

A. BECKER.
 UNDERFRAME FOR CARS.
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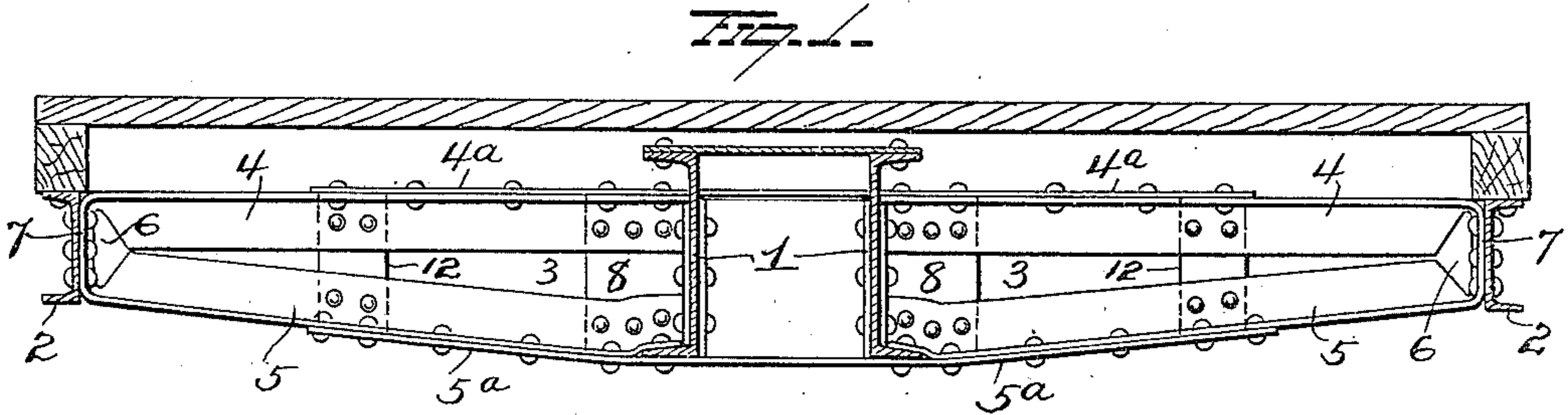


Fig. 1.

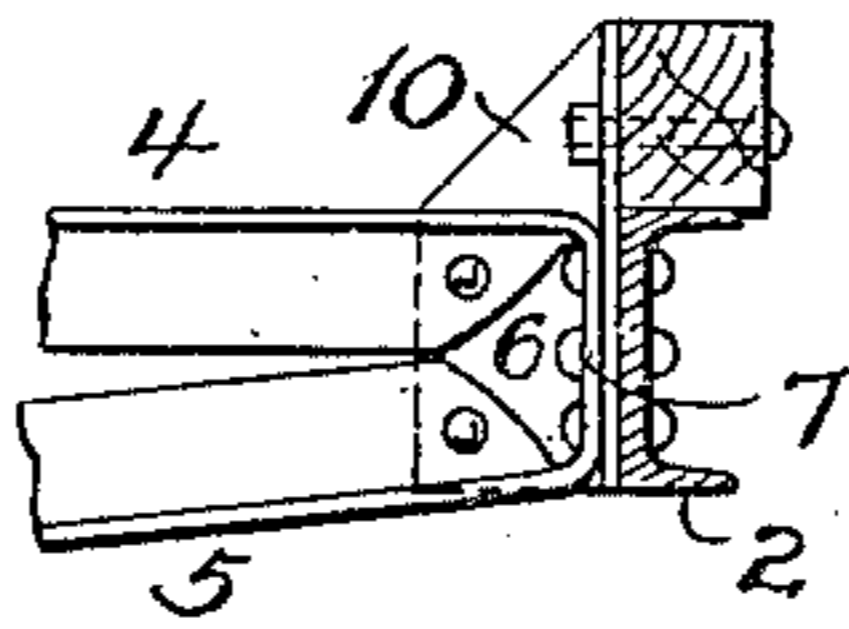
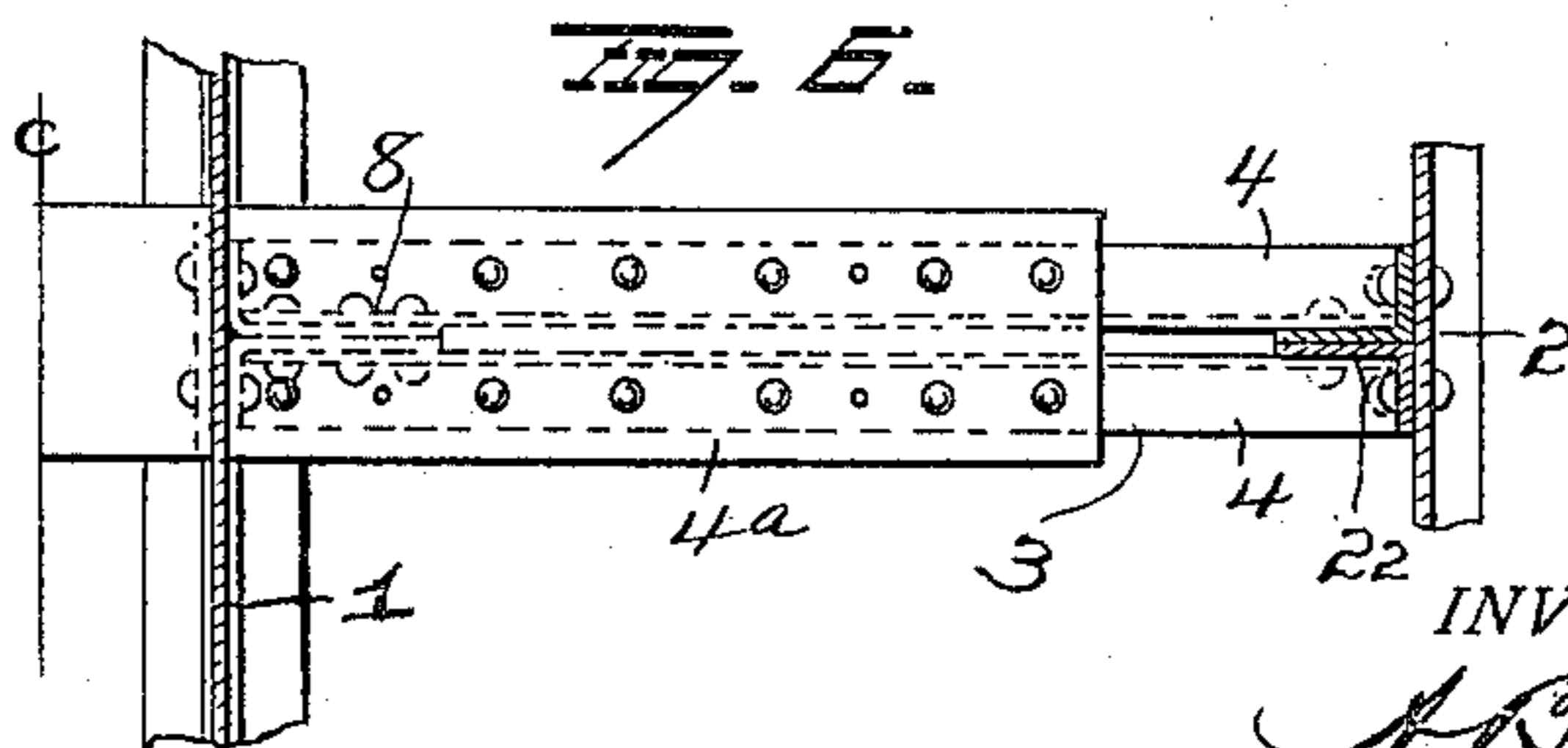
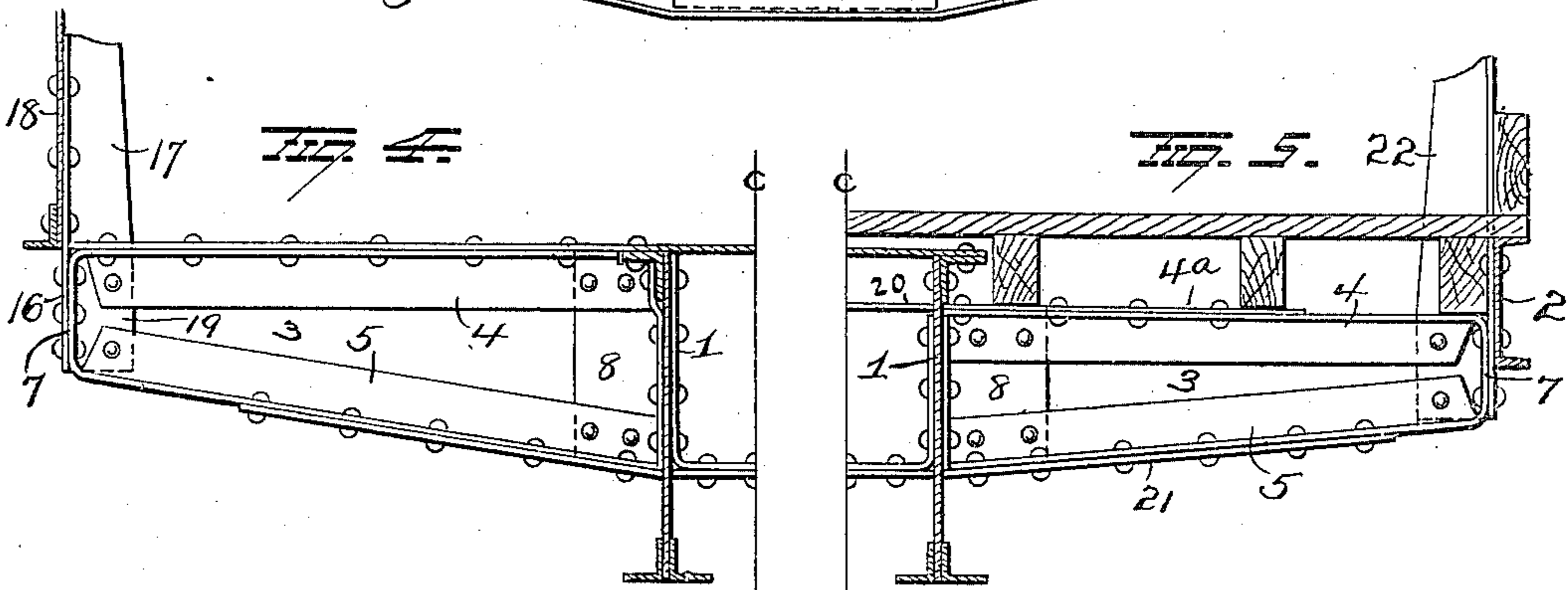
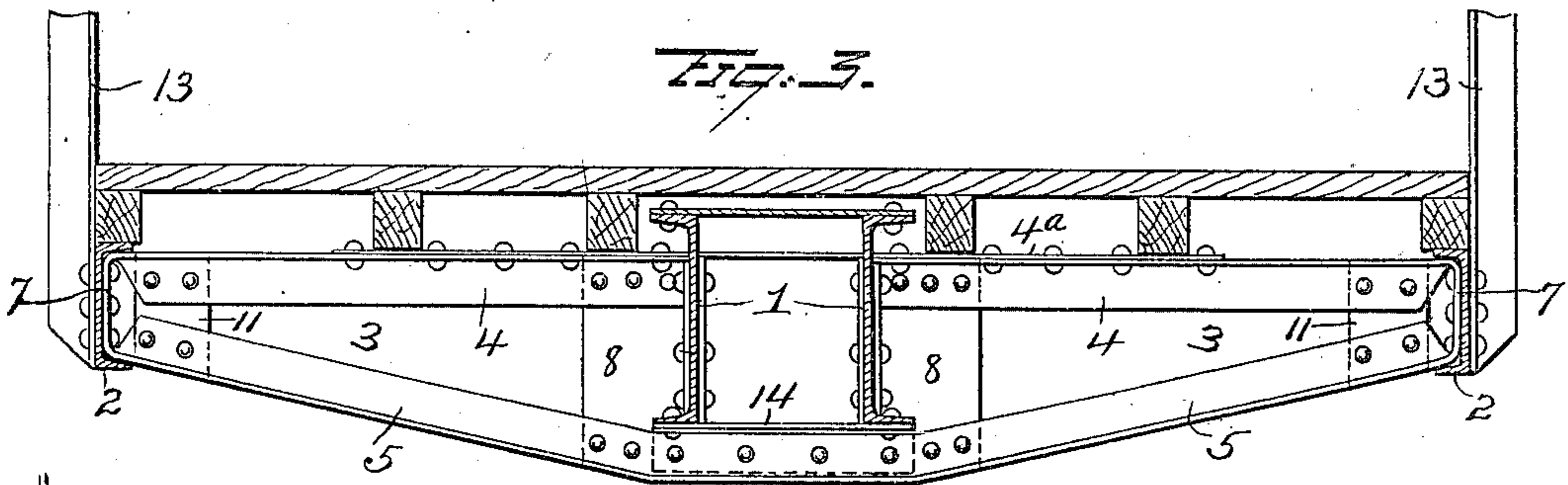


Fig. 2.



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UNDERFRAME FOR CARS.

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To all whom it may concern:

Be it known that I, ANTON BECKER, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Underframes for 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.

This invention relates to improvements in underframes for cars, and more particularly to the construction of cross-bearers,—the object of the invention being to provide a cross-bearer comprising tension and compression members made in a single piece of angle-beam, and to so construct and connect the same with the side sills and center girder as to cause substantially the entire load to come upon the center girder.

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 transverse sectional view of a car underframe. Fig. 2 is a view of a modification of the means for supporting the side furring strip. Fig. 3 is a transverse sectional view illustrating the application of my invention to a gondola car. Fig. 4 is a transverse sectional view showing my improvement when applied to an underframe having a deep center girder and plate side sills, and Figs. 5 and 6 are views of other modifications.

1 represents a center girder of the box type and 2 the side sills which are connected with the center girder by means of cross-bearers 3. Each cross-bearer comprises at respective sides of the center girder angle-beam tension and compression members 4, 5, which are made from a single angle-beam so as to be integral with each other. One flange of the angle-beam from which the tension and compression members are made, is cut away centrally between its ends as shown at 6 and at this point the angle-beam is bent so that when placed in position, the portion 7 which connects the tension and compression members will lie against the side sill to which it is riveted. Each angle-beam tension member is disposed horizontally while the compression member extends from the side sill in a diagonal direction to the lower portion of the center girder. At

the center girder, the members 4 and 5 are connected together and secured to the center girder by means of a gusset 8. A tension plate 4^a passes through the center girder a short distance below the top thereof and is secured to the horizontal flanges of the tension beams at respective sides of the center girder. A compression plate 5^a is secured to the compression beams at respective sides of the center girder passes under the latter and is secured to the bottom flanges thereof.

In the construction shown in Fig. 1, the side furring strip 9 is mounted upon the side sill but in order to afford a more secure support for the furring strip, I may employ a gusset 10 which is secured to the cross-bearer members 4—5 and projects above the plane of the cross-bearer in position to be bolted to the furring strip.

The construction shown in Fig. 3 is particularly adapted for use with gondolas. In this construction, a gusset 11 may be employed to connect the flanges of the tension and compression members in proximity to the connection of the latter with the side sill, or if desired a gusset 12 may connect the members 4—5 at points approximately midway between the center girder and side sill, as shown in Fig. 1. In Fig. 3 the flanges of the side sill are shown projecting inwardly and the integral connection 7 between the members 4—5 is secured to the side sill between the flanges of the latter, and the same rivets may be employed to secure the lower end of a stake 13 to the side sill. The compression member 5 may be extended under the center girder and secured to a flanged member 14 secured to said center girder and perform the functions of the compression plate 5^a shown in Fig. 1.

In the construction shown in Fig. 4, wherein a deep center sill and plate side sills are employed, the upper tension member of the cross-bearer is secured to the center girder in close proximity to the top thereof and the inner end of each compression member is secured to the side of the center girder some distance above the bottom of the latter. In securing these tension and compression members to the center girder, gussets 8 are employed, as before explained. The integral portion 7 connecting the tension and compression members 4—5 is secured to a depending portion 16 of a stake 17 and the latter is secured to the side sheeting 18 of the

car. The stake 17 is also made with a depending portion 19 which is riveted to the flanges of the members 4—5.

In the construction shown in Fig. 5 the cross-bearer members are connected with the center girder appreciable distances from both the top and bottom thereof. The tension plate 20 passes through the center girder and is secured to the upper member 4 of the cross-bearer at respective sides of the center girder. A compression plate 21 also passes through the center girder and is secured to the flanges of the lower members 5 of the cross-bearer.

In the construction shown in Figs. 5 and 6 the portions of the cross-bearer at each side of the center girder comprises two angle-beams placed side by side and each cut away to form the integral connecting portion 7. A stake 22 extends downwardly between the parallel angle-beams and are riveted thereto adjacent to the cut away portion 6 and said stake is also riveted to the connecting portions 7. The side sill 2 terminates at its lower edge approximately midway between the ends of the connecting portions 7 and is riveted to the upper part of the latter.

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

1. In a car underframe, the combination with a center girder and side sills, of a cross-bearer comprising at each side of the center girder a single angle beam having a portion of one flange removed intermediate of its ends and bent, forming integral tension and compression members, the connecting portions of said integral members lying flat against the side sills and secured thereto, and means securing the said tension and compression members to the center girder.

2. In a car underframe, the combination with a center girder and side sills, of a cross-bearer comprising at each side of the center girder angle-beam tension and compression members made integral with each other at their outer ends and secured to the side sill, and means for connecting the inner ends of said angle-beam members with the center girder.

3. In a car underframe, the combination with a center girder and side sills, of a cross-bearer comprising at each side of the center girder, angle-beam tension and compression members made from a single piece of angle-beam having one flange at its intermediate portion cut away and having the other flange of said intermediate portion secured to the side sill, and means connecting the inner ends of said integral angle-beam members to the center girder.

4. In a car underframe, the combination with a center girder and side sills, of a cross-bearer comprising at each side of the center girder tension and compression angle-beam members integral with each other, each having a portion of its vertical flange removed at their outer ends and having the flange connecting the said members secured to the side sill, means securing said members to the center girder, a tension plate passing through the center girder and secured to the respective tension members of the cross-bearer, and a compression plate connecting the compression members of the cross-bearer at respective sides of the center girder.

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

ANTON BECKER.

Witnesses

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