

No. 776,813.

PATENTED DEC. 6, 1904.

A. STUCKI.
CAST TRUCK BOLSTER.
APPLICATION FILED JUNE 16, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

FIG. 1

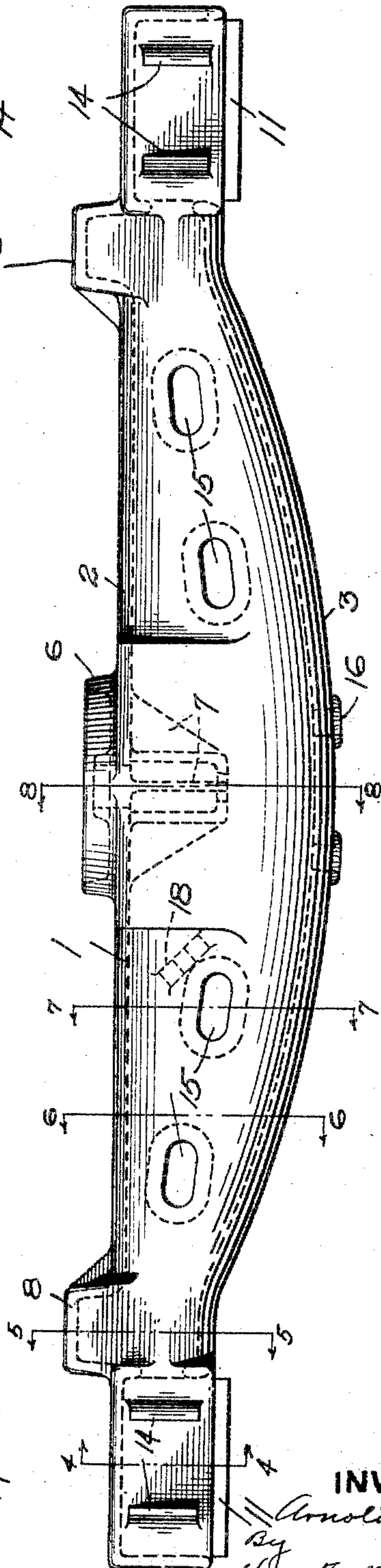
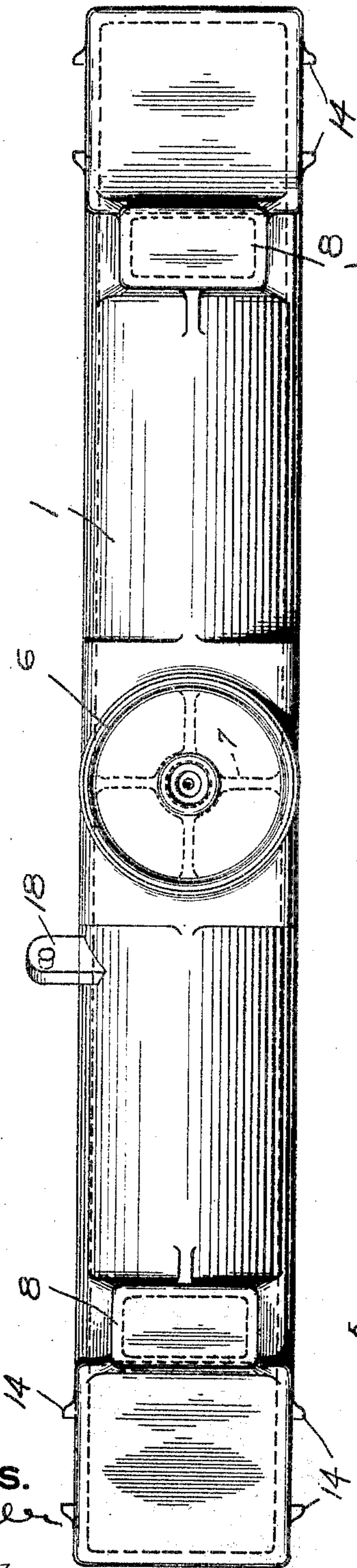


FIG. 2

WITNESSES.

J. R. Keller
G. Hermer

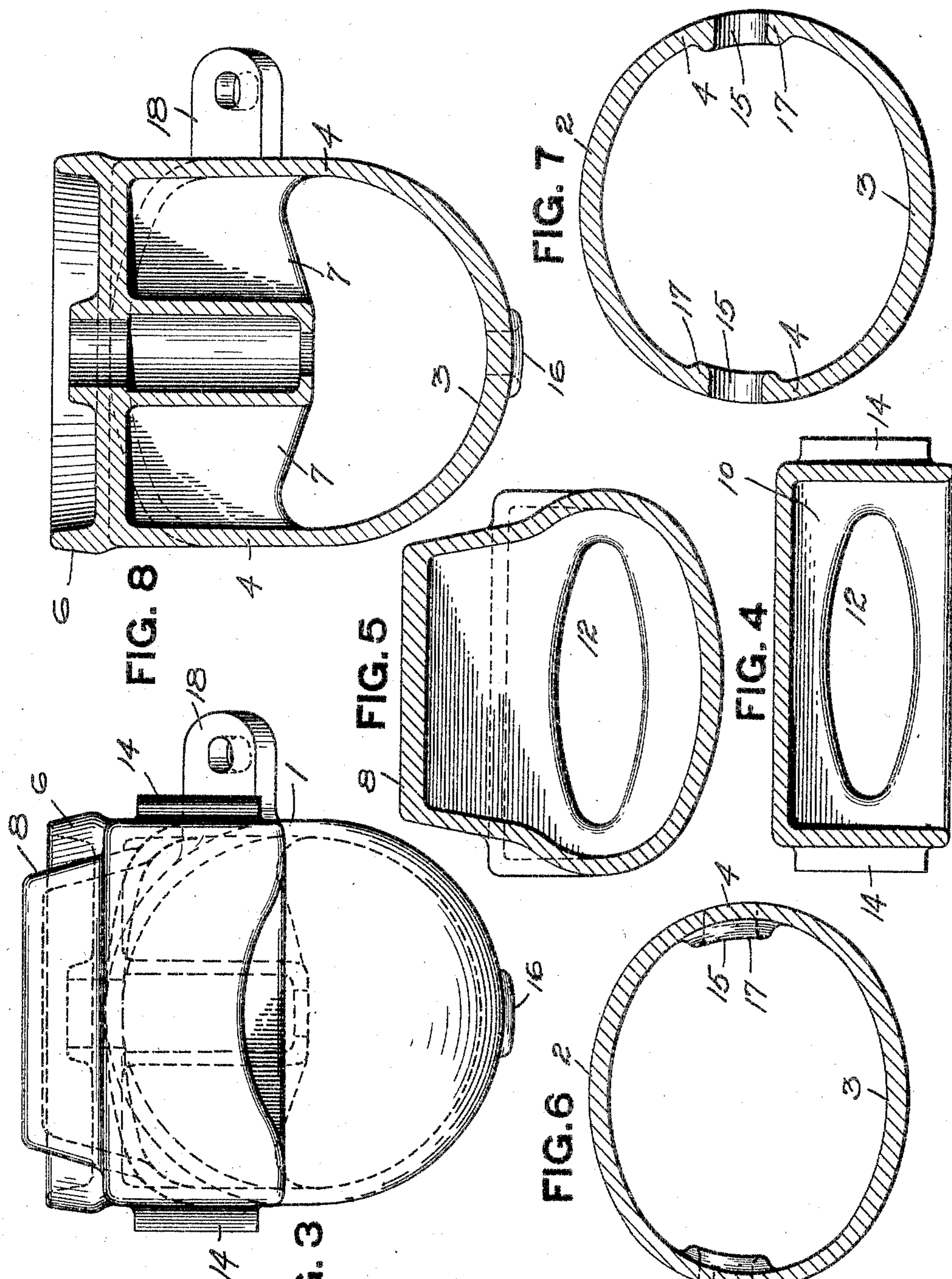
INVENTOR.

Arnold Stucki
By
Ray, Follen Winter,
His Attys

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2 SHEETS—SHEET 2.



WITNESSES.
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G. Bremer

FIG. 3

INVENTOR.
Arnold Stucki
By Kay, Foster & Winter,
Attorneys.

UNITED STATES PATENT OFFICE.

ARNOLD STUCKI, OF ALLEGHENY, PENNSYLVANIA, ASSIGNOR TO
STANDARD STEEL CAR COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

CAST TRUCK-BOLSTER.

SPECIFICATION forming part of Letters Patent No. 776,813, dated December 6, 1904.

Application filed June 16, 1904. Serial No. 212,890. (No model.)

To all whom it may concern:

Be it known that I, ARNOLD STUCKI, a resident of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Cast Truck-Bolsters; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to bolsters for railway-trucks and the like, and more especially to those made of cast-steel.

The object of my invention is to provide a bolster of this character wherein the metal is properly distributed to provide for the proper vertical and horizontal strength of the bolster and to make the same of uniform strength from end to end.

A further object of the invention is to give a bolster of this character such a contour that shrinkage-cracks and unsound castings will be avoided.

Railway-car bolsters must withstand not only vertical loads, but also horizontal stresses; but the horizontal strength of a bolster need not be as great as is required in a vertical direction. My body-bolster is of tubular form, so that the relative vertical and horizontal strengths can be conveniently obtained by making the top and bottom walls slightly thicker than the side walls. Inasmuch as the strength of the metal is not always the same in compression and tension, in such cases the amount of material should be distributed so as to get the same ultimate strength in the top and in the bottom portion of the bolster. In my design this also can be conveniently done by making the bottom wall somewhat heavier than the top wall.

In the construction of cast bolsters much trouble is experienced by reason of unsound castings and shrinkage-cracks. Any sharp corners or abrupt changes in the thickness of the walls of the bolsters tend to produce these defects, and for this reason cast bolsters have often failed. In my design I overcome these defects by making the cross-section of the bolster substantially circular, so that sharp corners are entirely absent and in having the

thin and thick portions of the walls of the bolster merge gradually into each other, so that all abrupt changes in thickness of material are avoided.

The bolster also comprises other features of novelty, such as providing openings for the supports of the cores while casting, as well as forming a spring-pocket at the end of the bolster, and other details of construction, which will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of my improved bolster. Fig. 2 is a side view of the same. Fig. 3 is an end view of the same; and Figs. 4, 5, 6, 7, and 8 are transverse sections on the lines 4 4, 5 5, 6 6, 7 7, and 8 8, respectively.

The body 1 of the bolster is tubular in form and preferably is circular or approximately circular, such as elliptical, as shown in the cross-sections. This avoids all sharp corners or angles, and thus to a large extent overcomes shrinkage-cracks and unsound castings. The top wall 2 and bottom wall 3 are somewhat thicker than the side walls 4, so as to give the proper relative vertical and horizontal strengths to the bolster, it being necessary that the vertical strength be greater than the horizontal strength. By varying the relative thickness of the top and bottom and side walls any relative vertical and horizontal strength can be given to the bolster. The bottom wall 3, furthermore, is slightly thicker than the top wall 2, this being necessary because the tensile strength of cast metal frequently is less than the compressive strength, and by throwing more metal into the tension member than in the compression member this variation in tensile and compressive strength is equalized and both chords of the bolster will have substantially uniform strength. The circular form does away with sharp angles and corners and the thick and thin portions of the walls merge gradually into each other, thus avoiding abrupt changes in thickness. As a result, shrinkage-cracks in casting are to a large extent overcome.

The bolster is preferably of substantially

uniform width, but of varying depth, the top wall being substantially straight, while the bottom wall is formed substantially on a parabolic curve, so as to give uniform strength from end to end. Formed integrally with the body is a center-bearing 6, and underneath the same is the internal strengthening-web 7, which is also an integral part of the casting. Side bearings 8 are also formed integral with the top wall of the bolster. Beyond the side bearings the ends of the bolster are of less vertical depth and are open underneath to form pockets 10 to serve as spring-seats for receiving wooden filler-blocks 11, which serve as spring-seats. By varying the thickness of these filler-blocks vertical adjustment of the bolster can be provided for. The pockets 10 are provided with top, side, and end walls, the inner end wall being perforated at 12 for lightness.

Column-guides 14 are formed integral with the side walls of the pockets 10. The side walls of the body of the bolster are provided with openings 15 for the passage of supports for holding the cores in place while casting, and similar openings 16 are also provided in the bottom wall. All of these openings are reinforced or thickened at their edges, as shown at 17. The core for the spring-pockets 10 can be made in one piece with the body-core. A lug 18 projects from one side of the bolster and serves as a fulcrum for the brake-lever.

The bolster described gives an excellent distribution of the metal to provide for the proper vertical and horizontal strengths and also to compensate for the lesser tensile strength of cast material. The circular contour or shape avoids all abrupt angles and also abrupt changes in thickness of the material, so that unsound castings and shrinkage-cracks are largely avoided. All the usual appurtenances of truck-bolsters are cast integral with the body, and ample provision has been made for supporting the cores.

What I claim is—

1. A tubular bolster having the top and bottom walls of greater thickness than the side walls.

2. A tubular bolster having top and bottom walls of greater thickness than the side walls and the bottom wall of greater thickness than the top wall.

3. A tubular cast bolster having the top and bottom walls of greater thickness than the side walls and gradually merging into said side walls whereby abrupt changes of thickness are avoided.

4. A tubular cast bolster having the top and bottom walls of greater thickness than the side

walls, and being substantially circular in cross-section whereby sharp bends or angles are avoided.

5. A hollow box-like bolster having a substantially straight upper contour and a parabolic lower contour tapering from the center toward both ends.

6. A tubular cast bolster having a substantially straight upper contour and a parabolic lower contour tapering from the center toward both ends.

7. A tubular bolster of substantially circular form in cross-section and having end portions open on their lower sides, and blocks seated in said end portions and serving as spring-seats.

8. A cast bolster having the body thereof of tubular form with top, bottom and side walls, and having end portions with top, side and two end walls and open on the bottom to form pockets for the springs.

9. A cast bolster having a body of tubular form with top, bottom and side walls, and having end portions with top, side and end walls but open on the bottom, and blocks fitting in said end pockets and serving as spring-seats.

10. A cast bolster of tubular form having top, bottom and side walls, a center-bearing, and an integral reinforcing-web in said tubular body underneath said center-bearing and not extending below said body.

11. A cast bolster having a body of tubular form with openings through the side walls thereof for the supports for the cores and having the edges of said openings thickened to reinforce the same.

12. A cast bolster having a body of tubular form and provided with openings in the bottom wall adjacent to the transverse center of the bolster and serving to receive supports for the cores.

13. A cast bolster having a body of tubular form and provided with openings in the bottom wall adjacent to the transverse center of the bolster for receiving supports for the cores and having the edges of said openings thickened to reinforce the same.

14. A cast bolster having a body of tubular form and provided with openings through the side and bottom walls for receiving supports for the cores, and having the edges of said openings thickened to reinforce the same.

In testimony whereof I, the said ARNOLD STUCKI, have hereunto set my hand.

ARNOLD STUCKI.

Witnesses:

GEORGE H. RANKIN,
F. W. WINTER.