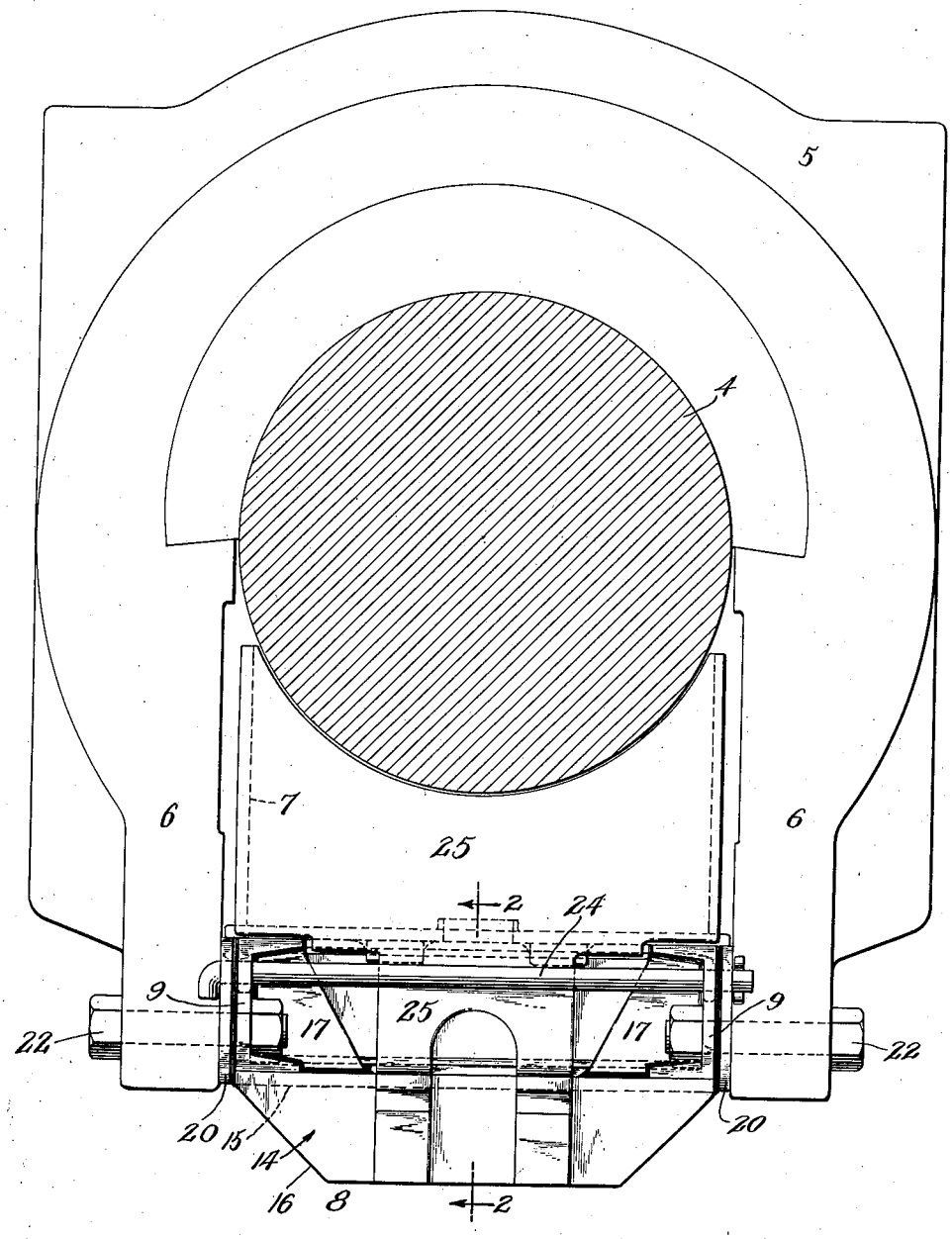
Jan. 23, 1940. E. WASHBURN 2,187,716

SPREADER

Filed Dec. 5, 1938 2 Sheets-Sheet 1

Fig. 1.



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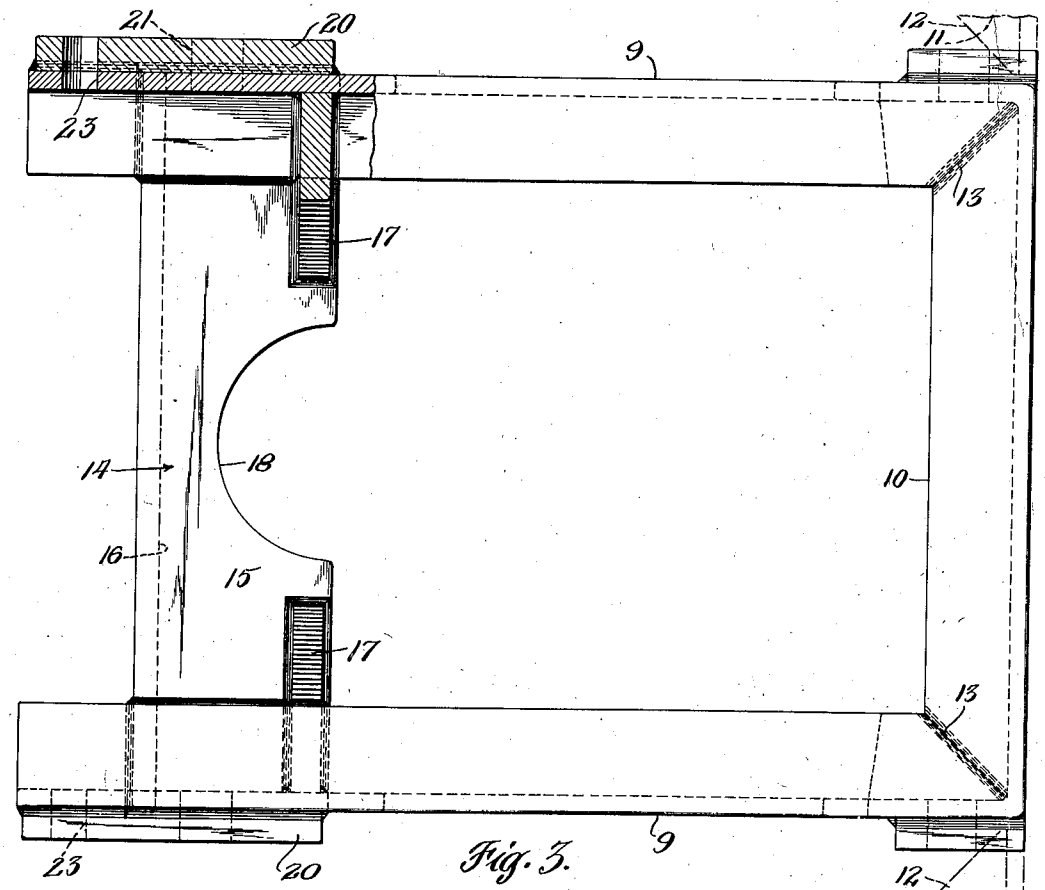


Fig. 3.

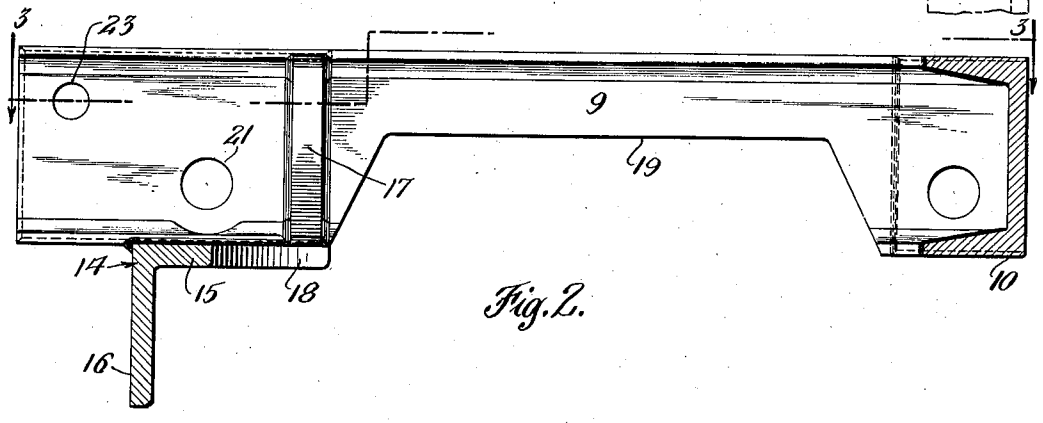


Fig. 2.

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UNITED STATES PATENT OFFICE

2,187,716

SPREADER

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Application December 5, 1938, Serial No. 244,030

8 Claims. (Cl. 308—43)

This invention relates to spreaders such, for example, as are used to prevent the "pinching in" of the sides of a locomotive driving box.

The principal objects of the invention are the provision of a spreader having the improved characteristics and yielding the advantages enumerated below:

(1) Very much lighter weight without any sacrifice of strength and with much greater uniformity in the distribution of the weight.

(2) Very much easier to handle.

(3) Substantial uniformity or homogeneity of material.

(4) Marked simplification of manufacturing procedure and at less cost.

(5) Fabrication from regular commercial rolled steel stock.

(6) Less liability of breakage in service.

(7) Easier machining.

(8) Elimination of the necessity for patterns and the storage thereof.

How the foregoing objects and advantages are attained, together with such other objects as may appear hereinafter or are incident to my invention, is described below in connection with the accompanying drawings, wherein—

Figure 1 is an end elevation of a locomotive driving box to which the improvement of the present invention has been applied, the axle being shown in cross-section;

Figure 2 is a somewhat enlarged section taken on the line 2—2 of Figure 1; and

Figure 3 is a section on the line 3—3 of Figure 2.

In Figure 1 a locomotive driving axle is shown at 4, the journal of which axle is housed in the driving box 5. The legs or sides 6 of the box extend downwardly below the axle and embrace the lubricator 7, "pinching in" of the sides 6 under the driving forces, being prevented by means of my improved spreader, indicated as a whole by the reference character 8. The box and lubricator construction form no part of the present invention and will not be further described because their structure and purpose are well understood in this art.

Instead of being made as a cast steel article, my improved spreader is fabricated from ordinary readily available commercial rolled steel stock of standard configuration. As shown, the side members 9 and the right-hand or inner end compression member 10 are made from ordinary rolled steel channel stock, preferably from a single piece of such stock. For example, a length of channel is taken equivalent to the total of the two sides 9 plus the end member 10, as indicated fragmentarily by the dot-and-dash lines 11 at the upper and lower corners of the right-hand end of Figure 3. Suitable wedge shaped portions are then cut out of the upper and lower flanges of the channel, as indicated at 12, so that the sides 9 can be bent at right angles to the end 10, after which the corners are carefully welded together as at 13.

The left-hand or outer end compression member 14 is cut from regular standard rolled steel angle stock, the upper flange 15 of which is then welded against the under face of the bottom flange of the two side members, as clearly shown in the drawings. The depending flange 16 is arranged toward the outside and acts as a strengthening member. In order to still further brace and strengthen the structure, vertical webs or gussets 17 are welded between the upper face of the upper flange of the angle member and the inside of each of the adjacent side channel members. These webs 17 are also cut from standard rolled steel stock and are flared downwardly from a width which is approximately equal to the width of the upper flange of the side channels to a width substantially twice as great where the juncture with the top flange 15 of the angle 10 takes place.

Between the two webs 17 the upper flange 15 of the angle is cut out as at 18 to provide clearance for other parts of the driving box structure, which, however, are not illustrated herein because they form no part of the present invention. In addition, the under faces of the side channel members are relieved or cut out as at 19 also to provide clearance for other associated driving box structure, notably the pedestal binder, which is not illustrated because it likewise forms no part of the present invention.

At its ends each side member is provided with a machining pad 20 which is preferably cut from a milder steel than the steel of the rest of the structure and then welded in place against the outer face of the channel. Slight adjustments for variations in the distance between the sides 6 of different boxes are thus readily taken care of by providing pads of normal maximum thickness and then machining them down to suit individual installations where the distance is somewhat less than maximum. It will be readily understood, of course, that my invention makes it feasible to provide these pads of milder steel so as to greatly reduce the difficulty and expense of machining which is a factor of very great im-

portance in the practical application of these spreaders to driving boxes.

At each corner the side members are suitably drilled to provide holes 21 which align with corresponding holes in the sides of the box through which bolts 22 are passed in order to secure the spreader in position. At the outer end the sides are also provided with holes 23 for the insertion of a pin 24 which holds in place the lubricator end plate 25. Of course, the pin 24 and the end plate 25 form no part of the present invention, although they are shown in Figure 1 simply to illustrate the association of these parts with my improved spreader.

It will be apparent from the foregoing that my fabricated spreader is a great improvement over the previous cast steel spreader familiar to the art. For example, a marked saving in weight is made possible without any sacrifice in strength, an average size unit of my new construction weighing in the neighborhood of 32 pounds as against 50.5 pounds for the cast steel unit. This saving in weight is a very important factor, especially in modern high speed transportation where the unsprung weight of which this is a part must be kept to as low a figure as is feasible. Furthermore, this reduction in weight makes it very much easier for workmen to handle the spreader. In addition, with my improvement it is possible to much more uniformly distribute or balance the weight as between the two ends of the spreader. Heretofore, the outer end of the spreader has been markedly heavier than the inner end, but with my improved construction this discrepancy as between the two ends is considerably reduced.

A spreader of fabricated rolled steel stock is also more homogeneous in structure and there is less liability of breakage during service as has sometimes occurred in the past due to defects in the casting. In the manufacturing procedure there are no "wasters" as has heretofore been the case with cast steel spreaders, and in other ways manufacturing costs are reduced. For example, patterns and the storage thereof are unnecessary—an item of considerable importance because there are quite a large number of shapes and sizes of spreaders.

The machining pads of milder steel such as are made possible by my invention are also a factor of considerable practical value, as previously pointed out.

I claim:

1. A rolled steel spreader having channel stock side and inner end members, an angle stock outer end member welded against the bottom flanges of the side members, and machining pads welded to the outer faces of the side members.

2. The structure of claim 1 wherein a bracing web is welded between the upper flange of the angle member and the inside of each of the adjacent side channel members.

3. The structure of claim 1 wherein the side and inner end members are formed from a single channel.

4. The structure of claim 1 wherein the under faces of the side members are relieved to accommodate a pedestal binder.

5. The structure of claim 1 wherein the machining pads are formed of milder steel than the rolled stock.

6. The structure of claim 1 wherein a bracing web is welded between the upper flange of the angle member and the inside of each of the adjacent side channel members and wherein the machining pads are formed of milder steel than the rolled stock.

7. The structure of claim 1 wherein a bracing web is welded between the upper flange of the angle member and the inside of each of the adjacent side channel members and wherein the under faces of the side members are relieved to accommodate a pedestal binder.

8. A spreader having flanged, stock, rolled-steel side and end members with machining pads welded to the outer faces of the side members.

EDGAR WASHBURN.