Dec. 31, 1940. C. F. WALP 2,226,678

WELDED TRUCK BOLSTER

Filed April 21, 1938

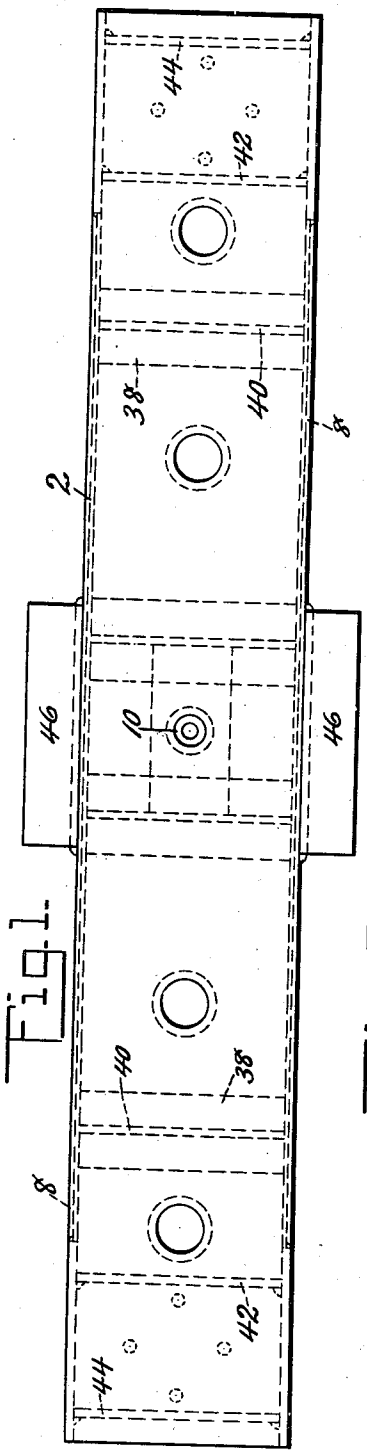

Fig. 1.

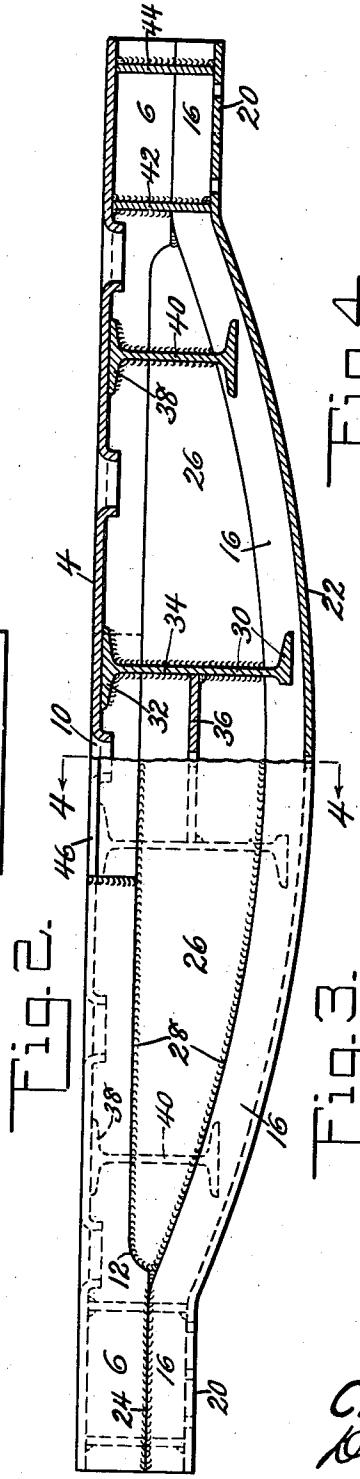

Fig. 2.

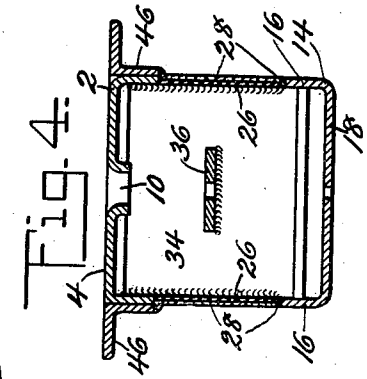

Fig. 4.

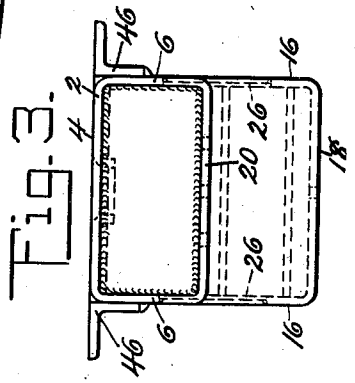

Fig. 3.

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WELDED TRUCK BOLSTER

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8 Claims. (Cl. 105—226)

This invention relates to bolsters in general and in particular to truck bolsters of the fabricated type which may be welded together into a unitary structure.

Bolsters as constructed in the past have been cast in one piece, although a few attempts have been made to form welded bolsters but without any particular success since they were either extremely hard to fabricate or were exceedingly expensive.

It is an object, therefore, of the present invention to provide a bolster construction which avoids the use of expensive dies and excessive welding.

A further object of the invention is the provision of a bolster so formed of pressed parts as to eliminate any deep drawing of the metal with the consequent excessive distortion and weakening thereof.

A still further object of the invention is the provision of a welded bolster having comparatively heavy section top and bottom chords connected by a central web plate formed of much thinner metal thus permitting the construction of a light weight bolster.

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 the welded bolster;

Fig. 2 is an elevational view of the bolster, one-half being broken away substantially at the longitudinal center line in order to more clearly disclose the unitary construction;

Fig. 3 is an end view of the completed bolster, and

Fig. 4 is a sectional view taken substantially on line 4—4 of Fig. 2.

Referring now to the drawing in detail, it is seen that the bolster is formed with a top cover plate 2 of approximately channel form, extending substantially in a straight line from end to end of the bolster and formed with a substantially flat web portion 4 and downwardly directed flanges 6. As clearly shown in the drawing the web portion is pressed with lightening openings 8 on either side of the transverse center and with and opening 10 at the center thereof to receive the king pin, which is not shown. The flanges 6 of this top cover plate are cut away any desired amount as at 12 in order that the end portions of the top cover plate may be sufficiently deep, while the central portion of the flanges is only of sufficient depth to give the requisite strength. The bottom cover plate 14 is also of approximately channel cross section having substantially constant depth upwardly directed flanges 16 joined together by a horizontal web portion 18. This bottom cover plate is pressed so as to have substantially horizontal end portions 20 joined together by a downwardly curved central portion 22. The flanges 6 and 16 of the top and bottom cover plates are directly joined together adjacent the ends of the bolster as at 24, while the intermediate portions are joined together by means of the web plate 26 continuously welded to the flanges 6 and 16 as at 28.

The bolster is reinforced adjacent the center thereof by the center bearing reinforcement means 30 which in the present instance is shown as formed by short sections of rolled I-beams with one pair of flanges 32 directly welded to the top cover plate and with the web 34 welded to the flanges 6 and web plate 26 as clearly shown in Fig. 2. In order to tie the webs 34 together and at the same time form a support for the lower end of the king pin a bar 36 is welded to the webs of the adjacent center bearing reinforcing I-beams. In order to reinforce the bolster beneath each side bearing short sections of rolled I-beam are utilized having one pair of flanges 38 and a portion of the web welded to the top cover plate, while the remainder of the web 40 is securely welded to the web plate 26. The ends of the bolster are reinforced adjacent the spring bearing portions by inner and outer rectangular plates 42 and 44 respectively, the former being securely welded on either side to the top cover plate and upon at least one side to the bottom cover plate, while the latter is similarly welded or, as shown in Fig. 2, is welded only upon one side to the top and bottom cover plates. The bolster when completed will, of course, have the customary column guides and side bearings attached thereto in any suitable manner, such as welding, and will also be provided with the customary center bearing, the latter resting upon the top cover plate and being secured thereto with portions of the side edges secured to angle members 46 welded to the top cover plate and extending the width of the bolster adjacent the center.

In the construction of the bolster the top cover plate will have the center reinforcing I-beams, side bearing reinforcing I-beams and at least the plates 42 securely welded to the web 4 and flanges 6. With these reinforcing members in position the web plates 26 will be brought into position and securely welded as at 28 to the flanges 6 and to the webs of the side and center bearing reinforcing I-beams. The bottom cover plate may

now be placed in position and securely welded along the edges of the flanges 16 to the web plate 26 and flanges 6 of the top cover plate after which portions of the plates 42 may be welded to the web and flanges of the bottom cover plate by reaching in through the ends of the bolster. With the plates 42 securely welded in position the plates 44 may be inserted and welded completely around their edges to the webs and flanges of the top and bottom cover plates.

With the bolster constructed as shown and described it will be seen that an extremely light and strong construction has been provided with the metal distributed to far better advantage than is possible with castings or with the fabricated bolsters as previously constructed.

While the bolster has been described more or less in detail, it is obvious that various modifications and rearrangements of parts will be apparent to persons skilled in the art and all such modifications and rearrangements are contemplated as fall within the scope of the following claims.

What is claimed is:

1. A welded bolster comprising in part, an upper cover plate of approximately channel cross-section having the flanges thereof directed downwardly, web plates welded to the central portions of said flanges and in the planes thereof, bracing means projecting below the lower edge of said web plates and welded to said top cover plate and web plates to stiffen the same, and a bottom cover plate of approximately channel cross-section having substantially uniform depth flanges directed upwardly and welded to the web plates and overlapping a portion of said bracing means, said cover plates and web plates being so formed and arranged as to permit the flanges of the top and bottom cover plates to be welded directly to each other adjacent the ends of the bolster outwardly of the web plates, said web plates being of an average thickness less than the average thickness of the cover plates whereby the bolster is materially lightened.

2. A welded bolster comprising in part, an upper cover plate of approximately channel cross-section with the flanges directed downwardly, web plates welded to the central portions of said flanges and in the planes thereof, bracing means welded only to said top cover plate and web plates to stiffen the same, a bottom cover plate of approximately channel cross-section with the flanges directed upwardly and welded to the web plates and enclosing said bracing means, and additional bracing means enclosed by and welded to said top and bottom cover plates outwardly of the web plates, said cover plates and web plates being so formed and arranged as to permit the flanges of the top and bottom cover plates to be welded directly to each other adjacent the ends of the bolster outwardly of the web plates.

3. A bolster comprising in part, an upper cover plate of approximately channel cross-section with varying depth flanges directed downwardly, web plates secured to said flanges in the area of least depth, bracing means secured to the top cover plate and web plates to stiffen the same, and a bottom cover plate of approximately channel cross-section with substantially uniform depth flanges directed upwardly and secured to the web plates and overlapping the lower portion of said bracing means, said cover plates and web plates being so formed and arranged as to permit the flanges of the top and bottom cover plates to be secured directly to each other adjacent the ends of the bolster outwardly of the web plates.

4. A welded bolster comprising in part, an upper cover plate of approximately channel cross-section with the flanges directed downwardly, web plates welded to the central portions of said flanges and in the planes thereof, center and side bearing bracing means welded to said top cover plate and web plates to connect and stiffen the same, a bottom cover plate of approximately channel cross-section with the flanges directed upwardly and welded to the web plates and enclosing said bracing means, and spring bearing bracing means enclosed by and welded to said top and bottom cover plates outwardly of the web plates, said cover plates and web plates being so formed and arranged as to permit the flanges of the top and bottom cover plates to be welded directly to each other adjacent the ends of the bolster outwardly of the web plates.

5. A welded bolster comprising in part, an upper cover plate of approximately channel cross-section with the flanges directed downwardly, web plates welded to the central portions of said flanges and in the planes thereof, bracing means of I-beam cross-section welded to said top cover plate and web plates to stiffen the same, a bottom cover plate of approximately channel cross-section with the flanges directed upwardly and welded to the web plates and enclosing said bracing means, and plate metal bracing means enclosed by and welded to said top and bottom cover plates outwardly of the web plates, said cover plates and web plates being so formed and arranged as to permit the flanges of the top and bottom cover plates to be welded directly to each other adjacent the ends of the bolster outwardly of the web plates.

6. A welded bolster comprising in part, an upper cover plate of approximately channel cross-section with the flanges directed downwardly, web plates welded to the central portions of said flanges and in the planes thereof, bracing means of I-beam cross-section with the web disposed substantially vertical and welded to said top cover plate and web plates to stiffen the same, a bottom cover plate of approximately channel cross-section with the flanges directed upwardly and welded to the web plates and enclosing the lower ends of said I-beam bracing means, and a plurality of plate metal bracing means at either end of the bolster enclosed by and welded to said top and bottom cover plates outwardly of the web plates, said cover plates and web plates being so formed and arranged as to permit the flanges of the top and bottom cover plates to be welded directly to each other adjacent the ends of the bolster outwardly of the web plates.

7. A welded bolster comprising in part, an upper cover plate of approximately channel cross-section with the flanges thereof directed downwardly, web plates welded to the central portions of said flanges and in the planes thereof, bracing means positioned wholly within said bolster adjacent the center and side bearing portions thereof and welded to said top cover plate and web plates to stiffen the same, a bottom cover plate of approximately channel cross-section having flanges directed upwardly and welded to the lower edges of said web plates and overlapping a portion of said bracing means, and additional bracing means positioned within the bolster and welded to said top and bottom cover plates laterally outward of the web plates, said cover plates and web plates being so formed and arranged as to permit the flanges of the top and bottom cover plates to be welded di-

rectly to each other adjacent the ends of the bolster and outwardly of the web plates.

8. A welded bolster comprising in part, an upper cover plate of approximately channel cross-section with the flanges directed downwardly, web plates welded to the central portions of said flanges and in the planes thereof, bracing means of I-beam cross-section welded to said top cover plate and web plates to stiffen the same, said bracing means projecting below the lower edge of said web plates, a bottom cover plate of approximately channel cross-section with the flanges directed upwardly and welded to the web plates and overlapping the projecting portions of said bracing means, and plate metal bracing means enclosed by and welded to said top and bottom cover plates outwardly of the web plates, said cover plates and web plates being so formed and arranged as to permit the flanges of the top and bottom cover plates to be welded directly to each other adjacent the ends of the bolster outwardly of the web plates.

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