

No. 865,745.

PATENTED SEPT. 10, 1907.

J. S. ANDREWS.
UNDERFRAME FOR CARS.
APPLICATION FILED JUNE 1, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

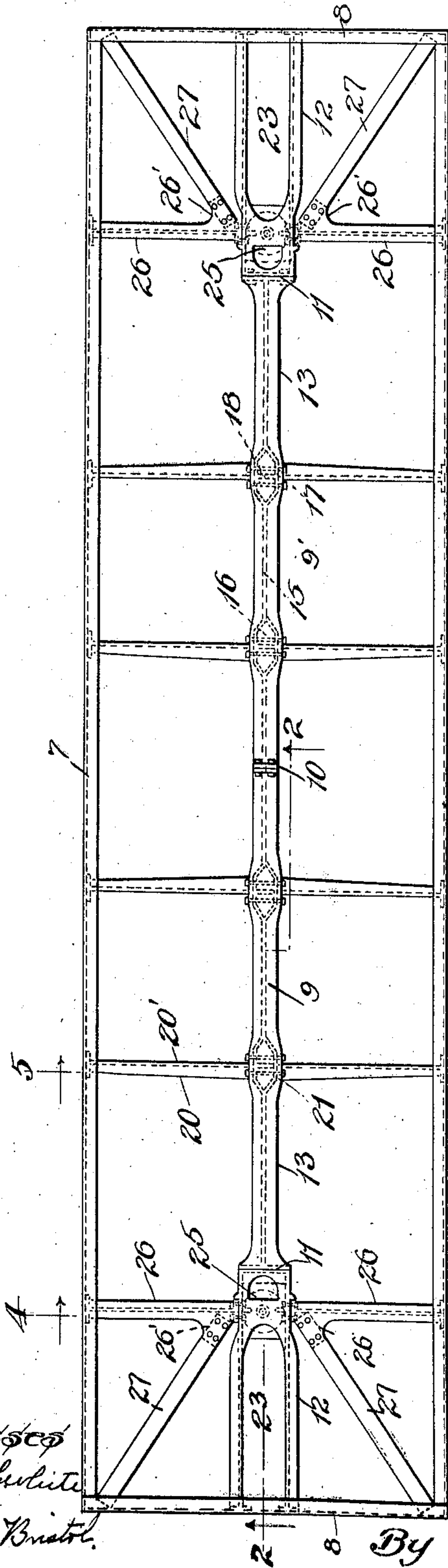
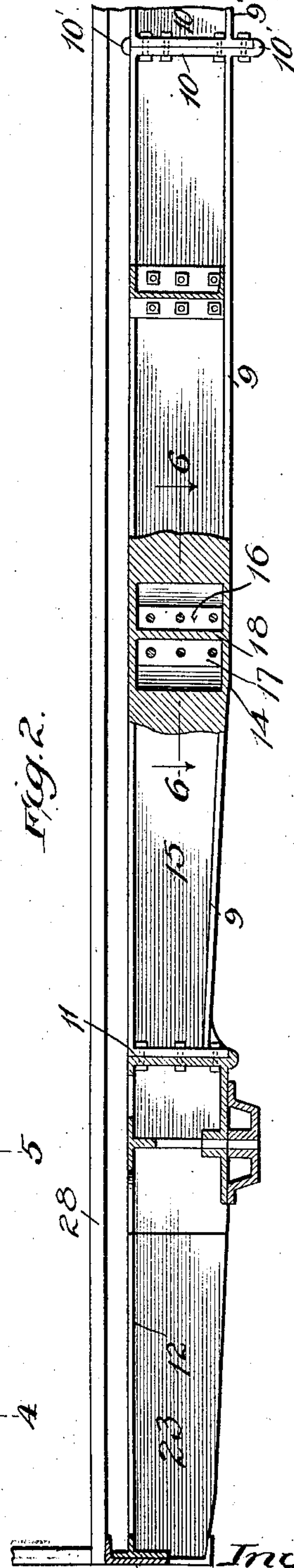


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

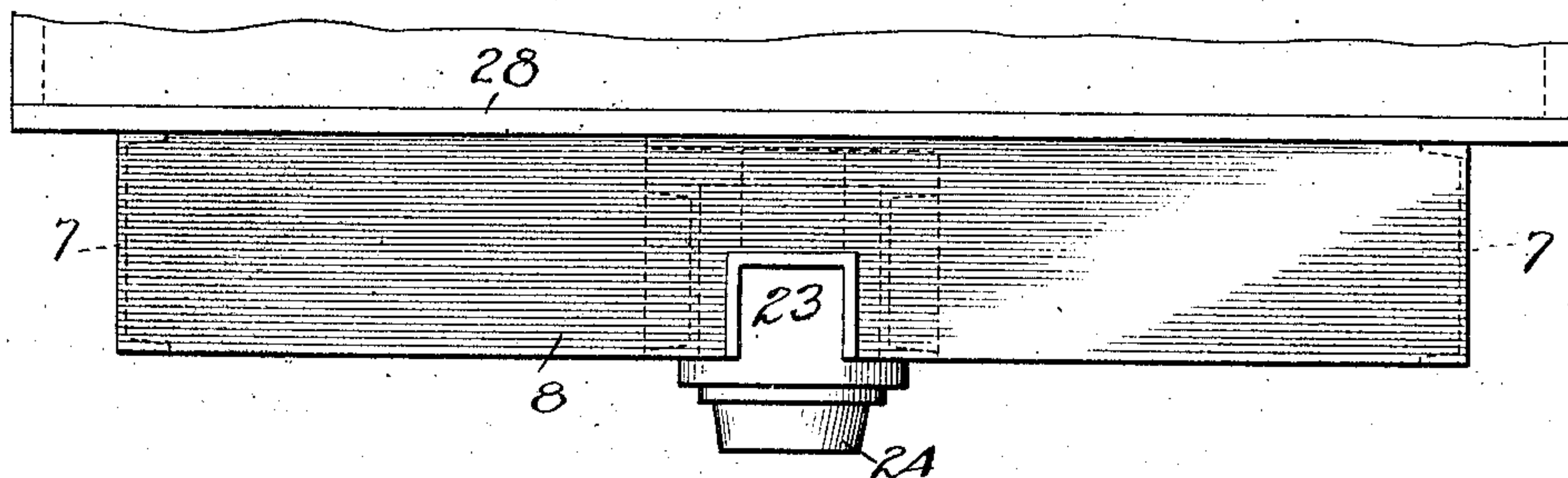


Fig. 4.

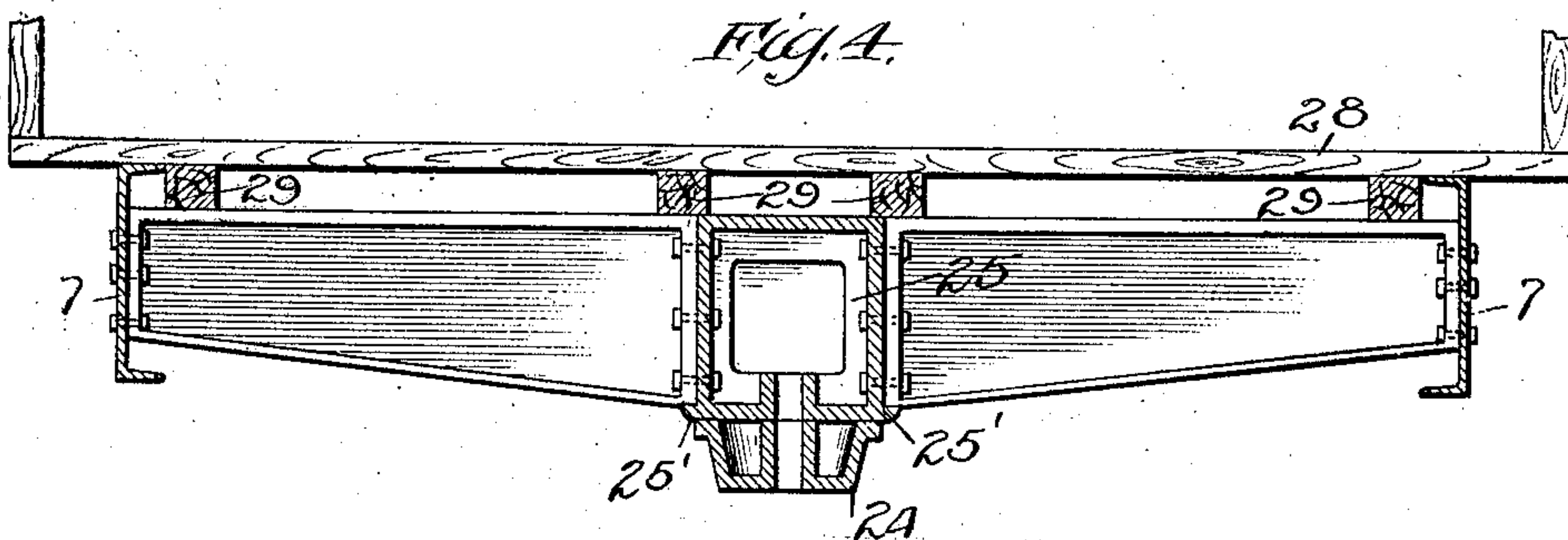


Fig. 5.

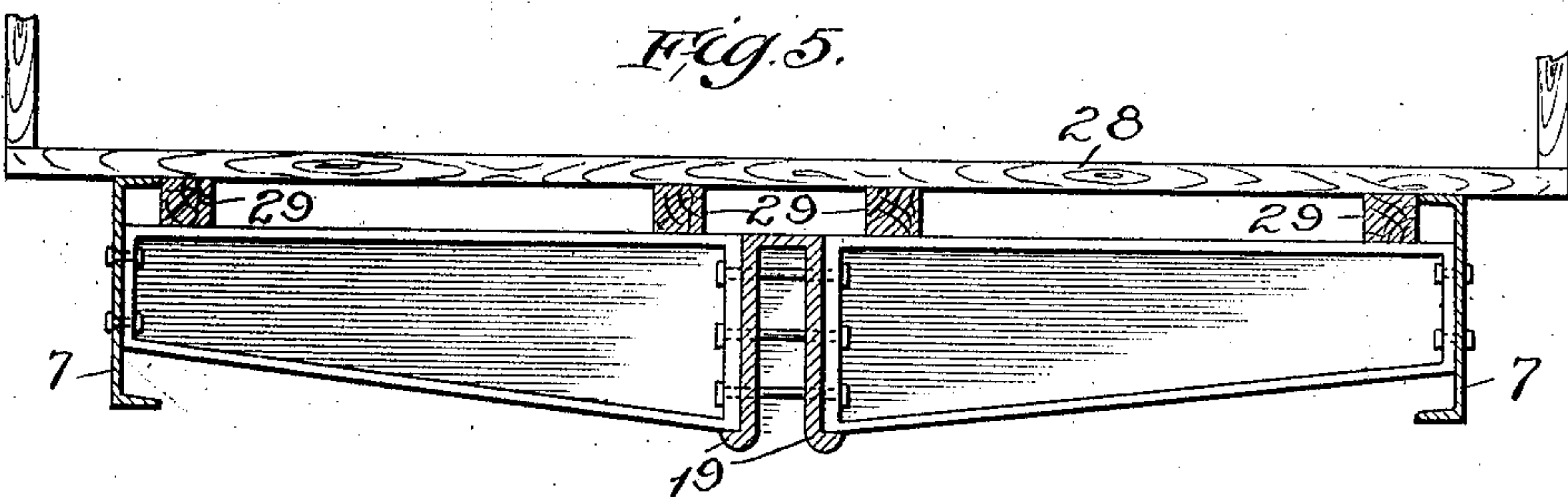
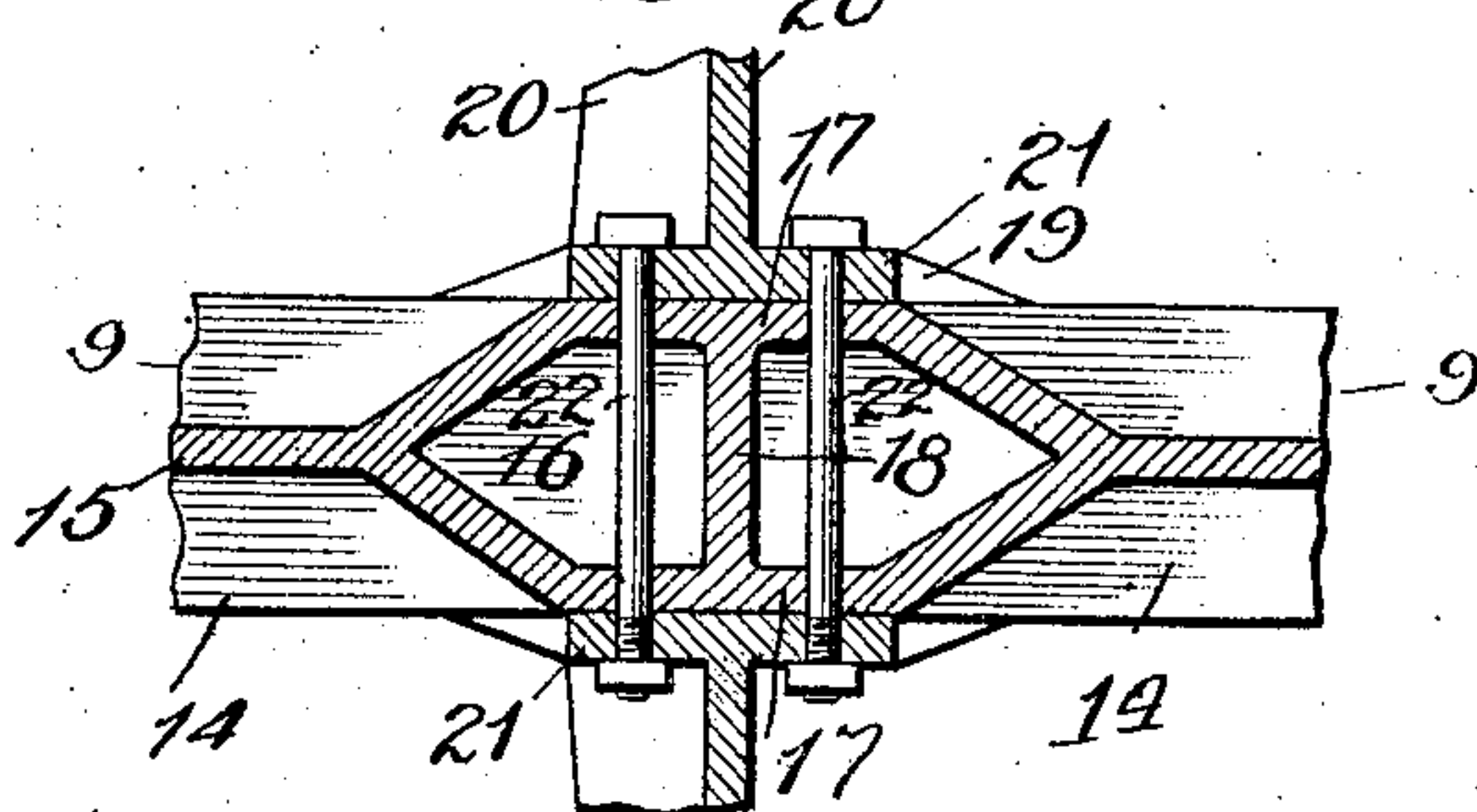


Fig. 6.



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UNITED STATES PATENT OFFICE.

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UNDERFRAME FOR CARS.

No. 865,745.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed June 1, 1907. Serial No. 376,853.

To all whom it may concern:

Be it known that I, JAMES S. ANDREWS, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented new and useful Improvements in Underframes for Cars, of which the following is a specification.

This invention relates to underframes for railway cars and its object is, primarily, to provide a metal underframe of strong and substantial construction and composed of standard sections, consisting of steel castings and bars.

Another object of the invention is to reduce the cost of manufacture, assembling and repairing by making the sections according to a comparatively few patterns, and so as to be interchangeable; and assembling them in a manner which will permit the sections to be easily replaced.

In the accompanying drawings I have illustrated one embodiment of the invention and referring thereto Figure 1 is a plan view. Fig. 2 is a longitudinal sectional view on the line 2—2 of Fig. 1. Fig. 3 is an end view. Fig. 4 is a sectional view on the line 4—4 of Fig. 1. Fig. 5 is a sectional view on the line 5—5 of Fig. 1. Fig. 6 is an enlarged detail sectional view.

Referring to the drawings, 7, 7 are the side sills and 8, 8 are the end sills and these sills may be made of channel bars bolted together at their ends in a suitable manner. The center sill is preferably made in two sections 9, 9' provided with heads 10 at their inner ends which abut each other and are bolted together. The end of one section is preferably provided with ribs 10' at its top and bottom to overlap the end of the other section (Fig. 2). The outer ends 11 of the center sills are bolted to the draw-bar sills 12.

The center sill sections preferably consist of steel or semi-steel castings in I form having a top flange 13 (Fig. 1), a bottom flange 14 and a connecting web 15 (Fig. 6). The web 15 is provided at intervals with pockets 16, the sides 17 of which are flush with the edges of the flanges 13 and 14 and are braced by a central web 18. The sides 17 of the pockets are provided at the bottom with outwardly projecting supporting ribs 19 (Fig. 5).

The transoms 20 preferably consist of castings each made in the general form of a channel bar with a head plate 21 at each end extending laterally on each side of the web 20' to receive the bolts by which the transom is secured to the center sill and the side sills. The transoms are arranged in pairs on opposite sides of the center sill and in alinement with each other, their inner ends abutting against the sides 17 of the pockets and resting upon the ribs 19. I prefer to employ long bolts 22 which pass through the heads 21 and the pocket for securing each pair of transoms to the center sill, but short bolts may be employed for securing each head 21 to the adjacent side 17 of the pocket, if desired.

The draw-bar sill 12 consists of a casting provided with an opening 23 to receive the draw-bar and its attachments and at its rear end this sill is preferably provided on its lower side with an integral center plate 24. The draw-bar sill has a pocket 25 with ribs 25' at the bottom of its sides to support the end transoms 26 which abut against the sides of the pocket and are bolted thereto. A rib 25'' at the rear of the pocket supports the end of the center sill. These end transoms have ears 26' to each of which one end of a diagonal brace 27 is bolted, the other end of the brace being bolted to the end sill at or adjacent to its connection with the side sill. The floor 28 is laid on stringers 29 which rest on the transoms and lie flush with the upper edges of the side sills.

The invention consists of comparatively few parts which are made of standard sizes and shapes so that like parts can be used interchangeably. Thus the two sections of the center sill are made alike and are interchangeable, and similarly the two draw-bar sills, the two side sills and the two end sills are interchangeable. The transoms are made according to two patterns and those of each pattern are interchangeable.

The sections of the underframe are adapted to be easily and quickly secured together in a strong and rigid manner and any section can be readily removed and repaired or replaced.

It will be observed that any one of the transoms 20 can be removed by withdrawing the bolts and sliding it along lengthwise of the frame until it has cleared the pocket, at which time its inner end will also have cleared the flanges 13 and the ribs 19 on the center sill.

I have referred herein to the use of bolts for fastening the parts together, but in many places rivets can be used instead of the bolts.

What I claim and desire to secure by Letters Patent is:

1. An underframe for cars, comprising two cast steel draw-bar sills, there being ribs on said sills, and a cast steel center sill resting at its ends on said ribs and secured to the draw-bar sills.

2. An underframe for cars, comprising two cast steel draw-bar sills, and a cast steel center sill secured at its ends to said draw-bar sills, said center sill being made in two sections and having heads at their abutting ends, and means passing through said heads to secure said sections together.

3. An underframe for cars, comprising two cast steel draw-bar sills; and a cast steel center sill secured at its ends to said draw-bar sills, said center sill being made in two sections and having heads at their abutting ends, and means passing through said heads to secure said sections together, there being ribs on one section at the top and bottom thereof to overlap the end of the other section.

4. An underframe for cars, comprising a cast steel center sill having top and bottom flanges and a connecting web, there being pockets at intervals in said center sill, the sides of said pockets being flush with the edges of said flanges, and transoms secured to the sides of the pockets.

5. An underframe for cars, comprising a cast steel

center sill having top and bottom flanges and a connecting web, there being pockets at intervals in said center sill, the sides of said pockets being flush with the edges of said flanges, and there being ribs at the lower edges of said sides, and transoms resting on said ribs and secured to the sides of said pockets.

6. An underframe for cars, comprising two channel side sills, a cast steel I-shape center sill, there being pockets at intervals in said center sill and the sides of said pockets being flush with the outer edge thereof; and cast steel channel transoms having head plates at their ends and secured to said side sills and to the sides of the pockets in the center sill.

7. An underframe for cars, comprising two side sills, two draw-bar sills, there being a pocket in each draw-bar sill and ribs at the sides and rear thereof, a center sill resting

on the rear ribs and secured to said draw-bar sills, and transoms resting on the side ribs and secured to said side sills and draw-bar sills.

8. An underframe for cars, comprising two side sills, two end sills, two draw-bar sills, there being a pocket in each draw-bar sill and ribs at the sides and rear thereof, a center sill resting on the rear ribs and secured to said draw-bar sills, transoms resting on the side ribs and secured to the draw-bar sills and the side sills, there being ears on said transoms, and braces secured to said ears and to the end sills adjacent to their connection with the side sills.

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