

No. 814,470.

PATENTED MAR. 6, 1906.

J. V. McADAM.
CAR BOLSTER.

APPLICATION FILED SEPT. 11, 1905.

3 SHEETS—SHEET 1.

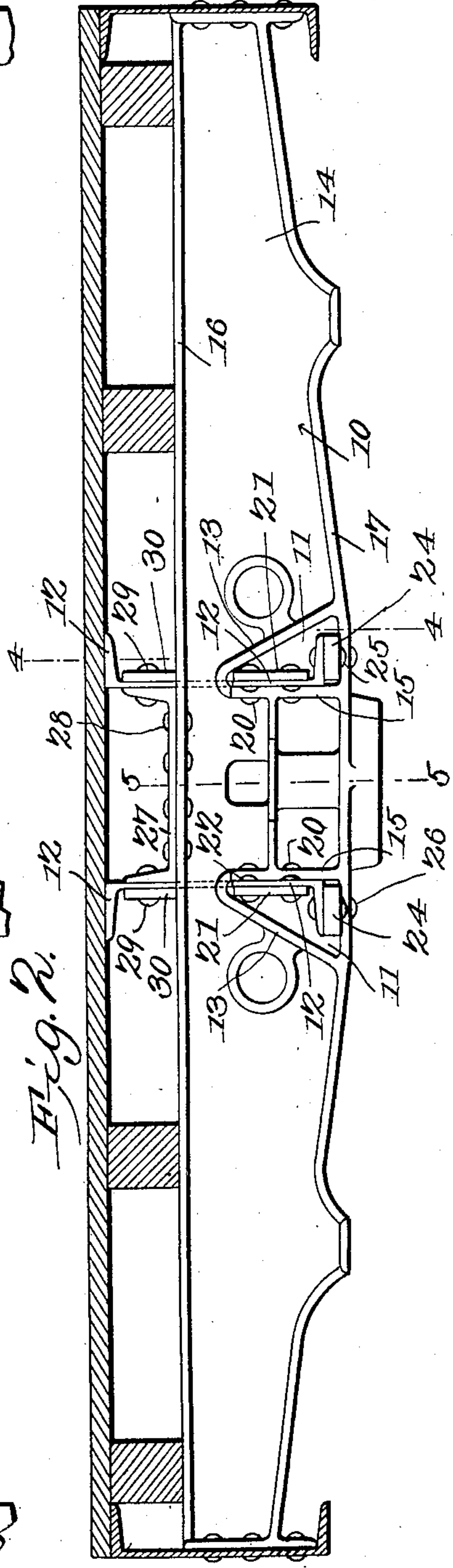
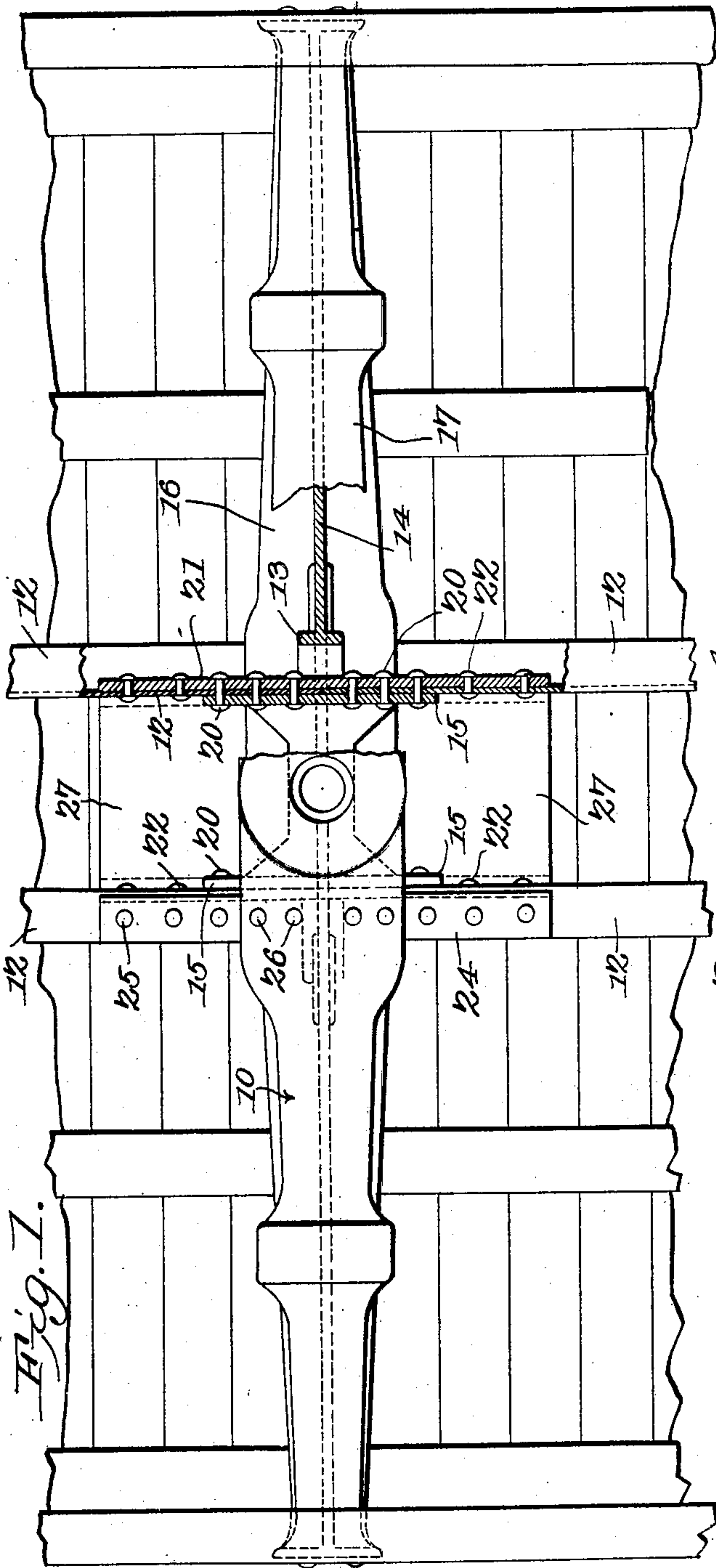


Fig. 1.

Fig. 2.

Witnesses

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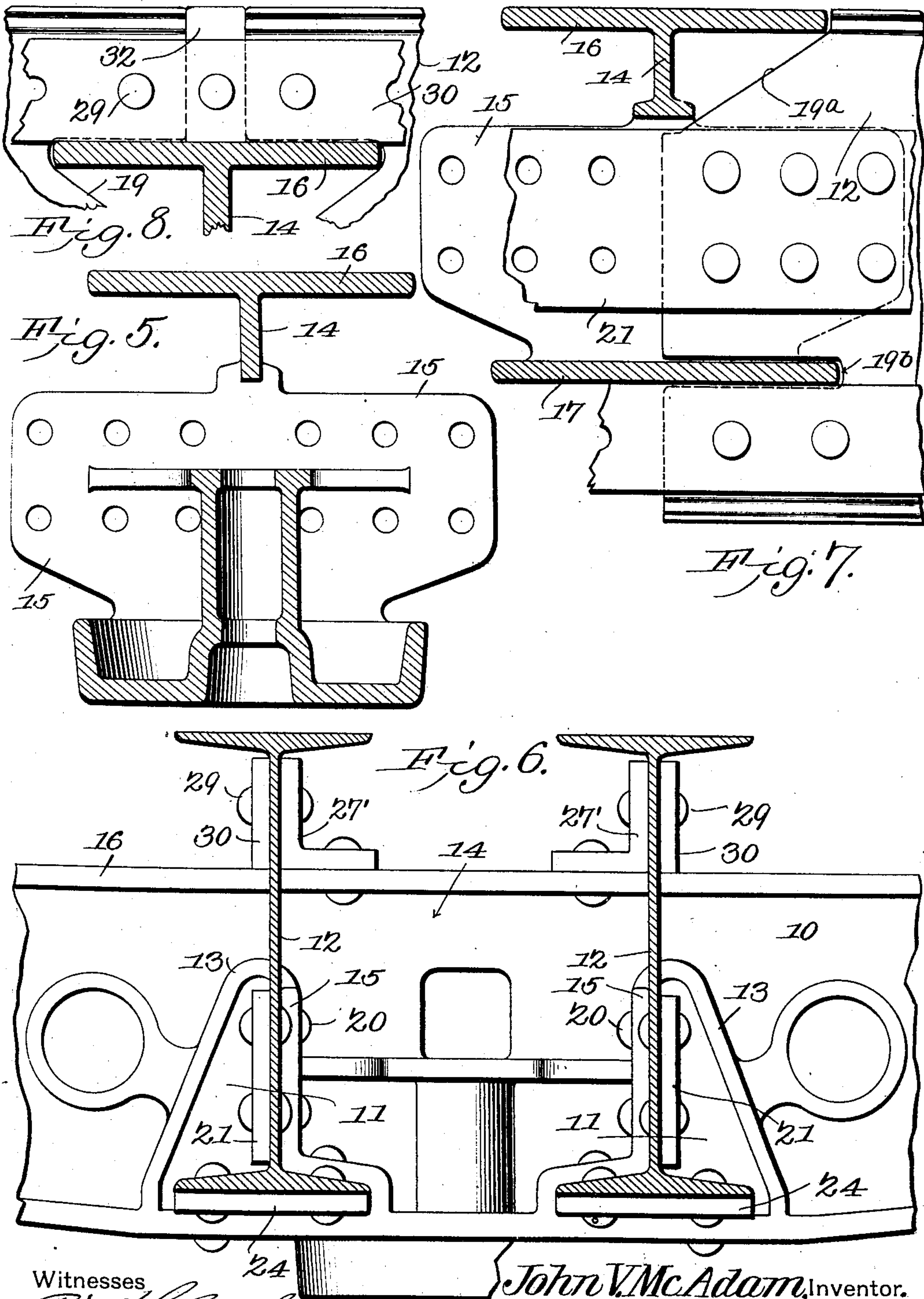
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Witnesses

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UNITED STATES PATENT OFFICE.

JOHN V. McADAM, OF GRANITE CITY, ILLINOIS.

CAR-BOLSTER.

No. 814,470.

Specification of Letters Patent.

Patented March 6, 1906.

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To all whom it may concern:

Be it known that I, JOHN V. McADAM, a citizen of the United States, residing at Granite City, in the county of Madison and State of Illinois, have invented a new and useful Car-Bolster, of which the following is a specification.

This invention relates to car construction, and principally to the construction and arrangement of the body-bolsters or other transverse bolsters or transoms and the manner in which they are connected to the longitudinal sills or frame.

One object of the invention is to improve the construction and arrangement of the draft-gear to the end that all compression and tensile strains in the direction of the length of the car shall be transmitted without strain on the body-bolsters or other transverse members of the frame, so that, in effect, the center sills shall form continuous draw-bars.

A further object of the invention is to so construct the bolsters that the longitudinal sills, which are generally formed of a number of sections, shall be arranged with the ends of said sections abutting, thus materially reducing the shearing strains on the rivets or bolts.

A still further object of the invention is to provide for the interlocking of the bolsters and center sills in such manner that the sill-sections may abut at the vertical center of the bolster and may be united by connecting plates or bars independently of the connections between the sills and bolster proper.

A still further object of the invention is to provide a structure in which the draft-arms may be made of either rolled or cast metal, arranged to abut against and form continuations of the center sill without regard to the space between said sills, the draft-arms being arranged on convergent or divergent lines in accordance with the size and character of the draw-bar and its connections.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in the novel construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrifying any of the advantages of the invention.

In the drawings, Figure 1 is an inverted plan view of a portion of a car-frame, illustrating a body-bolster constructed in accordance with the invention, a portion of the bolster being broken away in order to more clearly illustrate the construction. Fig. 2 is an elevation of the bolster, showing a portion of the car frame and flooring in section. Fig. 3 is a sectional perspective view of the central portion of the bolster and portions of the center sills. Fig. 4 is a transverse sectional elevation of the bolster on the line 4 4 of Fig. 2, the view being on an enlarged scale. Fig. 5 is a central vertical section of the bolster on the line 5 5 of Fig. 2. Fig. 6 is an elevation of the central portion of the bolster, drawn to an enlarged scale and illustrating the employment of I-beams in the place of channel-bars for the center sills. Fig. 7 is a view similar to Fig. 4, showing the surfaces of the bolster and center sills in the same horizontal plane. Fig. 8 is a detail view illustrating a further modification of the invention.

Similar numerals of reference indicate corresponding parts in each of the several views.

In the drawings the bolster 10 is of the type known as a "body-bolster," but with the exception of the central portion of the bolster, which carries the male center plate and is arranged for the reception of the center or king pin, the bolster is adapted for use at any point in the length of the car to take the place of any of the transverse bolsters or transoms.

At each side of the vertical center of the bolster is arranged an opening 11 for the reception of the ends of the center sills 12, these being usually in the form of channel-bars. The wall of this opening is provided with a flange 13, which projects from each side of the central vertical web 14 of the bolster, and a portion of each flange is extended to form a pair of riveting-wings 15, in which rivet or bolt openings are formed. The upper and lower webs 16 and 17 of the bolster are continuous, and in order to arrange the sills with their ends abutting it is necessary to slightly recess the end of each sill, as indicated at 19, these recesses receiving the upper web 16 of the bolster.

The ends of the sill-sections abut and form practically continuous sills from end to end of the car, the draw-bar arms, which extend from the bolster toward the ends of the car, being formed either of rolled or cast metal and the arms being arranged on diverging or

converging lines in accordance with the character of the draft-gear. The end portions of the sill-sections are firmly secured to the wings 15 by rivets 20, and for light cars this connection may be sufficient; but to add to the strength of the structure it is preferred to employ additional splice-bars.

The main splice-bars 21 may be of a length greater than the length of each pair of wings 15 and are arranged against the outer faces of the sills, the rivets 20 passing through the wings, the sill member, and the splice-bars 21, and, in addition to these, rivets 22 are also employed to connect the splice-bars to the vertical webs of the sills, so that under both thrust and tensile strains the shearing effect on the rivets 20 will be materially lessened.

As an additional precaution, bottom splice-bars 24 may be placed under the sill member and secured thereto by rivets 25, additional rivets 26 being employed to connect the lower web 17 of the bolster to both the sill-sections and the splice-bar 24. Additional connections may also be employed at the tops of the sills, these taking the form of either angle or channel bars, a channel-bar 27 being shown in Fig. 3. The horizontal main web of the channel-bar 27 is secured to the upper web 16 of the bolster by rivets 28, and the vertical webs of said channel-bar are secured to the sills by rivets 29, being preferably extended through openings formed in splice-bars 30, arranged against the outer faces of the sills.

The construction of the bolster and its connection to the sills renders the center sills practically continuous from draw-head to draw-head, and there will be little or no strain on the bolster proper, the latter being protected from shocks and jars incident to work on heavy trains.

The sill members, while usually formed of channel-bars, may be formed of I-beams or beams of any other type, Fig. 6 illustrating a construction in which I-beams are employed and the shape of the openings 11 in the bolsters being correspondingly altered. In this case also the upper splice members take the form of angle-bars 27' instead of the channel-bars 27, although either form of splice may be used in their construction.

In the construction of some cars it may be advisable to place the upper edges of the sills and the tops of the bolsters in the same horizontal plane. Fig. 7 illustrates a construction of this type in which the sill members are recessed at 19^a and 19^b in order to receive the bolster and permit the ends of the sill-sections to abut.

While it is preferred to arrange the ends of the beam-sections in abutting relation, it is not in all cases essential that the ends of said beams be in direct contact, and in some cases a filling-block 32 may be placed between the ends of the sections, as shown in Fig. 8, the

block serving as a means for transmitting end thrust directly from one section to the other. While this modification may be of service in some cases, it is preferred to place the beams in direct contact with each other; but in any case the beams are considered as abutting when so arranged, either with or without the filling-block, as to transmit endwise strains directly from section to section of the sill without the intervention of the bolster.

Having thus described the invention, what is claimed is—

1. In car-frame construction, a bolster and longitudinal sills, the latter being formed in sections the ends of which abut within the limits of the bolster.

2. In car-frame construction, sills formed of abutting sections, and a bolster member secured to said sections.

3. In a car-frame construction, the combination with the bolsters, of sill members formed in sections, the ends of the sections abutting within the limits of the bolster and being connected to form continuous draft members.

4. In car-frame construction, a bolster having an opening, and a sectional sill, the sections of the sill fitting within said openings and having abutting ends.

5. In car-frame construction, a bolster having a transverse opening and a sectional sill, portions of the sill-sections being cut away to permit the insertion of said sills within the bolster-opening, the ends of said sections abutting.

6. In car-frame construction, a bolster, a sectional sill, the bolster and sill-sections being recessed to permit the sill-sections to abut, and means for securing said sill-sections to the bolster.

7. In car-frame construction, a bolster having a flanged opening, a sill formed in sections the ends of which are arranged within said openings and abut, and means for securing said sill-sections to the flange.

8. In car-frame construction, a bolster having a transverse opening one wall of which is provided with flanges forming laterally-extending wings, a sill formed in sections the vertical webs of the sections being recessed for the reception of portions of the bolster, and the ends of said sections abutting within the lines of the bolster, and means for securing the vertical webs to said wings.

9. In car-frame construction, a bolster, a sectional sill, the ends of said sections abutting within the limits of the bolster, and splice-bars connecting said sections independent of the bolster.

10. In car-frame construction, a bolster, a sill having sections the ends of which abut within the limits of the bolster, and splice-bars connecting said sections.

11. In car-frame construction, a bolster

having a transverse opening, the wall of which is flanged, a sectional sill, the ends of the sections extending partly in said opening and abutting, splice-bars, and means for securing the splice-bars to the sill-sections.

12. In car-frame construction, a bolster having a flanged opening, a sill formed in sections, the ends of said sections being partly recessed to fit around the bolster, means for securing said sill-sections to the bolster-flange, splice-bars, and means for securing the splice-bars to the sill-sections.

13. In car-frame construction, a bolster having a transverse opening, the wall of which is flanged, a sill formed of sections the ends of the sections abutting, means for securing the sections to the flanges, splice-bars, means for securing the splice-bars to the sill-

sections, and means for securing the flanges of the sill-sections, and splice-bars together. 20

14. In car-frame construction, a bolster having a transverse opening the wall of which is flanged, a sill formed of sections, the ends of said sections being arranged within said opening and arranged to permit the transmission of endwise strains without the intervention of the bolster, and means for securing said sections to each other. 25

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses. 30

JOHN V. McADAM.

Witnesses:

C. E. DOYLE,
ALFRED B. DENT.