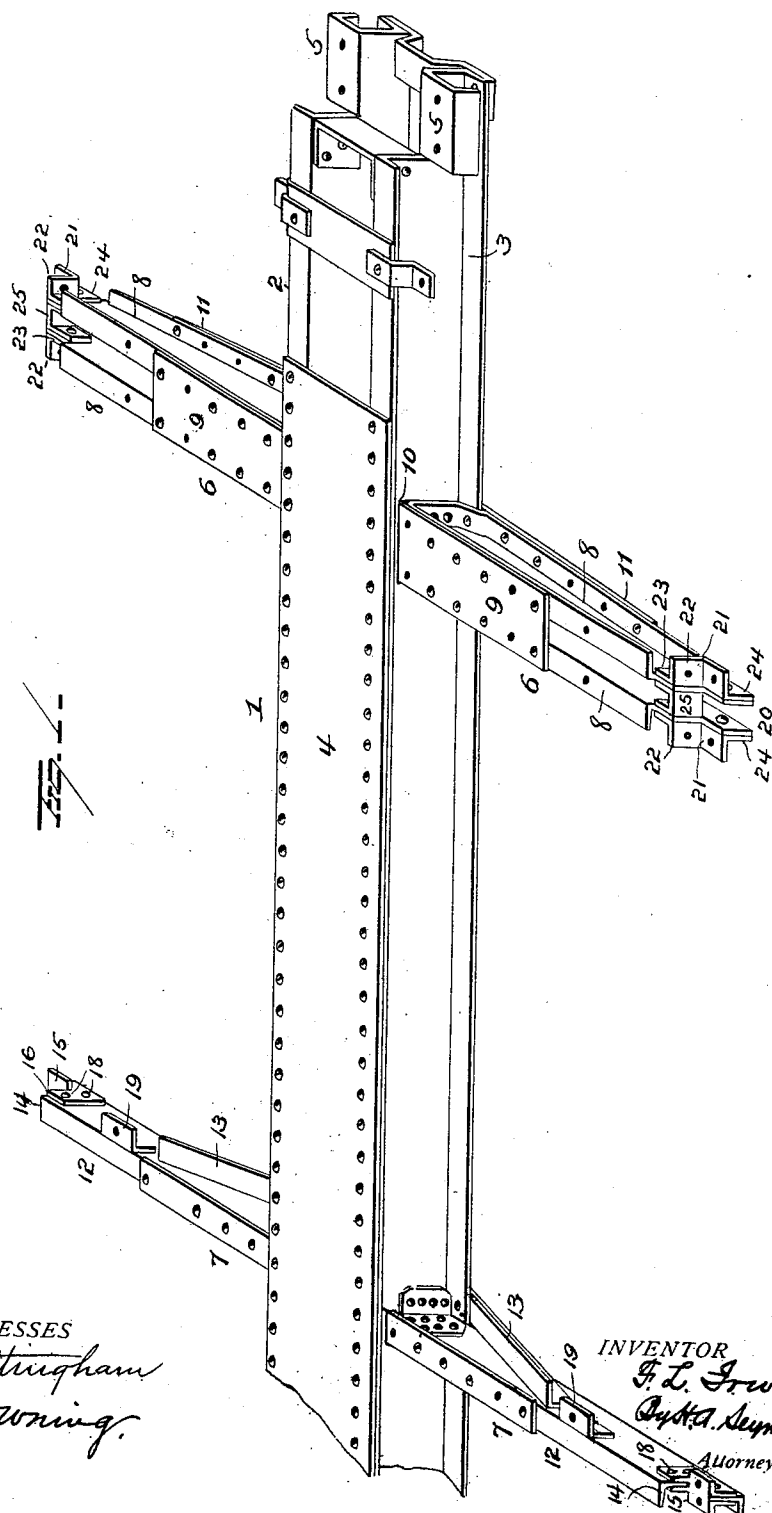


No. 870,436.

PATENTED NOV. 5, 1907.

F. L. IRWIN.  
STEEL UNDERFRAMING FOR RAILWAY CARS,  
APPLICATION FILED MAY 28, 1907.

2 SHEETS—SHEET 1.



WITNESSES  
*E. Nottingham*  
*G. J. Downing*

INVENTOR  
*F. L. Irwin*  
*By H. A. Seymour*  
Attorney

No. 870,436.

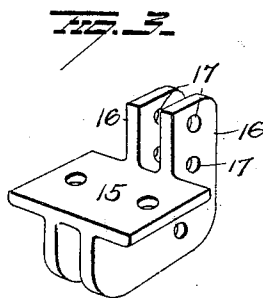
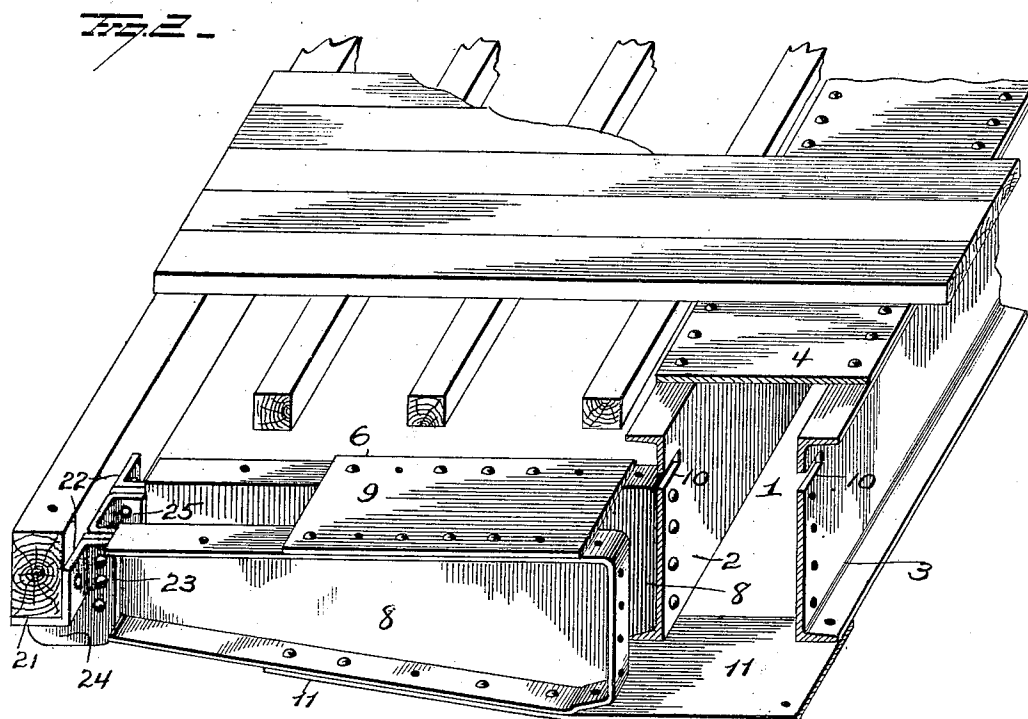
PATENTED NOV. 5, 1907

F. L. IRWIN.

STEEL UNDERFRAMING FOR RAILWAY CARS.

APPLICATION FILED MAY 28, 1907.

2 SHEETS—SHEET 2.



WITNESSES

*E. Nottingham*  
*G. J. Downing*

INVENTOR

*F. L. Irwin*  
*Cy. A. Seymour*  
Attorney

# UNITED STATES PATENT OFFICE.

FRANK L. IRWIN, OF COLUMBUS, OHIO, ASSIGNOR TO THE RALSTON STEEL CAR COMPANY,  
OF COLUMBUS, OHIO.

## STEEL UNDERFRAMING FOR RAILWAY-CARS.

No. 870,436.

Specification of Letters Patent.

Patented Nov. 5, 1907.

Application filed May 28, 1907. Serial No. 376,074.

*To all whom it may concern:*

Be it known that I, FRANK L. IRWIN, a resident of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Steel Underframing for Railroad-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in steel underframing for railway cars,—an object of the invention being to provide depressed supports for the side sills or stringers at the ends of the cross-bearers and bolsters whereby side sills or stringers of sufficient strength can be used and so disposed that their upper faces will be in alinement with the upper faces of the intermediate longitudinal sills or stringers for the reception of the flooring, and to so construct such depressed supports that they can be made separately and bolted to the ends of the bolsters and cross-bearers.

With this object in view the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a portion of a car underframe embodying my improvements. Fig. 2 is an enlarged fragmentary perspective view showing the attachment of the depressed sill support at the end of a bolster. Fig. 3 is a detail view of one of the supports for attachment to a cross-bearer.

1 represents the center girder of the box type, comprising channel iron members 2, 3, and a cover plate 4. Each end of the center girder is provided with depressed seats 5 for the reception of end sills. Adjacent to the ends of the girder are the bolsters 6 and between the bolsters, cross-bearers 7 suitably spaced apart, are secured to the center girder. Each bolster comprises two pairs of diaphragms 8 secured at their inner ends to the center girder, and a cover plate 9 disposed upon said diaphragms and passing through slots 10 in the respective members of the center girder. The pairs of diaphragms are connected by means of a bottom tie plate 11 extending under the center girder and secured at its respective ends to the flanges of the diaphragms.

Each cross-bearer comprises two channel members 12 abutting at their inner ends against and secured to the respective members of the center girder, and a cover plate secured upon the respective members 12 and passing through slots in the members of the center girder. A truss 13 is secured at its respective ends to the respective members of the cross-bearer and passes

under the center girder, to the flanges of which latter it is riveted.

Each end of each cross-bearer is notched as shown at 14 and to these notched ends of the cross-bearers, depressed seats 15 are secured. Each seat 15 is provided with flanges 16 spaced apart and projecting above and below the seat as well as rearwardly therefrom and are provided with holes 17 for the passage of both. The casting thus made is applied to the end of a cross-bearer so that the web of the latter will be disposed between the flanges 17 and bolts 18 are passed through the holes 17 in the flanges 16 and through alining holes in the web of the cross-bearer. The seat 15 is thus disposed some distance below the upper edge of the cross-bearer and enables the use of a side sill or stringer of considerable depth or thickness and will cause the same to be so disposed that its upper face will be in horizontal alinement with the upper faces of intermediate stringers for the reception of flooring. If desired brackets 19 may be secured to the cross-bearers to afford extended bearings for the intermediate stringers.

The flanges of the bolster diaphragms are cut away at their outer ends to permit the attachment of depressed seats 20 at the ends of the bolster for the reception of the side sills or stringers. The depressed seats at the ends of the bolsters, each comprise two members which may be pressed into shape to form supports 21 on which the side sill or stringer rests, vertical flanges 22 to be bolted to the side sill or stringer, rearwardly projecting flanges 23 to be riveted to the bolster diaphragm and a depending strengthening flange 24. Two depressed seats thus constructed are secured to the outer faces of the bolster diaphragms, as clearly shown in Fig. 2, and between the diaphragms a channel iron filler 25 is placed and secured in position by the same bolts which hold the seat members in place.

Slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope and hence I do not wish to restrict myself to the precise details herein set forth.

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is—

1. In a car underframe, a depressed seat for a side sill or stringer comprising a support for said side sill or stringer, and a flange projecting rearwardly from and above and below said support, said flange having holes for the passage of bolts to secure the device to the end of a transverse member of the car underframe.

2. In a car underframe, the combination with a center girder and a transverse member secured thereto, of depressed supports at the ends of said transverse members and provided with perforated flanges to receive bolts for

securing the depressed seat to the ends of said transverse members.

3. In a car underframe, the combination with a transverse member having its respective ends notched, of a depressed seat for a side sill or stringer secured to the notched ends of the transverse member and lying below the plane or the top of the latter.

4. In a car underframe, the combination with a transverse member, of a casting comprising a seat for a side sill or stringer and flanges to receive said transverse member between them, fastening means passing through said flanges and transverse member and said seat disposed in a plane below the top of said transverse member.

5. In a car underframe, the combination with a transverse member, of a seat for a side sill or stringer located at the end of said transverse member and disposed in a plane below the top of the latter, said seat provided with a flange secured to the transverse member.

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

FRANK L. IRWIN.

Witnesses:

R. R. WEAVER,

F. B. MODIE.