Oct. 20, 1925. 1,558,239

J. A. COSTELLO

CARLINE

Filed Sept. 12, 1923

Fig. 1

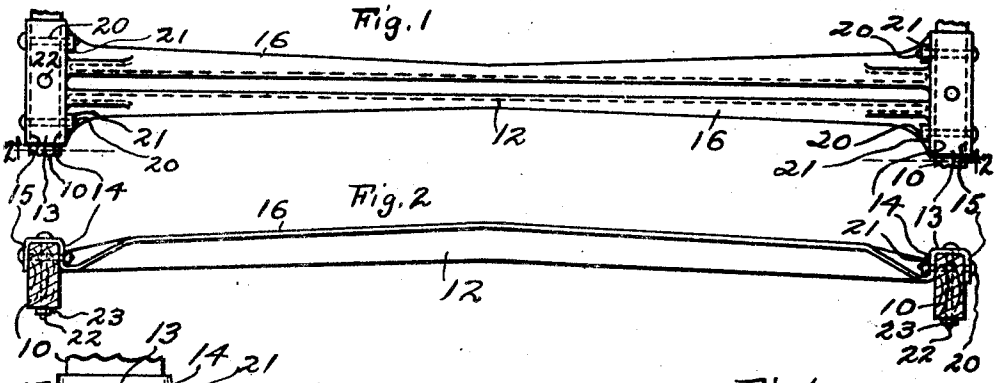


Fig. 2

Fig. 3

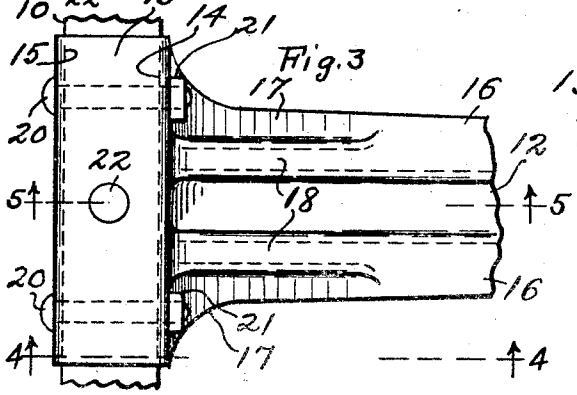


Fig. 6

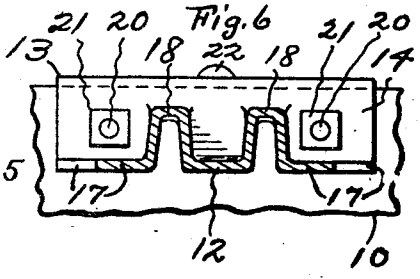


Fig. 4

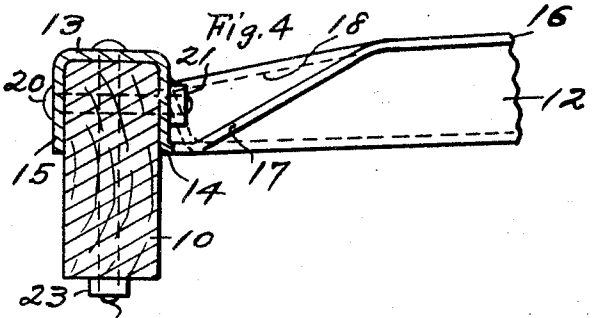
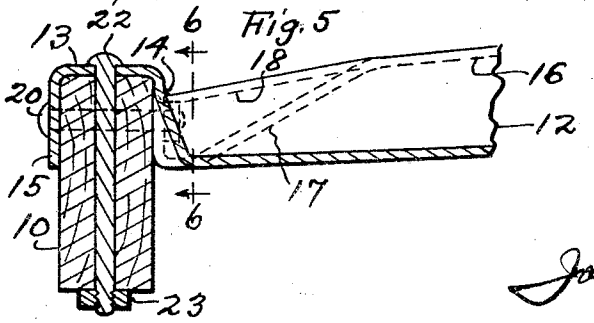


Fig. 5



Inventor:
Joseph A. Costello

By [illegible]
his Attorney.

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UNITED STATES PATENT OFFICE.

JOSEPH A. COSTELLO, OF CLEVELAND, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO CHICAGO-CLEVELAND CAR ROOFING COMPANY, OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE.

CARLINE.

Application filed September 12, 1923. Serial No. 662,329.

To all whom it may concern:

Be it known that I, JOSEPH A. COSTELLO, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Carline, of which the following is a specification.

This invention relates to improvements in carlines suitable for use in the construction of a car-roof-frame.

The primary object of this invention is to produce a highly practical pressed steel carline more especially adapted to be employed in connecting together two laterally spaced wooden side plates of a car-roof-frame and having end portions of such contour or configuration and dimensions that said portions are remarkably strong and adapted to straddle said side plates a suitable distance longitudinally of the plates and capable of efficiently tying said plates together and adequately bracing the inner sides of the plates.

My improved carline, as hereinafter described, comprises not only two inverted-channel-shaped transverse members forming opposite ends respectively of the carline and adapted to straddle opposite side plates respectively of a car-roof-frame, but a body which extends between and is rigid with the inner flanges of said transverse members and has each end portion thereof spaced at its outer end downwardly from the upper extremity of the inner flange of the adjacent inverted-channel-shaped transverse member, and I would here remark that another object of my invention is to render the inverted-channel-shaped transverse members of the carline highly practical for bracing the aforesaid side plates uninterruptedly substantially from end to end of said transverse member.

Another object is not only to produce a carline having said inverted-channel-shaped transverse members and a channel-shaped body extending between the central portions of the inner flanges of said transverse members, but to have adjacent portions of said body and said transverse members so relatively arranged that the carline is rendered exceptionally strong at the ends of the body.

The hereinafter described carline has its widest portions formed by the inverted-channel-shaped transverse members of the carline and has its channel-shaped body provided with two laterally and outwardly projecting longitudinal flanges which are arranged at the top edge of opposite sides respectively of the body and extend to the inner flanges of said inverted-channel-shaped transverse members, and another object is to connect each end of each of said longitudinal flanges to the inner flange of the adjacent transverse member of the carline only at points spaced downwardly from the upper extremity of said inner flange of said transverse member, so as to insure the required strength, endurance, and bracing ability in the end portions of the carline.

With these objects in view, and to attain any other object hereinafter appearing, this invention consists in certain structural features, and combinations and relative arrangements of parts hereinafter described in this specification, pointed out in the claims, and illustrated in the accompanying drawings.

In said drawings, Figure 1 is a top plan showing my improved carline extending between and employed in connecting together two laterally spaced side plates of a car-roof-frame. Fig. 2 is a vertical section taken along the line 2—2 in Fig. 1. Fig. 3 is an enlarged view of an end portion of Fig. 1. Figs. 4 and 5 are vertical sections taken along the line 4—4 and line 5—5 respectively in Fig. 3. Fig. 6 is a vertical transverse section taken along the line 6—6 in Fig. 5.

In Figs. 1 and 2 of said drawings, 10 indicates two laterally spaced and substantially horizontal parallel wooden side plates of a car-roof-frame, and 12 indicates the channel-shaped body of a metal carline embodying my invention, and said body is shown as extending between the side plates 10 and connected to said side plates as will hereinafter appear.

My improved carline (see Figs. 1 and 2) preferably consists of a single pressed steel section and comprises two substantially parallel and substantially horizontal inverted-channel-shaped transverse members 13 forming opposite ends respectively of the carline, and the body 12 extends between and is preferably integral and therefore

rigid with the inner flanges 14 of said transverse members.

Figs. 3, 4, 5, and 6 show one end portion of a carline embodying my invention and a side plate 10 straddled by the inverted-channel-shaped transverse member of said end portion of the carline.

Each end portion of the body 12 is spaced at the outer ends of the top edges of its sides downwardly from the upper extremity of the inner flange 14 of the adjacent transverse member 13, and said flange extends substantially vertically downwardly from the top of said transverse member. It will be observed that each end of the bottom of the body 12 (see Fig. 5) is spaced from the outer flange 15 of the adjacent transverse member 13 a distance which measures more than the distance between said outer flange and the upper extremity 14^a of the inner side of the inner flange 14 of said adjacent transverse member but preferably considerably less than twice said distance, and said inner flange is shown as abutting, above the outer extremities of the top edges of the sides of the adjacent end portion of the body 12, against the inner side of the adjacent side plate 10 and substantially from end to end of said transverse member. The upper end portion 14^a of the inner flange 14 of each transverse member 13 extends therefore uninterruptedly substantially from end to end of said transverse member. The central portion of the inner flange 14 of each transverse member 13 extends from side to side of the body 12 and, as shown in Fig. 5, toward and connects with the adjacent end of the bottom of said body. Each end of the bottom of the body 12, as shown in Fig. 5, is, as above noted, spaced somewhat from the adjacent side plate 10 shown straddled by a transverse member 13 of the carline, and I would here remark that, to facilitate the production of a pressed steel carline embodying my invention from an oblong steel sheet or plate of suitable dimensions, the central portion of the inner flange 14 of said transverse member slopes from between the upper extremities of the adjacent ends of the sides of the body 12 somewhat inwardly and downwardly to the bottom of said body and connects with the said bottom from side to side of the bottom, and it will be observed that the slope, as shown in Fig. 5, of said portion of said flange is such as to avoid objectionably shortening of said body at its bottom.

The body 12 is shown as having two laterally and outwardly projecting longitudinal flanges 16 which are arranged at the top edge of opposite sides respectively of the body and extend to and are rigid with the transverse members 13, and each end portion of each longitudinal flange 16 is spaced at its outer end downwardly from the upper extremity of the inner flange 14 of the adjacent transverse member.

As shown in Fig. 1, the channel-shaped body 12 extends between the central portions of the inverted-channel-shaped transverse members 13 of the carline and, as more clearly shown in Figs. 3, 4 and 6, the outer part 17 of each end portion of each longitudinal flange 16 is depressed and connected at its lower end to the adjacent portion of the inner flange 14 of the adjacent transverse member 13. The inner part 18 of each end portion of each longitudinal flange 16 is connected to the inner flange 14 of the adjacent transverse member 13 at the top of the adjacent portion of the body 12 but at a point spaced downwardly from the upper extremity of the last-mentioned flange.

A pressed steel carline, each end portion of which has the hereinbefore described contour or configuration and dimensions and relative arrangement of its various members or parts, is remarkably strong and durable at the inner flange 14 of each inverted-channel-shaped transverse member 13, and said transverse member is not only adapted to straddle a side plate of a car-roof-frame but capable of adequately bracing said side plate uninterruptedly substantially from end to end of said transverse member.

Each side plate 10 and the flanges 14 and 15 of the inverted-channel-shaped transverse members straddling said plate are shown secured together by suitably applied bolts 20 and nuts 21, and each of said transverse members is also shown secured, centrally between its flanges, to said plate by a bolt 22 and a nut 23.

By the hereinbefore described and illustrated construction it will be observed that the channel-shaped body 12 is in the form of a trough, that the inner flange 14 of each transverse member 13 extends above and transversely of the inner part 18 of the adjacent end portion of each longitudinal flange 16 and above and transversely of the adjacent end of said body 12 and is connected to the longitudinal flanges 16 from the adjacent extremity of the outer longitudinal edge of the depressed outer part 17 of each longitudinal flange to said body and also connected at the sides of and to said body from top to bottom of the body, that the inner flange 14 of each transverse member 13 has the portion thereof which extends above the adjacent ends of the body and longitudinal flanges arranged to abut against the adjacent side plate 10 from end to end of said transverse member and that the upper end portion of said inner flange of said transverse member extends uninterruptedly from end to end of said transverse

member, and that the meritorious features thus pointed out materially participate in rendering the carline remarkably strong and durable at and along the inner flange 14 of each transverse member 13.

What I claim is—

1. A metal carline comprising two substantially parallel and substantially horizontal inverted-channel-shaped transverse members forming opposite ends respectively of the carline, and a body extending between and rigid with the inner flanges of said transverse members, each end portion of said body being spaced at its outer end downwardly from the upper extremity of the inner flange of the adjacent transverse member, and the inner flange of each inverted-channel-shaped transverse member having an upper portion extending uninterruptedly substantially from end to end of said transverse member.

2. A metal carline comprising two substantially parallel inverted-channel-shaped transverse members forming opposite ends respectively of the carline, and a channel-shaped-body extending between and rigid with the inner flanges of said transverse members, each end portion of said body being spaced at the outer ends of its top edges downwardly from the upper extremity of the inner flange of the adjacent transverse member, and the inner flange of each inverted-channel-shaped transverse member being connected between the sides of said body to the adjacent end of the bottom of the body and having an upper portion which extends continuously from end to end of said transverse member.

3. A metal carline comprising two substantially parallel inverted-channel-shaped transverse members forming opposite ends respectively of the carline, and a channel-shaped body extending between and rigid with the inner flanges of said transverse members, each end of the bottom of said body being spaced from the outer flange of the adjacent transverse member a distance which measures more but less than twice the distance between said outer flange and the upper extremity of the inner side of the inner flange of said adjacent transverse member, and the inner flange of each inverted-channel-shaped transverse member having an upper portion which extends substantially from end to end of said transverse member and also having a portion which extends between the sides of and is connected to the aforesaid bottom.

4. A metal carline comprising two substantially parallel inverted-channel-shaped transverse members forming opposite ends respectively of the carline, and a channel-shaped body extending between the central portions of and rigid with the inner flanges of said transverse members, each end portion of said body being spaced at the outer ends of its top edges downwardly from the upper extremity of the inner flange of the adjacent transverse member, said body having two laterally and outwardly projecting longitudinal flanges which are arranged at the top edge of opposite sides respectively of the body and extend to and are rigid with the inverted-channel-transverse members, and each end portion of each longitudinal flange of said body having its outer end spaced at the top of said body downwardly from the upper extremity of the inner flange of the adjacent transverse member.

5. A metal carline comprising two inverted channel-shaped transverse members forming opposite ends respectively of the carline, and a channel-shaped body extending between the central portions of and rigid with the inner flanges of said transverse members, each end portion of said body being spaced at its outer end downwardly from the upper extremity of the inner flange of the adjacent transverse member, the inner flange of each inverted-channel-shaped transverse member extending substantially vertically downwardly from the top of said transverse member, the aforesaid body having two laterally and outwardly projecting longitudinal flanges which are arranged at the top edge of opposite sides respectively of the body and extend to the inverted-channel-shaped transverse members, the outer part of each end portion of each longitudinal flange being depressed and connected at its lower end to the inner flange of the adjacent transverse member, and the inner part of each end portion of each longitudinal flange being connected, at the top of the aforesaid body but below the upper extremity of the inner flange of the adjacent transverse member, to the last-mentioned flange.

6. The combination, with two laterally spaced side plates of a car-roof-frame, of a metal carline comprising two inverted-channel-shaped transverse members which straddle opposite side plates respectively and also comprising a channel-shaped body which extends between the central portions of the inner flanges of said side plate, each end portion of said body being spaced at its outer end downwardly from the upper extremity of the inner flange of the adjacent transverse member, the upper end portion of the inner flange of each transverse member abutting against the adjacent side plate above the outer end of the adjacent end portion of said body and extending substantially from end to end of said transverse member, the bottom of said body being spaced at the ends from the inner flanges of the aforesaid transverse members, and the central portion of the inner flange of each of

said transverse members extending toward and connecting with the adjacent end of said bottom.

7. A metal carline comprising two inverted-channel-shaped transverse members forming opposite ends respectively of the carline, and a channel-shaped body which extends between and to the central portions of the inner flanges of said transverse members and is spaced at its ends downwardly from the upper extremities of said flanges and has two laterally and outwardly projecting longitudinal flanges formed at the top edges of opposite sides respectively of the body and spaced at their ends downwardly from said extremities of and extending to and rigid with the first-mentioned flanges, the outer part of each end portion of each longitudinal flange being depressed, and the inner flange of each transverse member extending above and transversely of the inner part of the adjacent end portion of each longitudinal flange and above and transversely of the adjacent end of the aforesaid body and being connected to said body and to each longitudinal flange from the outer longitudinal edge of the depressed outer part of said longitudinal flange to said body.

8. A metal carline comprising two inverted-channel-shaped transverse members forming opposite ends respectively of the carline, and a channel-shaped body which is in the form of a trough and extends between and to the inner flanges of said transverse members and is spaced at its ends downwardly from the upper extremities of said flanges and has two laterally and outwardly projecting longitudinal flanges formed at the top edges of opposite sides respectively of the body and spaced at their ends downwardly from said extremities of and extending to the first-mentioned flanges, the inner flange of each transverse member having a portion which slopes from between the upper extremities of the adjacent ends of the sides of the aforesaid body inwardly and downwardly to the bottom of said body, and said inner flange of each transverse member extending above and transversely of the adjacent end portion of each longitudinal flange and above and transversely of the adjacent end of the aforesaid body and being rigid with said body and with each longitudinal flange.

9. The combination, with the two laterally spaced side plates of a car-roof-frame, of a metal carline comprising two inverted-channel-shaped transverse members which straddle opposite side plates respectively and also comprising a channel-shaped body which extends between the central portions of the inner flanges of said side plate, each end portion of said body being spaced at its outer end downwardly from the upper extremity of the inner flange of the adjacent transverse member, the upper end portion of the inner flange of each transverse member abutting against the adjacent side plate above the outer end of the adjacent end portion of said body and extending substantially from end to end of said transverse member, the bottom of said body being spaced at each end from the adjacent side plate, the inner flange of each transverse member having a portion which slopes from and between the upper extremities of the adjacent ends of the sides of said body inwardly and downwardly to the adjacent end of said bottom and being connected to said bottom from side to side and from top to bottom of the body.

10. The combination, with the two laterally spaced side plates of a car-roof-frame, of a pressed steel carline comprising two inverted-channel-shaped transverse members which straddle opposite side plates respectively and also comprising a channel-shaped body which is in the form of a trough and extends between the inner flanges of said transverse members and is spaced somewhat at the ends of its bottom from the side plates and has two laterally and outwardly projecting longitudinal flanges formed at the top edge of opposite sides respectively of the body and extending to the first-mentioned flanges, the inner flange of each transverse member being connected to the adjacent end of the trough-shaped body from side to side and from top to bottom of the body and extending above and transversely of said adjacent end of said body and above and transversely of the adjacent end of and being rigid with each longitudinal flange, said inner flange of each transverse member having the portion thereof, which extends above the adjacent ends of the body and above the adjacent ends of the longitudinal flanges, abutting against the adjacent side plate substantially from end to end of said transverse member.

In testimony whereof, I sign the foregoing specification, this 27th day of August, 1923.

JOSEPH A. COSTELLO.