

E. C. COVERT.
TRUCK SIDE FRAME.

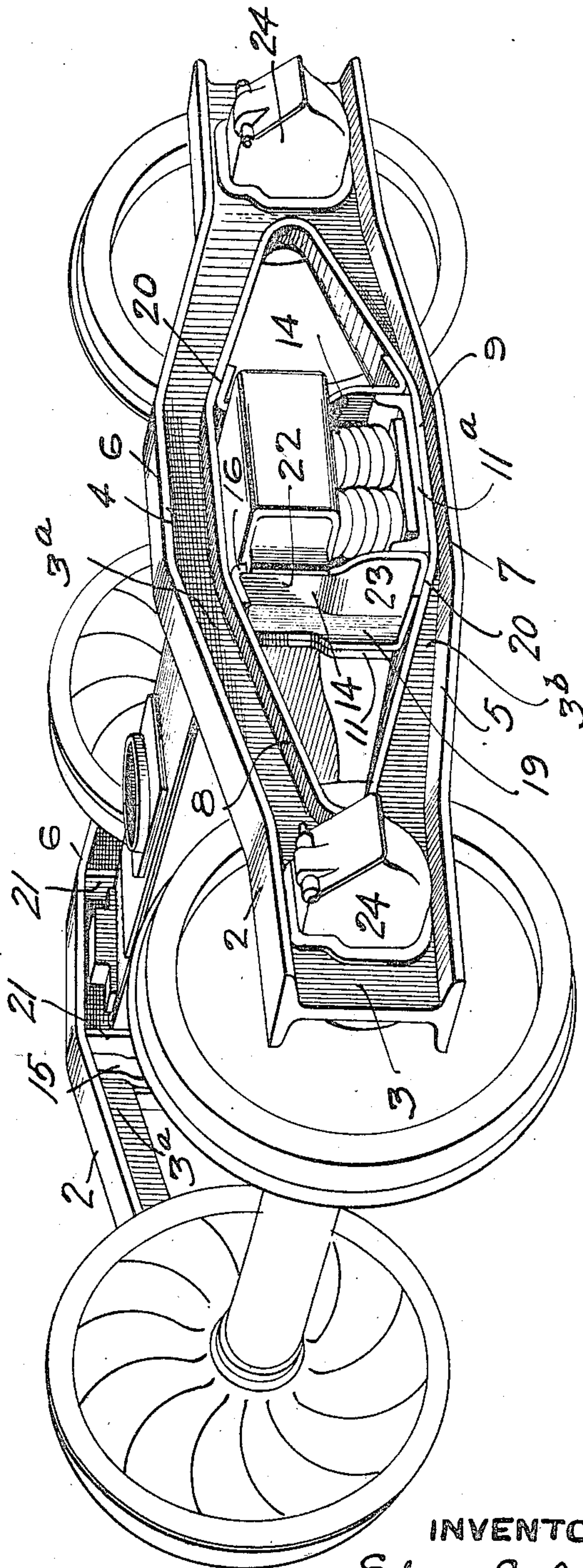
APPLICATION FILED JULY 28, 1910. RENEWED APR. 28, 1911.

994,093.

Patented May 30, 1911.

3 SHEETS—SHEET 1.

FIG. 1



WITNESSES.
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David R. Beatty

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3 SHEETS—SHEET 2.

FIG. 2

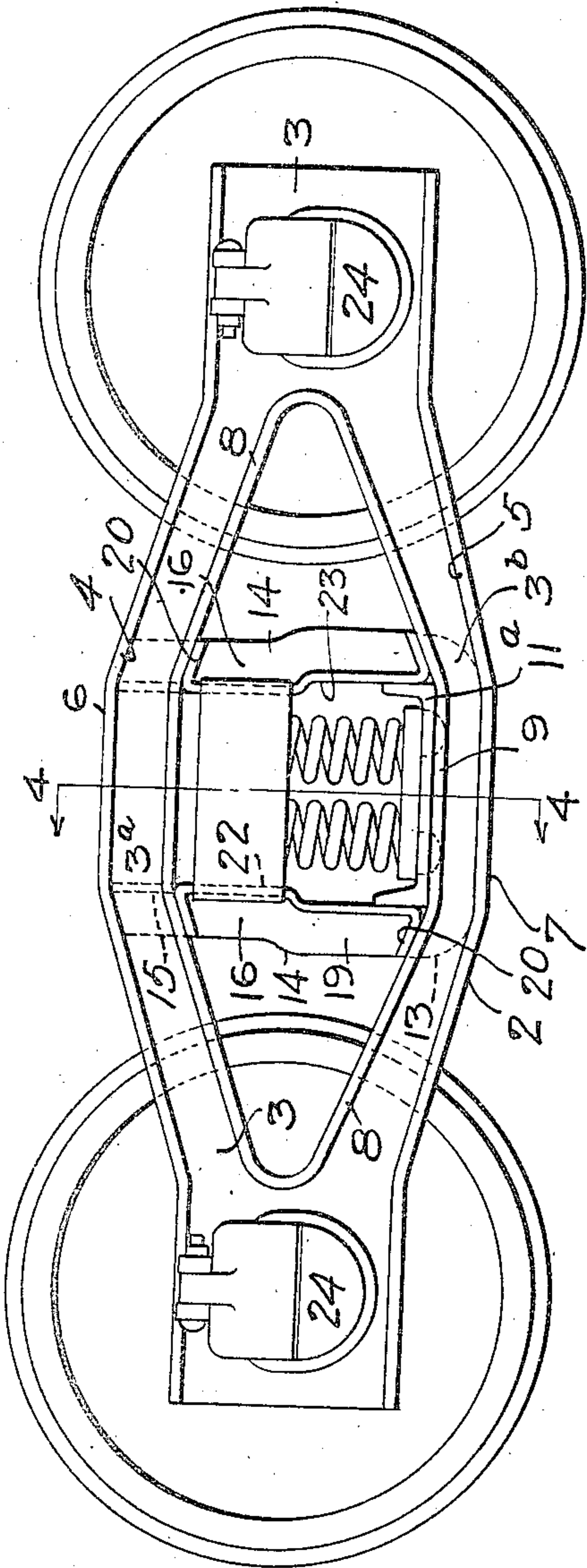
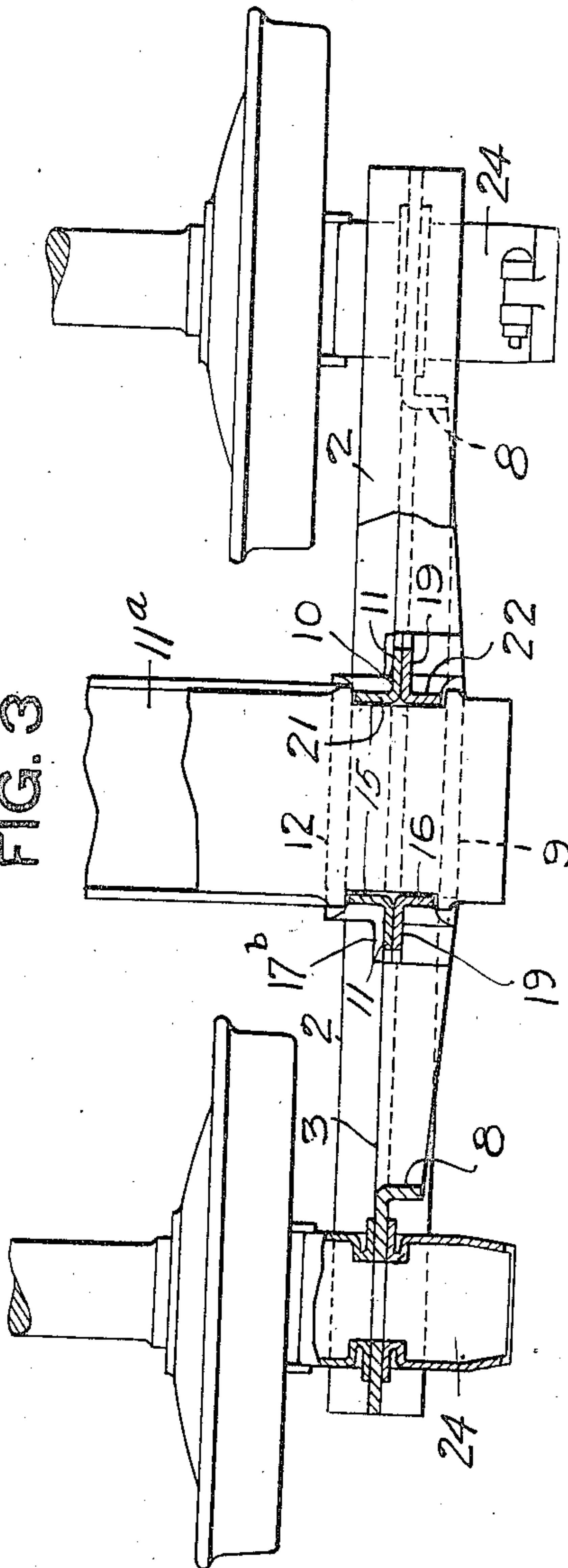


FIG. 3



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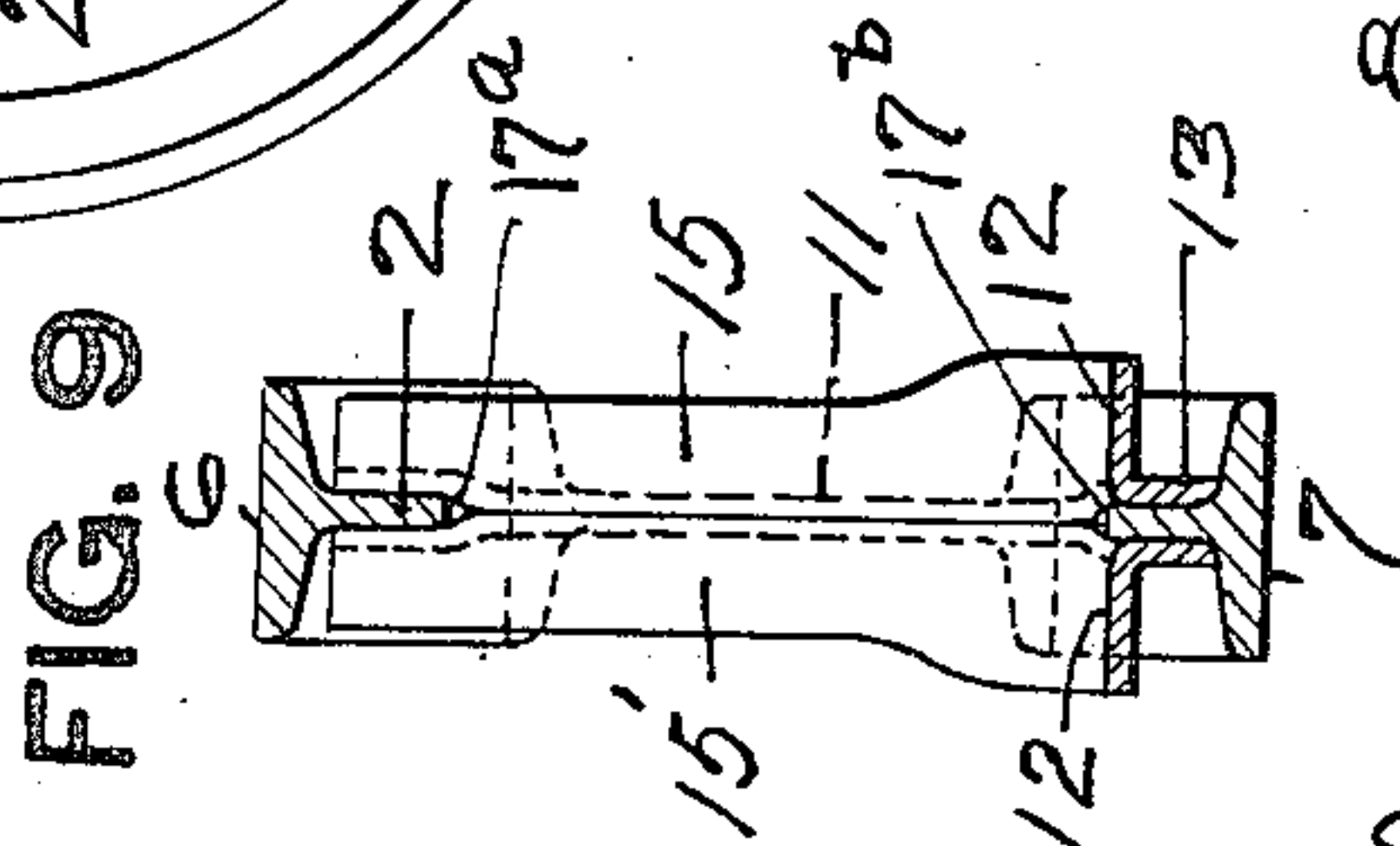
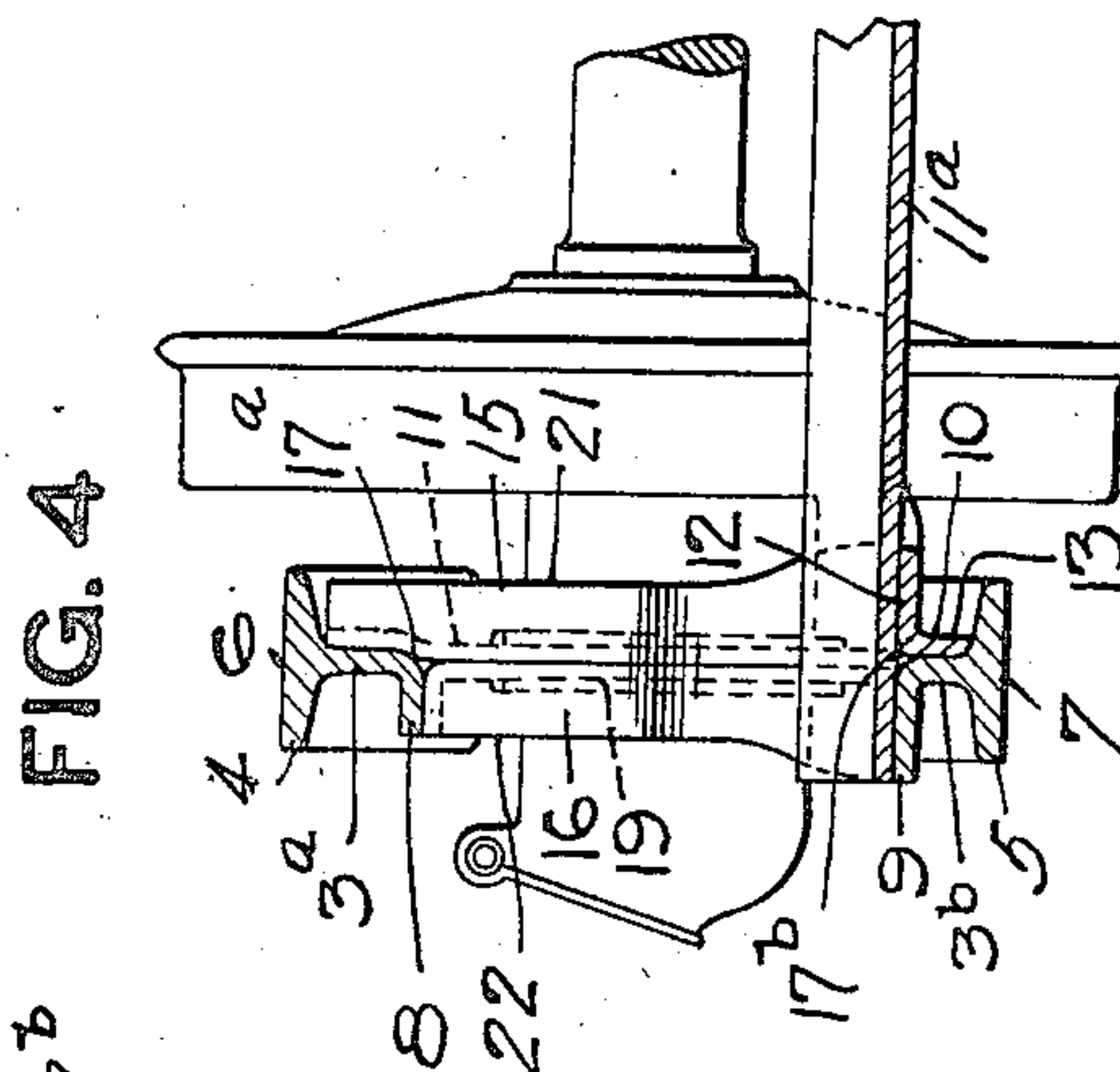
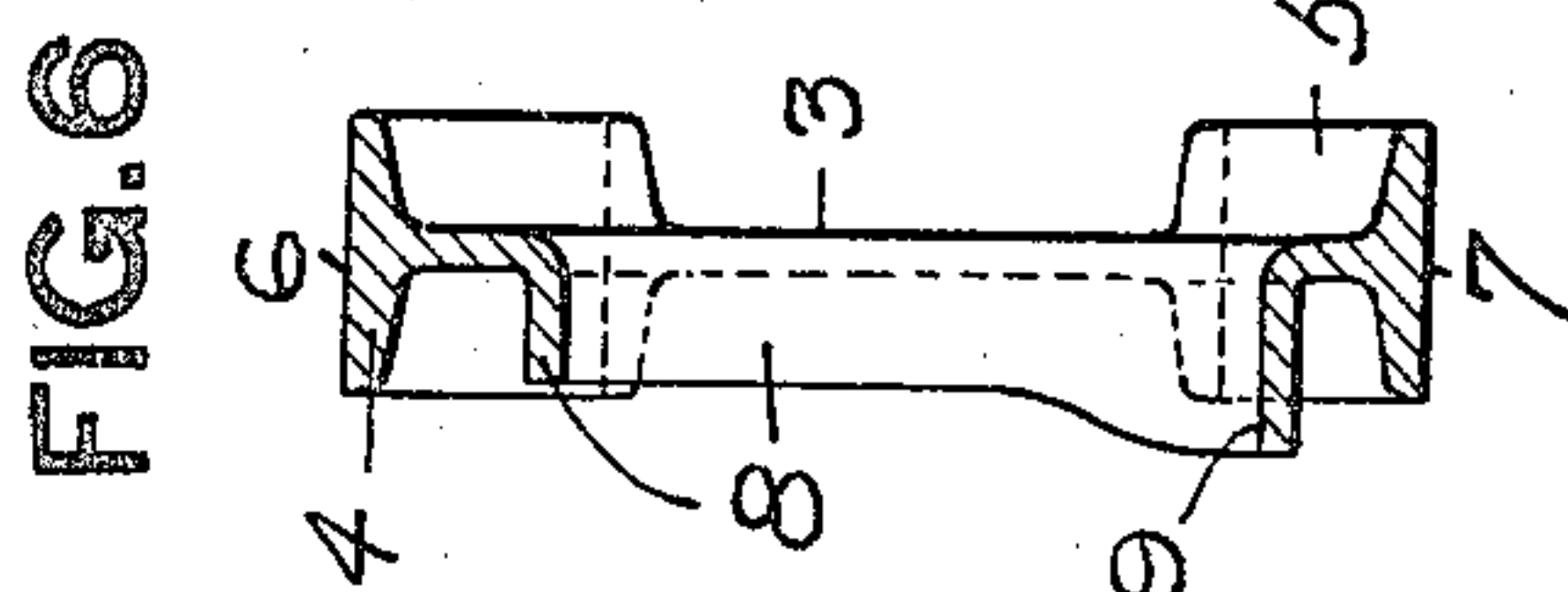
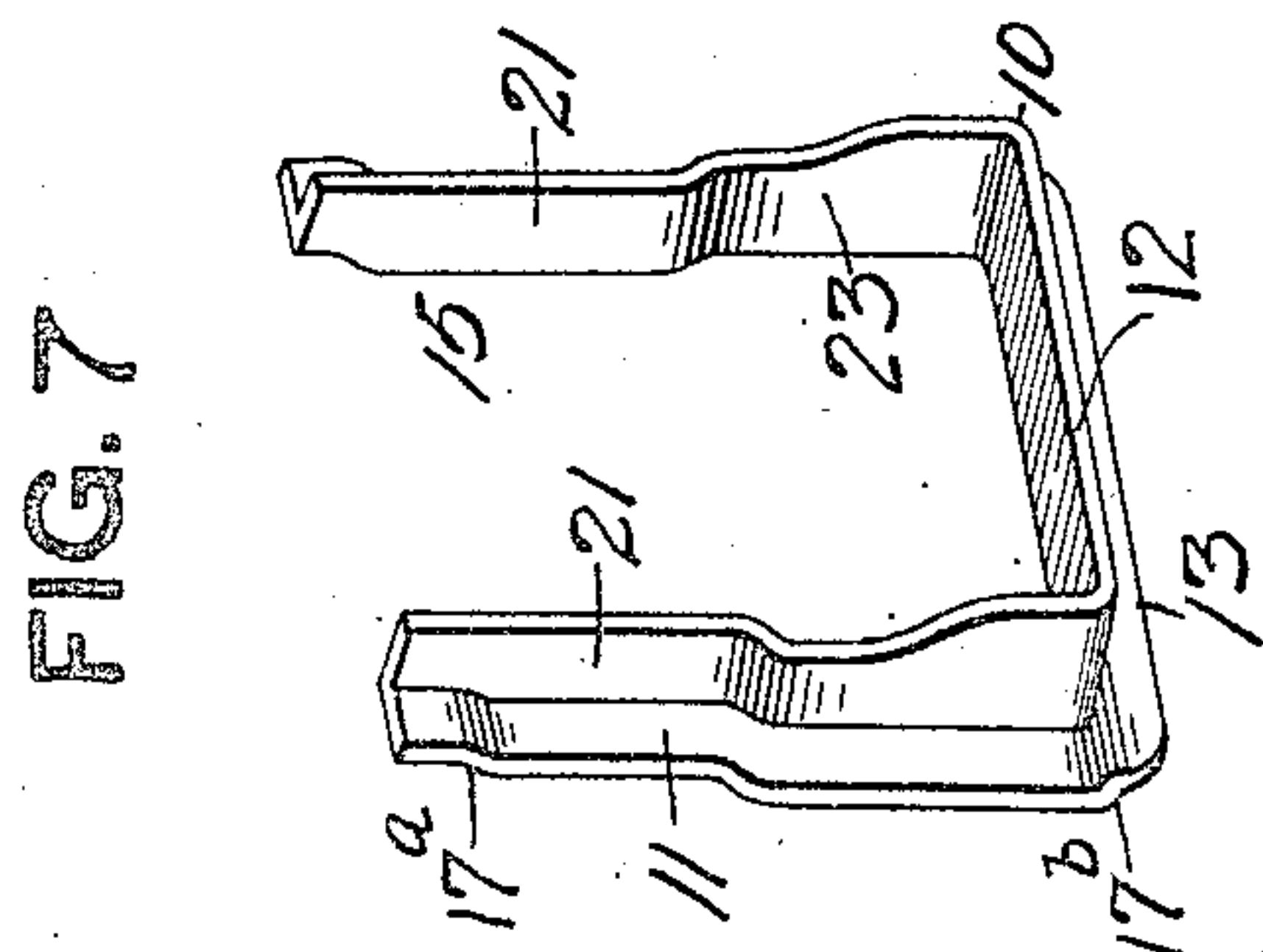
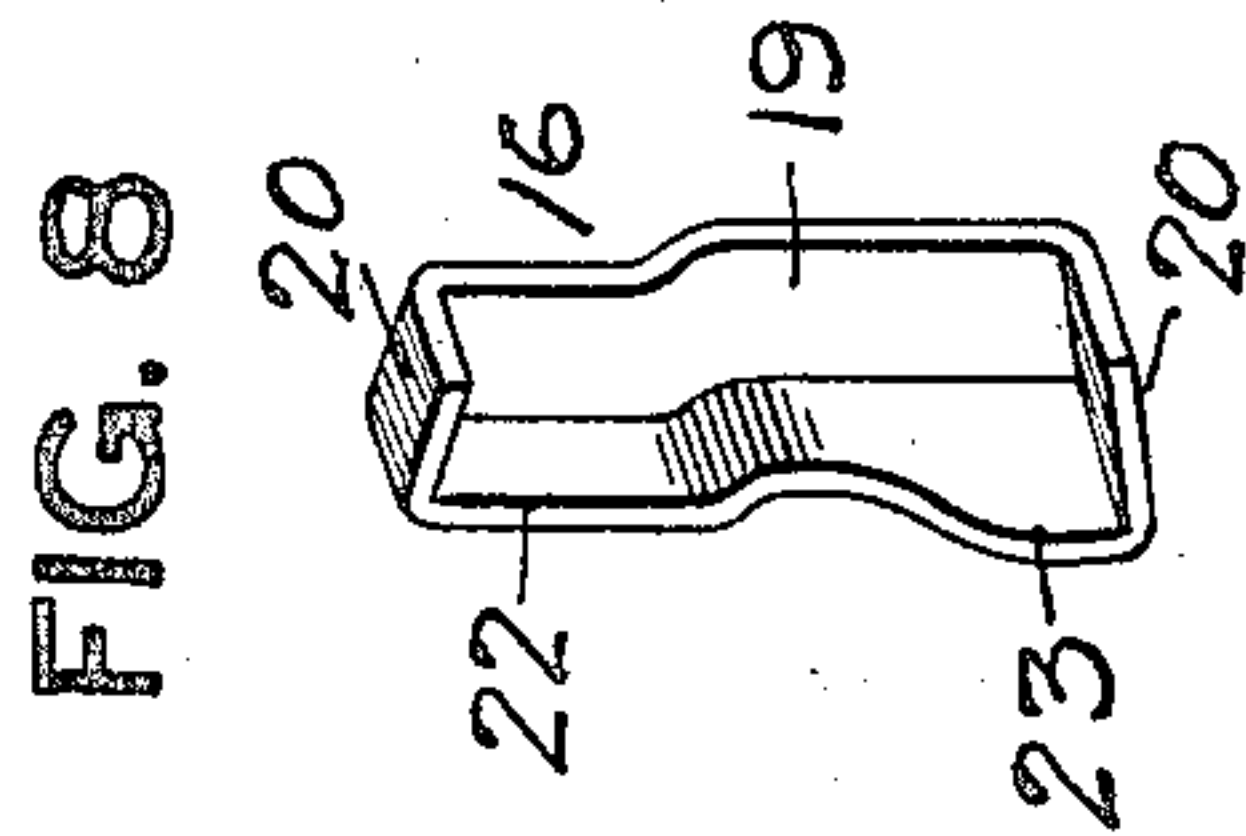
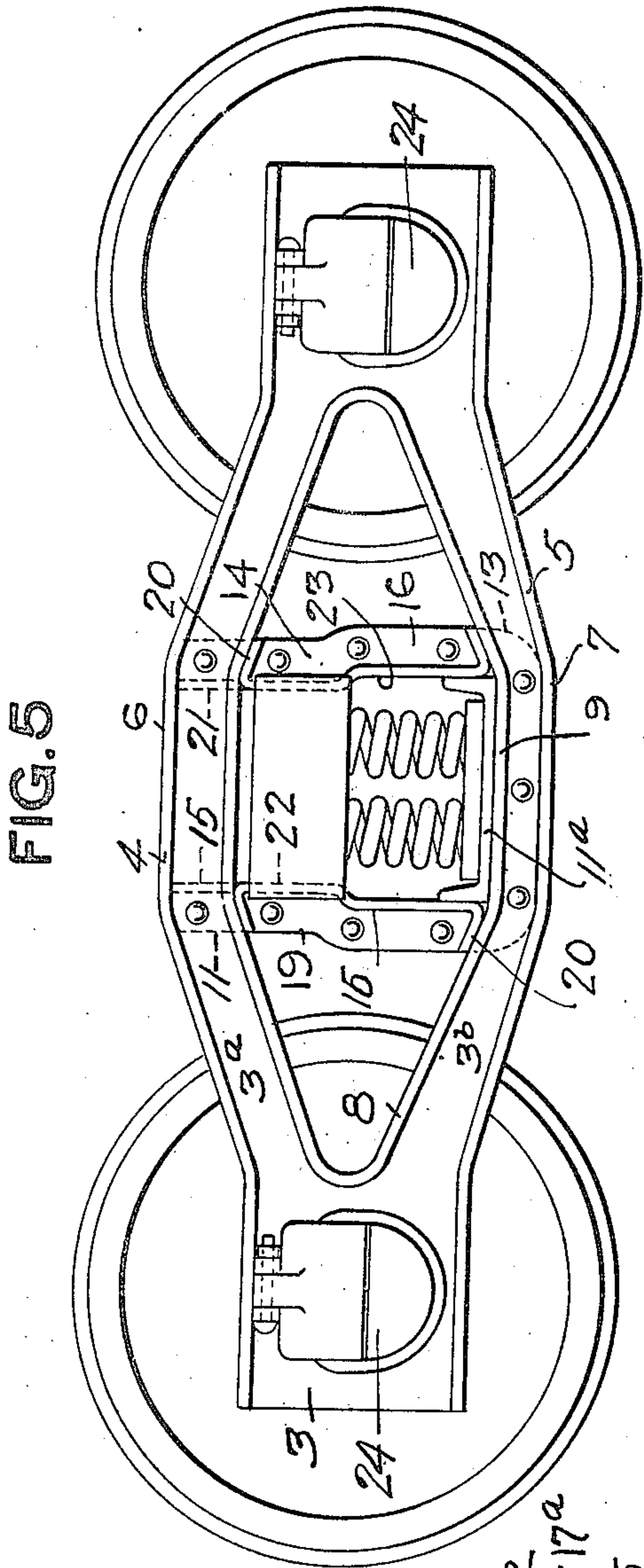
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3 SHEETS—SHEET 3.



WITNESSES.
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INVENTOR.
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UNITED STATES PATENT OFFICE.

EDSON C. COVERT, OF NEW KENSINGTON, PENNSYLVANIA.

TRUCK SIDE FRAME.

994,093.

Specification of Letters Patent.

Patented May 30, 1911.

Application filed July 28, 1910, Serial No. 574,341. Renewed April 28, 1911. Serial No. 624,033.

To all whom it may concern:

Be it known that I, EDSON C. COVERT, of New Kensington, county of Westmoreland, and State of Pennsylvania, have invented a new and useful Improvement in Truck Side Frames, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form part of this specification.

This invention relates to side frames for car trucks, and it aims to provide a cheap and simple improved construction therefor.

My invention contemplates, among other objects, the provision of a truck side frame having the maximum strength for the minimum amount of metal; a wrought metal, as contradistinguished from a cast metal frame, of the general diamond shape, having integrally formed top and bottom chords; an integrally formed frame which may be readily formed wholly or partially from wrought metal conventional shapes, such as the commercial rolled steel shapes; and novel forms of bolster guide bars or columns.

As a wrought metal integral side frame, my invention will be found to present a construction particularly advantageous over the cast frame type mentioned above. Cast frames have been found highly objectionable by reason of the fact that the variations in shrinkage of the metal alter or vary the distance between the centers of the journal boxes which are usually cast integrally with the frame, or if not cast therewith, are carried by a frame mounting to alter which, to meet these variations, would weaken the frame and reduce its efficiency. Furthermore, as is well known, great strength in cast structures is combined only with enormous weight, and coupled with these objectionable features are the liability of the cast metal to warp, and the necessity for discarding the whole frame should only a part thereof become injured.

My invention overcomes these difficulties by the provision, as stated above, of a simple, light and strong construction, embodiments of which are illustrated in the accompanying drawings in connection with which I will now describe my invention so that others skilled in the art may understand and

construct the same, it being understood, however, that certain features of my invention as herein set forth are applicable to truck side frames other than those which are integrally formed and that therefore no limitations in this respect are to be placed hereupon.

Figure 1 is a perspective view of a truck showing side frames embodying my invention; Fig. 2 is a side elevation of the same; Fig. 3 is a top plan view of the frame partly in section; Fig. 4 is a transverse section on the line 4—4 of Fig. 2; Fig. 5 is a part elevation showing modified manner of securing the bolster guide bars or columns to the frame proper; Fig. 6 is a transverse sectional view of the frame proper, being taken on a line substantially central of the frame; Fig. 7 is a detail perspective view of one of the members of the bolster guide columns; Fig. 8 is a similar view of the other member of the guide column; and Fig. 9 is a transverse sectional view through the frame, showing modified manner of forming the bolster guide columns and the spring plank seat.

In describing my invention, the reference 2 indicates the frame proper which preferably comprises a conventional rolled steel I-beam, the web 3 of which is intermediately split or slotted and the flanged edges 4 and 5, and adjoining portions 3^a and 3^b of the web spread in the plane of the web to form the upper and lower chords 6 and 7 respectively of the frame. To strengthen the frame generally and the chords 6 and 7 particularly, I preferably provide the web 3 with the outwardly projecting marginal flange 8. In carrying out the above forming operations, the beam is preferably first heated.

The flange 8, as shown, is somewhat wider or more extended at the central portion of the lower chord 7, as indicated by the numeral 9, so as to form, in complement with the member 10 secured in opposite disposition thereto, a broad seat for the spring plank 11^a of the truck. The member 10 preferably comprises a section of commercial angle bar, which, as shown, is disposed so as to bring a flange or leg portion 12 in alining co-

operative association with the flange portion 9, for the formation of the spring plank seat, as above stated, with the other flange 13 depending and in facial abutment with 5 and secured, preferably by welding, to the web 3^b of the lower chord.

While union between the web 3^b and member 10 is preferably through welding, and in this respect operates toward integral formation of the frame, an advantageous feature spoken of above, I do not desire to limit myself in this respect, as it will be apparent that rivets, as described below, or other suitable fastening means may be employed for this purpose.

The numeral 14 indicates the bolster guide bars or columns which are secured to the chords 6 and 7, and comprise preferably the angle plates or sections 15 and 16. The section 15 may be a continuation of the horizontal angle section 10, being off-set as at 17^a and 17^b so as to cause its flange portion or leg 11 to lie substantially within the plane of the web 3 in preferably welded union with the similarly disposed flange 19 of the member 16 which lies between the flange portions 8 of the chords 6 and 7; the terminal portions of the member 15 being secured, preferably by welding, to the inner face of the webs 3^a and 3^b of the chords, while the member 16 carries the terminal flanges 20 which are secured preferably in a like manner to the flange portion 8. The other flanges 21 and 22 of the angle pieces 15 and 16 oppositely disposed, cooperate to form the guide faces for reception of the similarly faced end of the bolster.

The columns 14 may flare or diverge at the base, as at 23, to permit of the endwise removal of the bolster, in the usual manner, and as the vertical travel of the bolster under service is, by reason of the usual under-mounted springs, spring seat, and plank, limited in a sense to the upper part of the columns, I preferably make the flanges 21 and 22, at the base of the column, a width uniform with that of the wide spring seat; the flanges narrowing to standard guide width at the top of the columns, as is clearly shown. This construction not only conduces to symmetry but provides ample reinforcement for the outer edges of the flanges 9 and 12 which form the spring plank seat.

The columns 14 in addition to their service as guides for the bolster, may also form struts for cooperative formation, with the upper or compression chord 6 and the lower or tension chord 7, of a truss construction. The strut or struts so formed are, by reason of their flanged construction, peculiarly adapted to maintain proper lateral stiffness under operative stresses. Furthermore, in the particular arrangement shown there is

absent all leverage or buckling strains between the chords and the struts, by reason of the fact that the united flanges 11 and 19 lie in a plane substantially in registration with that of the vertical member or web of the frame and that consequently vertical operative stresses passing between the chords and struts are delivered in substantially coincidental lines.

In Figs. 5 and 6 I show the angle sections 15 and 16 as being riveted together and secured in a like manner to the frame chords 6 and 7, as distinguished from the construction shown in Figs. 1, 2, 3 and 4, which views are to be understood as showing the several parts of the frame secured to one another by welding.

In Fig. 9 I show a modified manner of forming the spring plank seat. In this view the web of the frame 2 is shown as being formed without the flanges 8 and 9 at the center of the frame and as having an angle member 15' which is substantially a duplicate of the member 15 and which is secured to the outer face of the frame or to the web of the chords in opposite disposition and in cooperative association with the said member 15.

It will be apparent that many changes may be made in the construction shown, which would not be a departure from my invention, and I do not, therefore, desire to limit myself thereto.

The frame construction shown may be readily adapted to any suitable journal box construction. In this respect the end construction of the frame may be in the general nature of the regular pedestal formation, a construction well known in the art, or the frame may be adapted to a particular form of box construction, such as indicated by the numeral 24 and which is claimed in a co-pending application of mine, Serial No. 574,343, since

What I claim is:

1. A truck side frame, comprising a commercial rolled section having web and flange portions, the web of the section being intermediately longitudinally split and flanged and spread to form top and bottom chords.

2. A truck side frame comprising a commercial rolled section, having web and flange portions, and having its web portion intermediately longitudinally split and spread to form top and bottom chords, the web being struck outwardly to provide an intermediate reinforcing flange.

3. A truck side frame comprising a commercial rolled section having web and flange portions, and having its web portion intermediately longitudinally split and spread to form top and bottom chords, and having an

integral flange portion adapted to form a spring plank seat.

4. A truck side frame comprising a commercial rolled section, having web and flange portions, and having its web portion intermediately longitudinally split and spread to form top and bottom chords, the web portion also being flanged to form a spring plank seat.

5. A truck side frame comprising a body portion having top and bottom truss chords and bolster guide columns integrally secured thereto by welding.

6. A truck side frame comprising a wrought metal body portion having integrally formed top and bottom chords, and bolster guide columns extending from one chord to the other and integrally secured thereto by welding.

7. A truck side frame comprising a wrought metal body having longitudinally flanged top and bottom chords, and bolster guide columns, extending from chord to chord and between the flanges of the body and integrally secured thereto by welding.

8. A truck side frame comprising a wrought metal body portion substantially diamond shape and having in cross section vertical web and horizontal flange portions, and bolster guide columns mounted substantially centrally of the frame and extending from one chord to the other and integrally secured thereto by welding.

9. A truck side frame having top and bottom chords, and bolster guide columns weld-secured thereto and extending from one chord to the other, and being substantially T-shaped in cross section.

10. A truck side frame having top and bottom chords, bolster guide columns weld-secured thereto and extending from one chord to the other and comprising a plurality of angle sections so arranged as to cause a plurality of their flanges to cooperate to form a guide face for the bolster.

11. A truck side frame comprising a commercial rolled section, having web and flange portions, and having its web portion intermediately longitudinally split and flanged and spread to form top and bottom chords, and angle sections extending from chord to chord and forming bolster guide columns.

12. A truck side frame comprising a commercial rolled section, having web and flange portions, and having its web portion intermediately longitudinally split and spread to form top and bottom chords, and angle sections extending from chord to chord and forming bolster guide columns, the angle sections being weld-secured to the chords.

13. A truck side frame, comprising a commercial rolled section, having web and flange portions, and having its web portion inter-

mediately longitudinally split and spread to form top and bottom chords, and angle sections extending from chord to chord and in facial abutment with and weld-secured to the web portion and forming bolster guide columns.

14. A truck side frame, comprising a commercial rolled section, having web and flange portions, and having its web portion intermediately longitudinally split and spread to form top and bottom chords, and angle sections extending from chord to chord and in facial abutment with one another and the web and weld-secured to the web portion.

15. A truck side frame, comprising a commercial rolled section, having web and flange portions, and having its web portion intermediately longitudinally split and spread to form top and bottom chords, the web portion being provided with an integral intermediate flange portion, and a separately formed angle section secured to the flange and having a leg horizontally disposed to cooperate with the horizontal flange of the web for the formation of a spring plank seat.

16. A truck side frame, comprising a commercial rolled section, having web and flange portions, and having its web portion intermediately longitudinally split and spread to form top and bottom chords, the web portion also being provided with an integral horizontal flange portion, and angle sections extending from chord to chord and having a horizontal leg portion disposed to cooperate with the horizontal flange of the web to form a spring plank seat.

17. A truck side frame, having in cross section vertical web and horizontal flange portions, and having a bolster opening formed therein, and guide columns weld secured thereto, and having in cross section a leg portion lying in registration with the plane of the web.

18. A truck side frame, comprising a commercial rolled section having web and flange portions, and having its web portion intermediately longitudinally split and spread to form top and bottom chords, and angle sections extending from chord to chord and having leg portions so disposed as to lie in registration with the plane of the web.

19. A truck side frame, having in cross section vertical web and horizontal flange portions, and having a bolster opening therein and guide columns secured thereto, and comprising angle sections disposed on opposite sides and in facial abutment with one another and the web portions, and having flange portions lying in registration with the plane of the web.

20. A truck side frame, having in cross section vertical web and horizontal flange

portions, and having a bolster opening
therein, and guide columns secured thereto
and comprising angle sections so disposed
as to have leg portions in facial abutment
5 with one another and the web portion, the
abutting leg portions lying within the plane
of the web.

In testimony whereof, I have hereunto set
my hand.

EDSON C. COVERT.

Witnesses:

M. A. BARTH,
M. ARTHUR KELLER.