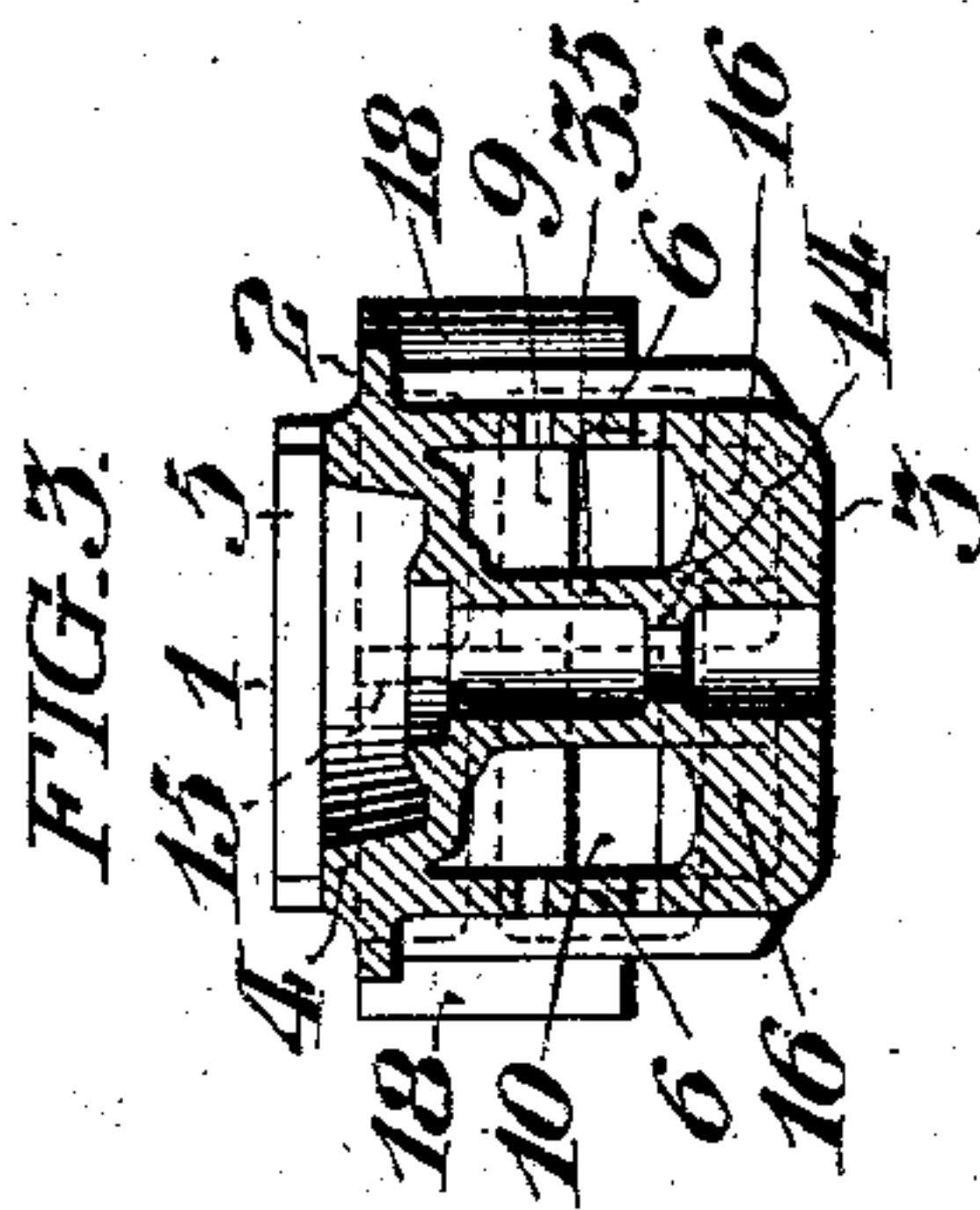
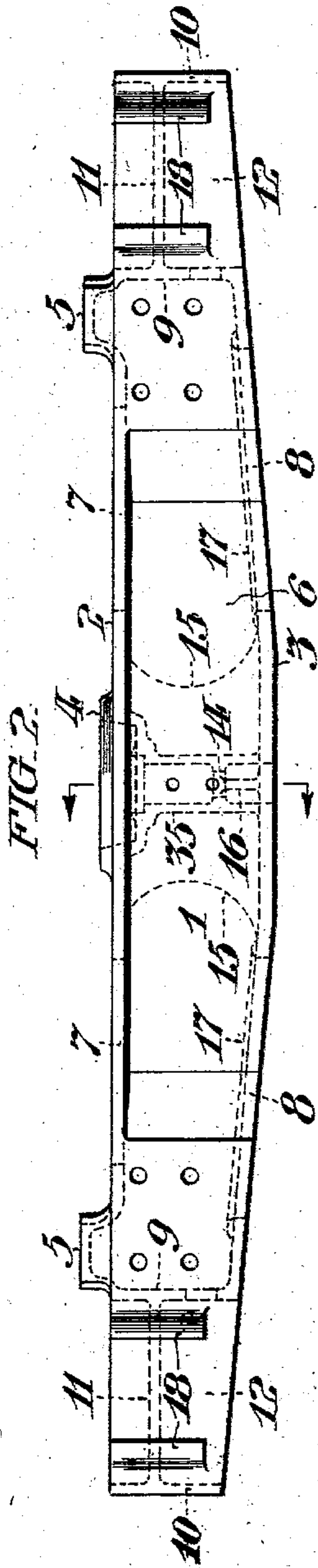
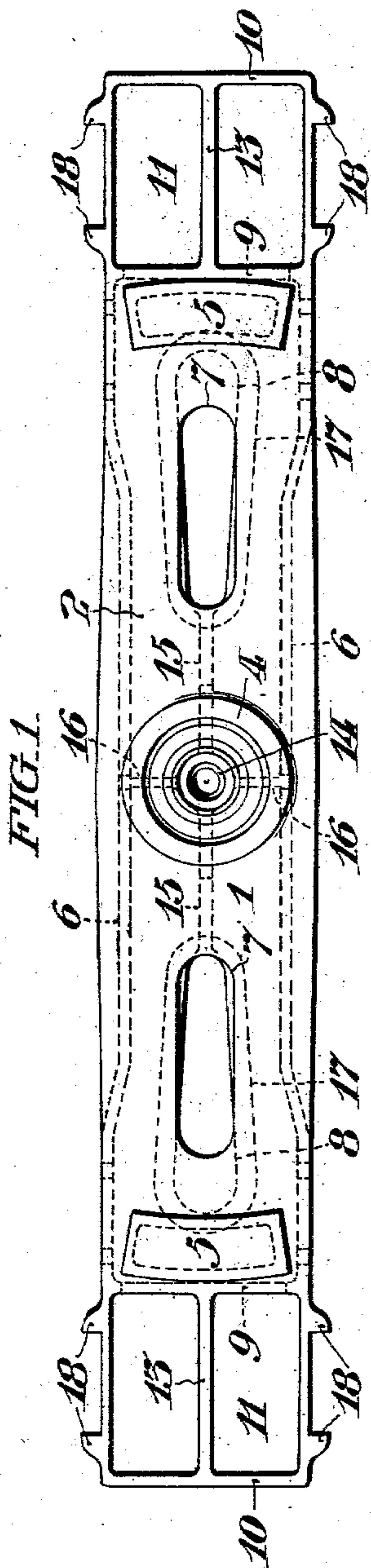


T. MITCHELL.
BOLSTER.

APPLICATION FILED JUNE 20, 1902

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

Arthur E. Paige
J. Norman Dixon

Thomas Mitchell
INVENTOR:

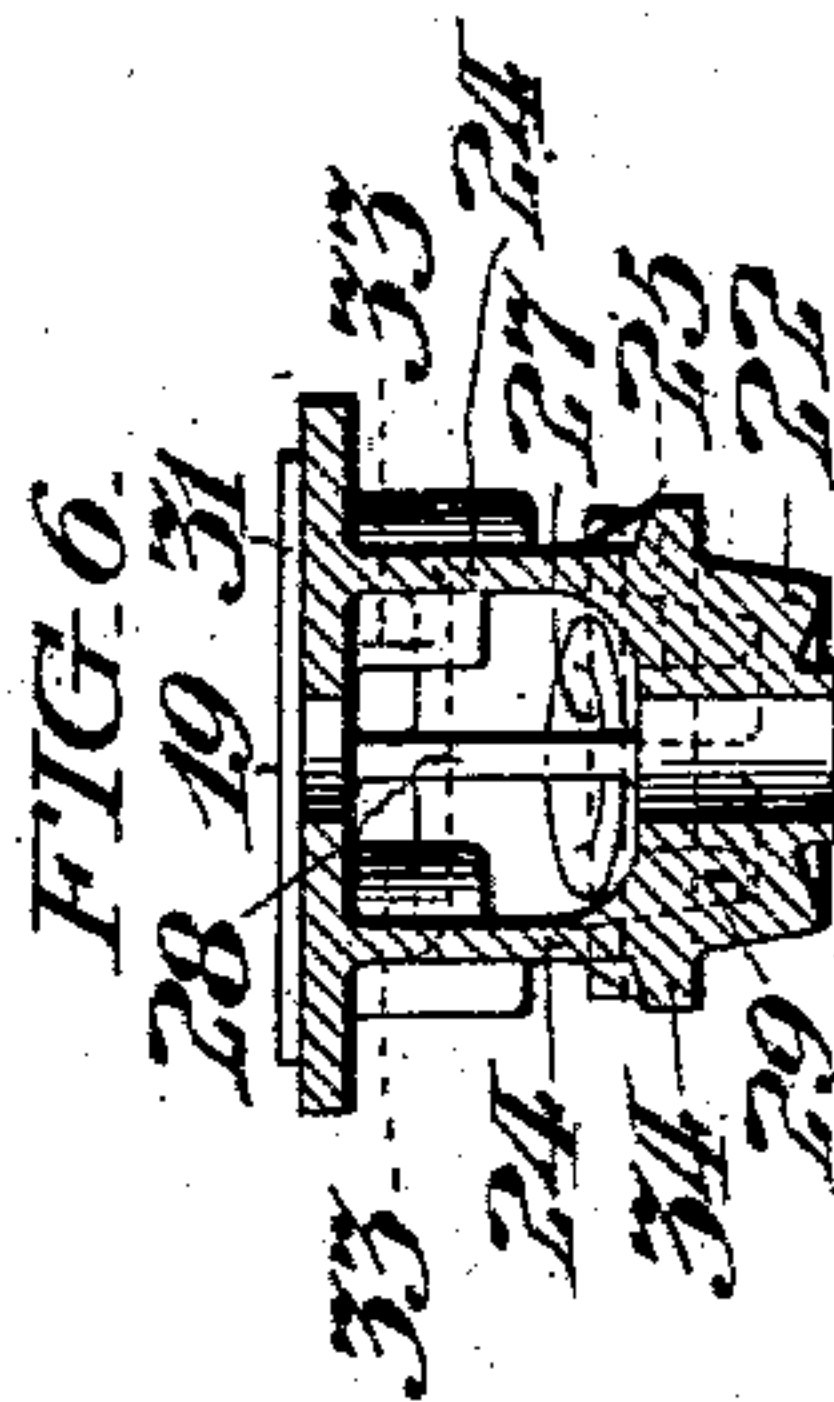
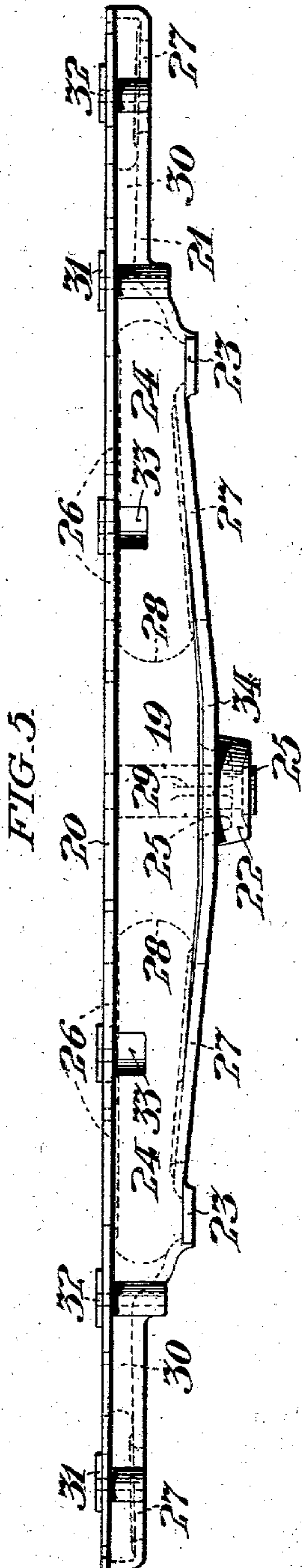
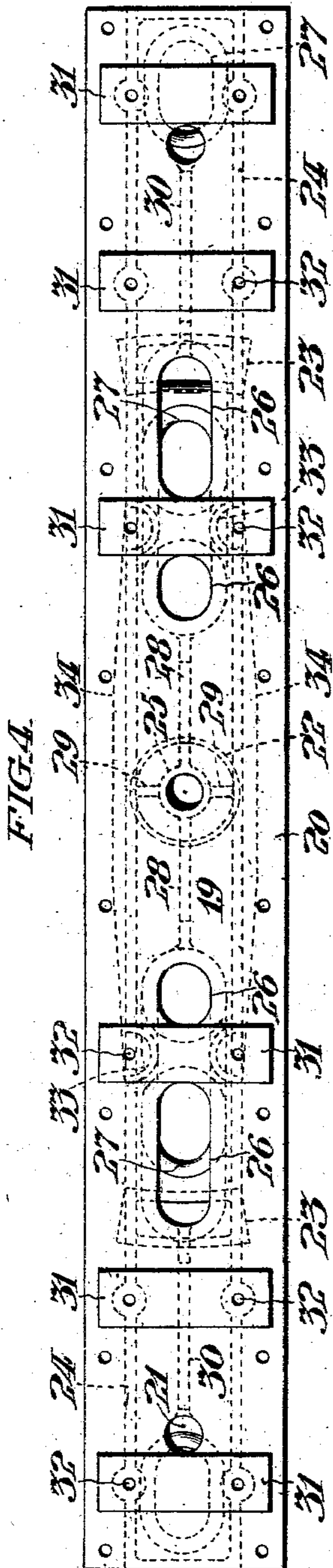
By his Attorney
W. C. Manning

T. MITCHELL.
BOLSTER.

APPLICATION FILED JUNE 20, 1902.

NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:

Arthur E. Paige
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UNITED STATES PATENT OFFICE.

THOMAS MITCHELL, OF CHESTER, PENNSYLVANIA, ASSIGNOR TO DANIEL EAGAN, OF PHILADELPHIA, PENNSYLVANIA.

BOLSTER.

SPECIFICATION forming part of Letters Patent No. 730,283, dated June 9, 1903.

Application filed June 20, 1902. Serial No. 112,423. (No model.)

To all whom it may concern:

Be it known that I, THOMAS MITCHELL, a citizen of the United States, residing at Chester, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Bolsters, of which the following is a specification.

My invention relates to car bolsters and its object is the provision of bolsters of cast metal, of simple, strong, and inexpensive construction.

In the accompanying drawings I illustrate bolsters embodying a good form of my invention. My invention may, however, be embodied in bolsters differing in many particulars from those illustrated.

In the accompanying drawings,

Figure 1 is a top plan view,—Figure 2 a view in side elevation,—and, Figure 3, a central transverse section,—of a truck bolster embodying my invention.

Figure 4 is a top plan view,—Figure 5 is a view in side elevation,—and, Figure 6 a view in central transverse section,—of a body bolster embodying certain features of my invention.

Similar figures of reference indicate corresponding parts.

In the accompanying drawings,

The truck bolster 1 is provided with a top plate 2 and bottom plate 3, center bearing 4, side bearings 5, and side walls 6. Along the central portion of the bolster the side walls are somewhat set in from the edge of the top plate. The top plate embodies the openings 7 and the bottom plate the openings 8.

9 are transverse plates which extend across from side wall to side wall at points beyond the respective side bearings.

The top and bottom plates do not extend past said transverse plates 9, but the side walls 6 extend beyond them and for the full length of the bolster.

At the outer ends of the bolster, and connective of the ends of the side walls, are the end plates 10. Fixed plates which I term spring plates 11, of quadrangular plan, are horizontally disposed within the two spaces at the respective ends of the bolsters bounded by the transverse plates 9, the end plates 10, and the end portions of the respective side

walls, said plates 11 being conveniently situated somewhat nearer the tops than the bottoms of said spaces.

As a result of this arrangement spring pockets 12 are formed in the lower portions of said spaces, said pockets serving to receive the usual springs.

To reinforce said spring plates 11, against the strain to which their contact with the springs subjects them, I provide the strengthening ribs 13, which conveniently extend across the spaces above said plates, and are integrally connected with said plates and the respective pairs of plates 9 and 10.

In the construction of cars, the spring plank occupies a fixed position, and the springs which rest upon said plank, and upon which springs the under faces of the plates 11 rest, also are of standard size. The car body, however, and bolsters are sometimes, in construction, set a little higher, and sometimes a little lower, to meet specification. In the arrangement of bolster shown in Figures 1 and 2, the plates 11 may, when the truck bolster is to be set low, be in the casting of the bolster arranged closer to the upper face of the bolster, while, on the other hand, when the bolsters are to be set higher, said plates 11 may, in the construction of the bolster, be cast in a lower position therein than they are in the drawings shown as occupying. There will thus be no occasion for using oak blocks between the tops of the springs and said spring plates to secure a uniform relation between the upper ends of the springs and the point of bearing of said springs against the plates 11. The rib 13 is very advantageous in that it reinforces the strength of the plate without adding materially to the weight.

The king bolt sleeve 35, is provided, intermediate of its length, with an internal annular rib or bead 14, as shown in Figure 3, which serves as a stop to prevent the body of a bolt, should the latter become broken from its head, from descending through the bottom portion of the sleeve and out below the bolster.

15 are webs disposed between the top and bottom plates and arranged in a vertical plane extending longitudinally of the bolster.

Said webs, in the form of my invention illus-

trated, extend in opposite directions from the king bolt sleeve, with which they connect, for a short distance beyond the margin of the center bearing plate, the outer edges of said webs being preferably of the concave profile illustrated.

Said webs, which are preferably integral with the top and bottom plates and the king bolt sleeve, very firmly support and brace said several parts.

16 are webs extending from the lower portion of the king bolt sleeve to the respective side walls of the bolster; said webs, which are preferably integrally united with the side walls, the bottom plate and the king bolt sleeve, extend preferably in a common plane perpendicular to that of the webs 15.

Preferably said webs 16 are, as shown, of height less than the distance from the bottom plate to the top plate.

The openings 8 in the bottom plate are provided about their margins, on the inner face of said plate, with beads or thickened portions 17, which serve to reinforce the strength of the metal about the openings and the general strength of the bolster.

The bolster has the usual lips or projections 18 which constitute column guides.

While my invention in its entirety is more especially adapted for embodiment in a truck bolster, certain of its features may be advantageously employed in connection with body bolsters.

The body bolster 19 shown in Figures 4, 5, and 6, consists of a top plate 20 and bottom plate 21, and it is provided with a center bearing 22, and side bearings 23.

The top and bottom plates are connected by the side walls 24 which are situated somewhat inward from the edges of the top plate, with the result that said edges constitute projecting flanges as shown.

25 is the king bolt sleeve.

26 are openings formed in the top plate and 27 openings formed in the bottom plate. Around the lips of said openings and on the inner faces of the plates in which they are situated, extend beads, as illustrated more particularly in Figure 4, especially by the dotted lines therein contained.

28 are vertically arranged webs preferably integrally united with the top and bottom plates and the king bolt sleeve. Said webs, which are arranged in a common plane preferably coincident with the axis of the bolster, extend respectively from the king bolt sleeve toward the respective ends of the bolster.

29 are a pair of webs integrally united to the king bolt sleeve, and arranged in a common plane transverse to the axis of the bolster.

Preferably said webs 29, which are integrally united with the bottom and side wall of the downwardly projecting structure constituting the center bearing plate 22, do not extend to the top plate.

30 are vertical webs arranged between the top and bottom plates beyond the respective side bearings, said webs being conveniently arranged in a common plane.

31 are seats for the truss rod saddles, said seats being shown as oblong bosses of rectangular plan, formed on the upper surface of the top plate, and being preferably formed integral with said plate.

The bases of truss rod saddles to be applied to this bolster may be provided on their under surfaces with recesses to receive said seats 31.

Said seats 31 are shown as provided with the holes 32 for the reception of bolts by which truss rod saddles of the usual form mounted upon said seats may be secured to the top plate.

The side walls 24 embody pockets or recesses 33 for the reception of the bolts of the two innermost of said seats 31.

34 are flanges extending along the outer sides of the lower edges of the side walls in the vicinity of the center bearing, the lower faces of which flanges 34 will in operation rest upon the respective sides of the center bearing plate of the truck bolster.

I prefer to make each of the bolsters herein described of cast steel, and each, with all its parts herein set forth, as a single integral casting.

Having thus described my invention, I claim—

1. A cast steel bolster formed as an integral, comprising a top plate, a bottom plate, side plates, a king bolt sleeve, two longitudinally extending webs disposed on opposite sides of the king bolt sleeve and extending from said sleeve to points intermediate the respective ends of the bolster and said king bolt sleeve, said webs being integrally united with said king bolt sleeve and said top and bottom plates.

2. A bolster the central portion of which is provided with a top plate and a bottom plate, side walls, the king bolt sleeve, and vertical webs extending longitudinally of the bolster and integrally united with the top and bottom plate, and with the king bolt sleeve.

3. A bolster, the central portion of which embodies a top and bottom plate, a king bolt sleeve, vertically disposed longitudinally extending webs integrally united with said sleeve and said top and bottom plates, and transversely extending vertically disposed webs integrally united with the king bolt sleeve.

4. A bolster, the central portion of which embodies a top and bottom plate, a king bolt sleeve, vertically disposed longitudinally extending webs integrally united with said sleeve and said top and bottom plates, and transversely extending vertically disposed webs integrally united with the king bolt sleeve, and the side walls.

5. A truck bolster having at each of its respective ends a transverse plate and an end

plate mounted upon and integrally united with the end portions of the side walls of the bolster, a pair of spring plates disposed respectively within the respective inclosures
5 formed by said respective transverse plates, end plates, and side walls, and intermediate of the height of such inclosures.

6. A truck bolster having at each of its respective ends a transverse plate and an end
10 plate mounted upon and integrally united with the end portions of the side walls, a pair of spring plates disposed respectively within the respective inclosures formed by said respective transverse plates, end plates, and
15 side walls, and intermediate of the height of such inclosures, a reinforcing rib integrally

secured to the upper face of each of said respective plates, and integrally united with the walls of said inclosures.

7. A cast steel bolster consisting of top and 20 bottom members having cast integral therewith, side and central webs, a center column and longitudinal and transverse webs, substantially as set forth.

In testimony that I claim the foregoing as 25 my invention I have hereunto signed my name this 12th day of June, A. D. 1902.

THOMAS MITCHELL.

In presence of—

THOS. K. LANCASTER,
S. SALOME BROOKE.