

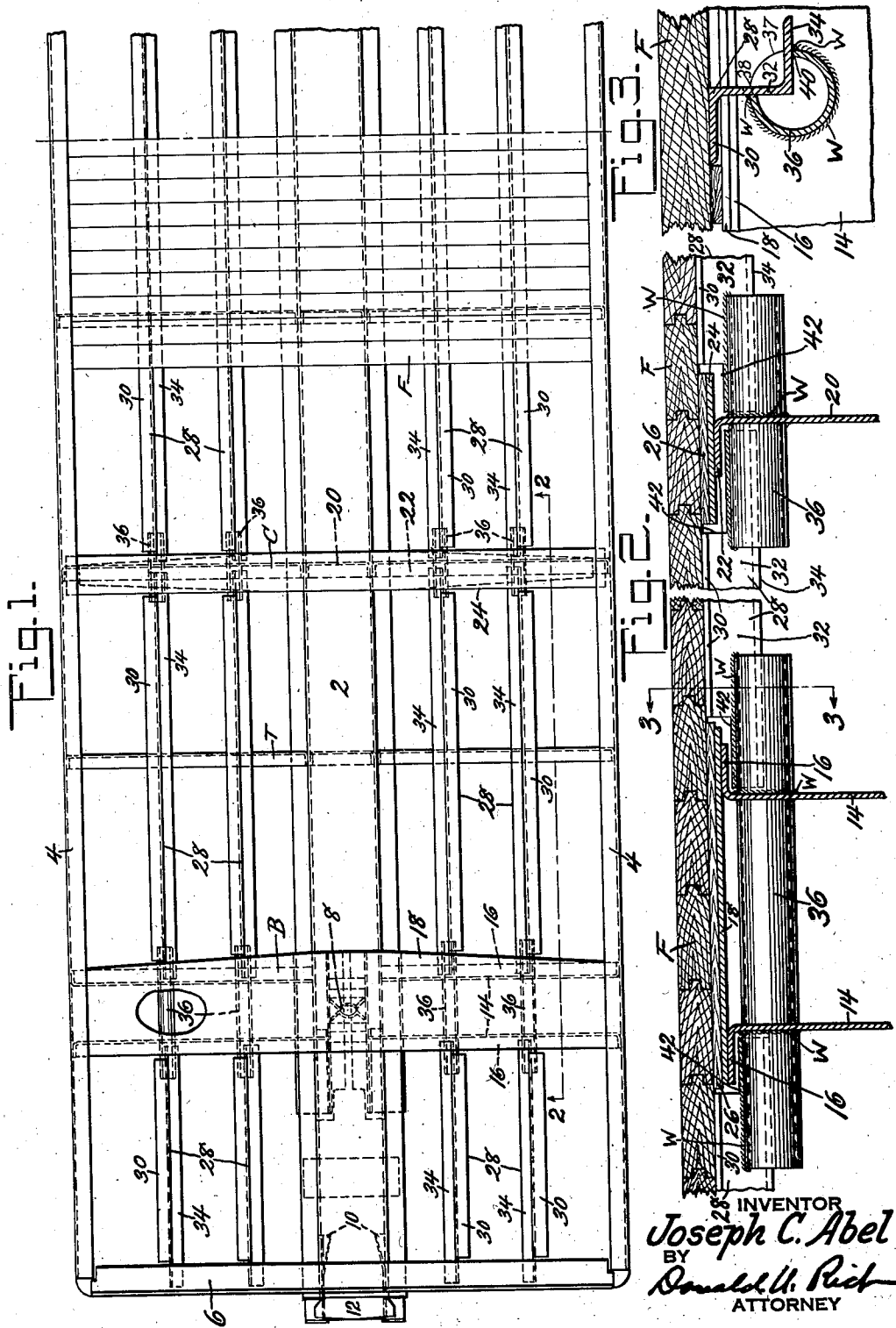
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J. C. ABEL

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CAR UNDERFRAME

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INVENTOR
Joseph C. Abel
BY
Donald H. Rich
ATTORNEY

UNITED STATES PATENT OFFICE

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CAR UNDERFRAME

Joseph C. Abel, Berwick, Pa., assignor to American Car and Foundry Company, New York, N. Y., a corporation of New Jersey

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5 Claims. (Cl. 105-414)

This invention relates to underframes in general and in particular to underframes of the partially welded type having floor supporting stringers extending longitudinally of the underframe.

In the past underframes of the all-riveted design have required a large amount of shimming, reaming of holes, etc., in order that the longitudinal stringers supporting the floor might be brought to their proper position to support the floor. Also it was impossible for the stringers to be made substantially continuous from end to end of the car, with the result that a weak point occurred adjacent each bolster and transom. In a welded design it is extremely hard, due to warpage of the parts, to bring the stringers to the floor supporting level. It is an object of the present invention, therefore, to provide an adjusting means whereby the stringers may be readily and quickly brought to proper floor supporting position regardless of inaccuracies in the underframe.

A further object of the invention is the provision of an underframe having means securing the stringers to the bolsters and transoms in such a manner as to provide substantially continuous stringers from end to end of the underframe.

These and other objects of the invention will be apparent to persons skilled in the art from a study of the following description and accompanying drawing, in which:

Figure 1 is a plan view of substantially one-half of a car underframe;

Fig. 2 is a sectional view taken substantially on line 2-2 of Fig. 1, and

Fig. 3 is a sectional view taken substantially one line 3-3 of Fig. 2.

Referring now to the drawing in detail, it will be seen that the underframe is formed with a center sill 2 and side sills 4, all joined together at their ends by means of an end sill 6 of angle formation. The center sill is provided with any suitable center filler 8, draft lug 10 and buffer 12. Intermediate the end sills the side sills and center sill are tied together by means of bolsters B, cross bearers C and transoms T. The bolsters are of box formation and formed in part by side webs 14 and top flanges 16 to which is attached the top cover plate 18. The cross bearers are formed in part of web plates 20 terminating in top flanges 22 to which are attached top ties 24 extending across the underframe and secured to the center sill and side sills. The floor F is supported in part upon the bolsters and cross bearers by means of thin wooden strips 26.

The main part of the floor is supported upon

stringers 28 extending longitudinally of the underframe and in spaced relation to the side sills and center sill. The stringers are made up of relatively short lengths of Z-bars having top flange 30, web or vertically extending portion 32 and a lower flange or horizontal portion 34 spaced below the floor F. These stringers pass over the transoms but intersect the plane of the bolsters and cross bearers as is clearly indicated by the drawing. In order to support the stringers in their proper position with flange 30 in contact with the floor, adjusting means 36 are provided. These adjusting means, as clearly shown, are formed by three-quarter tubular members extending through openings 37 in the webs 14 of the bolsters and 20 of the cross bearers. This adjusting means 36 may be separately formed or cut from a short length of tube but in any case is provided with one longitudinal edge portion 38 adapted to contact the vertical portion 32 of the angular form stringer and with a second longitudinal edge portion 40 adapted to contact and support the horizontal flange 34 of the stringer. The edge portions 38 and 40 are adapted to be welded or otherwise secured to the vertical and horizontal portions 32 and 34 respectively, while the adjusting means itself is adapted to be welded or otherwise secured to the bolster or cross bearer webs 14 and 20. It will be clearly seen that the adjusting means extending through the bolster serves as an additional tie between the bolster webs and together with the cross bearer adjusting means will in effect form a continuous stringer of substantially constant cross-sectional area extending from end to end of the underframe. Thus the full strength of the stringers will be developed.

In assembling the underframe the openings 37 are punched in the webs of the bolsters and cross bearers prior to assembling of the underframe. After the side sills and center sill are tied together by the bolsters, cross bearers and transoms, the adjusting means 36 are slid into position through the bolster and cross bearer webs. The stringers are then brought into position so that the vertical part 32 contacts edge 38 and flange 34 contacts edge portion 40 of the adjusting means. A slight rotation in one direction or the other will cause the stringer to be raised or lowered slightly, thus bringing the floor supporting flange 30 to its proper level. With the parts in this position the adjusting means is welded as at W to the bolster and cross bearer webs and to the vertical and lower horizontal portions of the stringers. The stringers may be cut off so as to

readily fit between the bolster and cross bearer top cover plates but it is preferred that they be coped as at 42, thereby removing the top flange and part of the vertical flange and allowing the remaining vertical and lower flange to project beneath the cross bearer and bolster cover plates substantially to the web of the bolster and cross bearer.

While the invention has been described more or less in detail with specific reference to the drawing, it will be seen that various modifications and rearrangements of parts may be made and all such modifications and rearrangements of parts are contemplated as will fall within the scope of the following claims defining my invention.

What is claimed is:

1. In a car underframe the combination of spaced side sills, a center sill, bolster and cross bearer members connecting said sills together, stringers of angular cross-section located between said bolster and cross bearer members and extending longitudinally of the underframe and adapted to support a car floor, and means securing said stringers to said bolster and cross bearer members, said means having their longitudinal axes located to one side of the longitudinal axes of said stringers and being rotatable relative to said stringers and members prior to being secured thereto whereby minor adjustments may be made in the height and transverse location of said stringers with relation to said members.

2. In a car underframe the combination of spaced side sills, a center sill, bolster and cross bearer members connecting said sills together, stringers of angular cross-section located between said bolster and cross bearer members and extending longitudinally of the underframe and adapted to support a car floor, and three-quarter tubular means having the longitudinal edges thereof contacting and supporting said stringers and mounted in said bolster and cross bearer members and rotatable relative thereto to adjust the vertical position of said stringers, said means being secured to said members and stringers subsequent to adjustment of the stringers.

3. In a car underframe the combination of spaced side sills, a center sill, bolster and cross bearer members connecting said sills together, stringers of angular cross-section located between said bolster and cross bearer members and extending longitudinally of the underframe and adapted to support a car floor, partial tubular means extending through circular openings in said bolster and cross bearer members substantially in alignment with said stringers, said partial tubular means being rotatable in the circular openings relative to said members and stringers and having the longitudinal edge portions contacting the stringers to adjust the vertical position of said stringers during rotation and being secured to the stringers and to said members subsequent to adjustment.

4. In a car underframe the combination of spaced side sills, a center sill, bolster and cross bearer members connecting said sills together, stringers extending longitudinally of the underframe adapted to support a car floor and formed with a vertical portion and a horizontal portion joined to the vertical portion and spaced below the car floor, means secured to said bolster and cross bearer members and formed with edge portions, one secured to the vertical portion and the other secured to the horizontal portion of a stringer, said means being rotatable relative to said members and stringers to adjust the vertical and horizontal portions of said stringers prior to being secured thereto and to said members.

5. In a car underframe the combination of spaced side sills, a center sill, bolsters and cross bearers connecting said sills together, stringers extending longitudinally of the underframe in substantial parallelism with said sills, and means secured to said stringers and carried by said bolsters and cross bearers to support the stringers thereon, said means being shiftable relative to the bolsters and cross bearers and being so constructed and arranged with respect to said bolsters, cross bearers and stringers as to permit the adjusting of the vertical position of said stringers prior to being secured to said stringers.

JOSEPH C. ABEL