

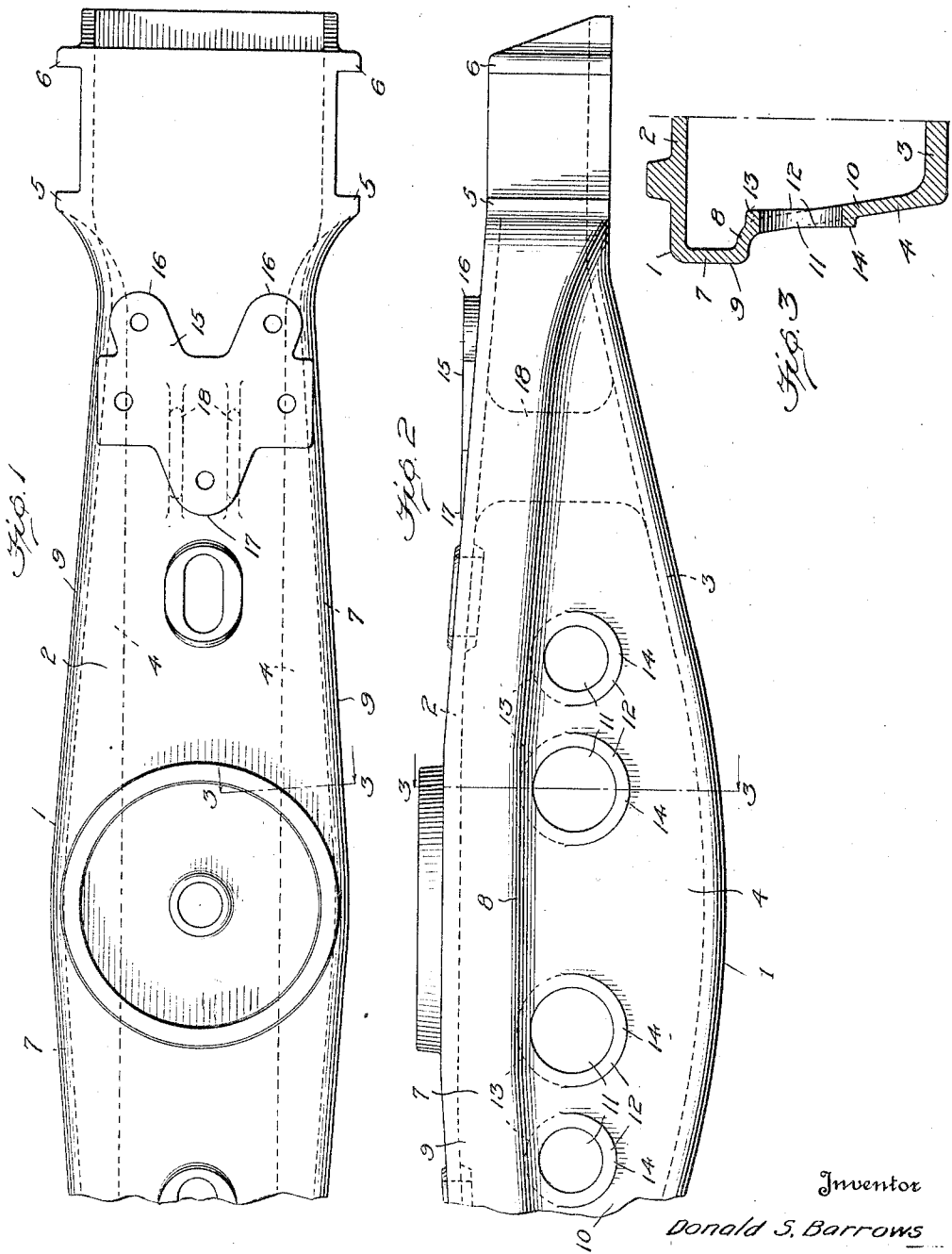
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TRUCK BOLSTER

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## UNITED STATES PATENT OFFICE

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## TRUCK BOLSTER

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This invention relates to beams such as railway truck bolsters or other structural devices with cored apertures in sloping or angularly disposed opposite walls thereof, and the method of casting such structures.

The principal object of my invention, generally considered, is to so form cast members with sloping walls with beaded apertures therein, that the beading around said apertures may be cast without difficulty, as well as to provide bolsters with side bearing bosses and reinforcements therein.

Another object of my invention is to facilitate the method of forming bosses around cored openings in sloping or angularly disposed opposite walls of cast members so that the use of a loose piece or auxiliary core in the core box is avoided.

A further object of my invention is to facilitate the manufacture of hollow cast bolsters or other members with apertured sloping walls reinforced by beading therearound, by forming the upper portions of said beading on the uppermost side of the sloping wall, and the lowermost portions of said beading on the lowermost side of said sloping wall, so that the top half may be formed in the core box and the bottom half in the drag pattern, thereby avoiding the necessity of a loose piece in the core box.

A still further object of my invention is to provide a hollow cast truck bolster, a beam with sloping or angularly disposed opposite walls or other member with a normally sloping wall, and one or more cored apertures therein with bosses or beading around said apertures, the upper portion of which is formed on one side of said wall or that side uppermost with respect to the other, and the lower portion being formed on the other side, said portions tapering to gradually merge into the corresponding surfaces of the wall adjacent the centers of said apertures.

Other objects and advantages of the invention relating to the particular arrangement and construction of the various parts will become apparent as the description proceeds.

Referring to the drawings illustrating my

invention, the scope whereof is defined by the appended claims.

Figure 1 is a fragmentary plan of a cast truck bolster embodying my invention.

Figure 2 is a fragmentary side elevation of the bolster illustrated in Figure 1.

Figure 3 is a fragmentary transverse sectional view on the line 3—3 of Figure 2, looking in the direction of the arrows.

Referring to the drawings in detail, like parts being designated by like reference characters, there is shown a bolster 1 with a top wall 2, a bottom wall 3, and side walls 4. Said top and bottom walls preferably slope and converge toward one another at the ends of said bolster where guide lugs 5 and 6 are provided for cooperation with the bolster guide columns of associated frames. Although I have illustrated a bolster of the same general type as that shown in the Richards Patent No. 1,055,656, it is to be understood that I do not wish to be limited to this showing as my invention may be embodied in other hollow cast metal beams or cast metal members with normally sloping walls, such as the side walls 4 of the present bolster.

In the present embodiment, the side walls 4 immediately beneath the top wall 2 are preferably vertical for a short distance, as indicated at 7, when they are sharply turned inward, as indicated at 8, to form channel sections 9. From the lower edges of the channel sections to the bottom wall 3, the side walls 4 preferably slope, as indicated at 10, inwardly, from the channel sections 9 to the edges of the bottom wall 3. For decreasing the weight of the bolster 1, the sloping portions 10 of the side walls are preferably apertured as indicated at 11, said apertures being most desirably cored and the edges of the sides around said apertures being reinforced by bosses or beading 12. Heretofore said beading has been formed on the inner surfaces of said sloping walls, as shown in the Richards Patent No. 1,055,656 referred to. Such construction necessitated the use of a supplemental core or loose piece in the core box to make the bead completely annular or circular as there illustrated.

In accordance with my invention, I avoid

the necessity of such a loose piece in the core box by forming the top half 13 of the bead only in the core box, and the bottom half 14 in the drag pattern with the normal amount of draft being provided so that the mold and core can be formed without difficulty, as well as without the necessity of a loose piece or supplemental core. In order to make this possible, the top portions 13 of the beading or bosses are formed of maximum size adjacent the tops of the apertures 11 and are gradually tapered to merge into the corresponding surface of the side wall adjacent the centers of the apertures. In the same way, the lower portions 14 of the beading 12 are formed of minimum size adjacent the lower portions of the apertures 11 and are tapered upwardly to gradually merge into the corresponding sides of the walls 4 adjacent the horizontal center lines of the apertures 11 so that the portions 14 of the beading terminate approximately opposite where the portions 13 terminate, said portions 13 and 14 together thereby being an effective substitute for a continuous bead or boss around each aperture on one side of the wall as in the Richards patent referred to. It will also be obvious that this manner of reinforcing the edges of the walls around the apertures is applicable to any cast devices having sloping walls, or oppositely disposed walls angularly positioned with respect to one another, providing the angle therebetween is great enough to allow tapering beading, as illustrated, while at the same time permitting sufficient draft to the outer surfaces of said beading for allowing proper molding.

The bolster of the present embodiment is provided with side bearing bosses 15, which preferably taper from the outer ends 16 to the inner ends 17 to substantially merge into the upper surface of the top wall 2, the amount of taper preferably corresponding with the amount of slope of the top wall, but being opposite to said slope so as to neutralize it and give side bearing bosses with normally horizontal top surfaces. In order to provide for the adequate support and reinforcement of the top wall and side bearing bosses 15 vertical webs 18 are provided, one or more of which are preferably disposed under each boss 15 and extend along or on opposite sides of the center line of the bolster vertically between the top and bottom walls thereof substantially within the projected areas of said bosses, as illustrated.

From the foregoing disclosure it will be seen that I have devised a form of hollow cast bolster with lightening apertures in the side walls thereof, the edges of said side walls around said apertures being reinforced by bosses which are more readily formed by being disposed half on one side and half on the other side of the corresponding wall. It will be obvious that this feature of my invention

is applicable to any cast sloping wall with a cored opening therein. In the present embodiment, I have also shown a special form of side bearing boss with a reinforcement therefor extending between the top and bottom walls of the bolster.

Having now described my invention, I claim:

1. A bolster with a sloping side wall formed with a lightening aperture therein, and a boss around said aperture, the upper portion of said boss being formed on one side and the lower portion on the other side of said wall.

2. A bolster with opposite angularly disposed walls formed with lightening apertures therein, and bosses around said apertures, the upper portions of said bosses being formed on the adjacent sides of the walls, and the lower portions on the other sides of said walls.

3. A hollow cast metal bolster with a relatively wide top wall, a relatively narrow bottom wall and side walls extending downwardly from said top wall and converging to meet the side edges of the bottom wall, said converging portions being apertured for decreasing the weight of the bolster, the edges of the walls around said apertures being reinforced by beading, the upper portions of the beading being on the inside surfaces of the walls and tapering downward to merge into said walls, and the lower portions of said beading being on the outer surfaces of said walls and tapering upward to merge into said walls.

4. A hollow cast metal bolster comprising top, bottom and side walls, said top wall sloping downwardly toward its ends and being formed with bosses for the side bearings tapering from the top wall so that the top surfaces are substantially horizontal and auxiliary means for supporting said bosses comprising a pair of laterally spaced intermediate webs under each boss extending longitudinally of the bolster from the bosses to the bottom wall between said side walls and substantially within the vertically projected areas of said bosses.

5. A hollow cast metal bolster formed with top and bottom walls sloping toward the ends thereof, side walls connecting said top and bottom walls, bosses on said top wall for side bearings, said bosses tapering so that the upper surfaces thereof are normally horizontal and a pair of laterally spaced intermediate webs connecting the top and bottom walls beneath each boss, and included between the transverse planes defining the ends of said boss.

6. A beam with a sloping side wall, an aperture therein, and reinforcing beading around said aperture, said beading around the lower side of the aperture being formed on the lowermost surface of the wall, and the

beading around the upper side of the aperture being formed on the uppermost surface of said wall.

5 7. A hollow beam with opposite angularly disposed walls, apertures therein, and reinforcing beading around said apertures, said beading being formed on the outside surfaces of the walls around those portions of the apertured walls nearest together and on the  
10 inside surfaces of said walls around the apertured portions farthest apart.

8. A beam with sloping apertured side walls and beading reinforcing the edges around said apertures, the upper half of said  
15 beading being on the inside surfaces of said walls and tapering downwardly to merge into said surfaces, and the lower half of said beading being on the outer surfaces of said walls and tapering upwardly to merge into said  
20 surfaces.

9. A beam with a wall having a cored opening therethrough and a boss encircling said opening, one-half of said boss being disposed on one side of said wall and the other half  
25 on the other side thereof.

10. A beam with a sloping wall and a cored opening therethrough, a boss surrounding said opening, one-half of said boss being on the uppermost side of the opening and the  
30 uppermost surfaces of said wall, the other half being on the lowermost side and lowermost surface of said wall.

11. A beam with a wall having a cored opening therethrough, said wall sloping and  
35 being provided with a boss surrounding said opening for reinforcing purposes, a portion of said boss being disposed on the uppermost side of said opening on the uppermost surface of said wall and the remainder thereof being disposed on the lowermost side of  
40 said opening and the lowermost surface of said wall, the adjacent portions of said bosses tapering to gradually merge into the wall.

12. The method of manufacturing hollow  
45 cast metal bolsters with sloping side walls apertured for decreasing the weight, comprising forming reinforcing beading on the top half of the apertures on the upper surfaces of the walls, and on the bottom half on the  
50 lower surfaces, and tapering the beading portions to merge into the adjacent sides of the walls with the normal amount of draft.

13. The method of manufacturing hollow  
55 cast metal bolsters with downwardly and inwardly sloping side walls provided with beaded apertures therein for decreasing the weight, comprising forming the upper portions of the beading on the inner surfaces of said walls, and the lower portions on the  
60 outer surfaces thereof, and tapering said portions toward one another to gradually merge them into the sides of the walls with normal draft.

In testimony whereof I affix my signature.

DONALD S. BARROWS.