and, Fig. 4 is a transverse section of the central frame sill, the same being taken on line $z-z$ of Fig. 1.

Similar numerals refer to similar parts throughout the several views.

In carrying out my invention, I employ parallel side frame members 1 and a central longitudinal sill member, which is connected with said side frame members at desirable points in the manner hereinafter described. In constructing the center frame sill, I employ separately formed end sections 2 each of which is in the nature of an elongated cast-steel boxing or hollow body, which near each end is formed with opposing vertical side lugs 3 which flare outwardly from the body of the member 2 and which have their outer faces or surfaces inclined outwardly and downwardly as hereinafter set forth. The inner terminal portion of each of the members 2 is slightly reduced in width and

height, thereby forming a hollow tongue extension 2^a.

Near the inner end portion of the body of each of the castings 2, is formed a vertical opening 4 in which is adapted to be inserted from below the tubular body of a sleeve or bushing 5, the lower end of the latter being formed with a flaring head 5^a, the lower surface of which is slightly convex. Extending horizontally outward from opposite sides of the end portions of each of the members 2, are transverse frame arms 6, which form in conjunction with the end of the member 2, the end of the underframe. Each of these arms 6 is of a channel form in cross section and the inner end of each of said arms is formed with a solid portion 6^a in which is formed vertically a flaring recess 7, these recesses being adapted to have inserted therein the flaring lugs 3 of the casting 4 until the upper sides of the members 2 and 6 are flush one with the other. While it is obvious that the inclined outer surfaces of the lugs 3 must result in a frictional locking of the inner ends of the members 6 with said lugs, I also rivet or bolt the solid portions 6^a of the members 6 to the members 2, said bolts or rivets passing as indicated in dotted lines in the drawing, through the lugs 3. The outer end of each of the arms 6 is riveted in connection with the inner face of the corresponding side frame member 1.

Opposite the opening 4 and on opposing sides of each of the members 2, I provide the latter members with flaring lugs 8 corresponding with the lugs 3, these lugs 8 engaging flaring recesses 9 in the inner ends of opposing frame arms 10, the outer ends of which are secured, as shown, to the side frame members 1. As is clearly shown in Fig. 3, these lugs flare outwardly and downwardly. Each of the frame members 10 is preferably in the form of an I-beam and has its recessed inner end portion formed with laterally projecting attaching flanges 10^a through which bolts or rivets pass into the member 2. In addition to the members 2, the center sill further consists of an intermediate or connecting sill section, which is in the nature of a box-like beam member and comprises opposing and parallel channel plates 11, the corresponding end portions of which embrace opposite

sides of the tongue extensions 2^a of the castings 2 and which also comprise top and bottom plates 12 and 13 which are riveted or otherwise secured to the top and bottom flanges of the plates 11.

It will be understood that the usual bolster pins, by which the center sill of the underframe is connected with the bolsters, are adapted to be inserted through the central openings of the bushings or sleeves 5 and that the rounded heads or lower ends of said bushings are adapted to bear upon the bolsters. Heretofore it has been common to bring the upper side of the bolster into direct contact with the underside of the center sill, resulting in an undesirable amount of wear on the sill at this point of contact, but by my construction it will be understood that the bearing contact between the parts, will be upon the head of the bushing 5 and that when the latter becomes worn to an undesirable extent, it may be removed and a new bushing introduced into the opening 4. It will also be observed that the underside of the bushing head is rounded, so as to permit the rocking action of the bolster when in contact therewith.

Heretofore it has been customary to produce steel underframes for cars, of rolled steel, said underframes or the greater portion thereof, being formed integral, with the result that in case one of the members of the frame is broken or bent out of place, the defect can only be remedied by the substitution of a new frame or the greater portion thereof. By the construction which I have herein shown and described, it will readily be understood that the frame being built up from separately cast-steel members or parts, any part thereof may be removed in case of breakage or injury thereto and a new part readily substituted therefor at a comparatively small expense and loss of time.

From the foregoing description, it will be seen that simple and efficient means are herein provided for accomplishing the objects of the invention, but while the elements shown and described are well adapted to serve the purposes for which they are intended, it is to be understood that the invention is not limited to the precise construction set forth, but includes within its purview such changes as may be made within the scope of the appended claims.

What I claim, is:—

1. In an underframe for cars, the combination with parallel side frame members and a center sill comprising separately formed castings, one of said castings being located at each end of the underframe, of a connecting member extending between said castings, and separately formed transverse frame arms secured to the side frame members and having a vertical dove-tail engagement with said castings.

2. In an underframe for cars, the combination with parallel side frame members and a center sill comprising separately formed castings, one of said castings being located at each end of the underframe, of a connecting member extending between said castings, separately formed transverse frame arms secured to the side frame members and having a vertical dove-tail engagement with said castings, and fastening devices passing through said frame arms and through said castings to further connect said frame arms to said castings.

3. In an underframe for cars, the combination with the parallel side frame members and a center sill member formed of sections comprising cast bodies, and a sill member connecting said bodies, each of said cast bodies having opposing flaring lugs formed therewith, and a bolster pin opening, of transverse frame arms extending between the side frame members and said cast bodies, the inner ends of said frame arms having flaring recesses adapted to receive the correspondingly shaped lugs of said castings.

4. In an underframe for cars, the combination with the parallel side frame members and a center sill member comprising separately formed cast bodies, and a connecting member between said bodies, each of said cast bodies having a vertical opening therethrough, and a removable sleeve in each of said openings, said sleeve being formed with a lower end extension, of transverse frame arms connecting said cast bodies with said side frame members.

In testimony whereof I affix my signature in presence of two witnesses.

RODERICK W. DAVIES.

Witnesses:

C. C. SHEPHERD,
E. V. GRISWOLD.