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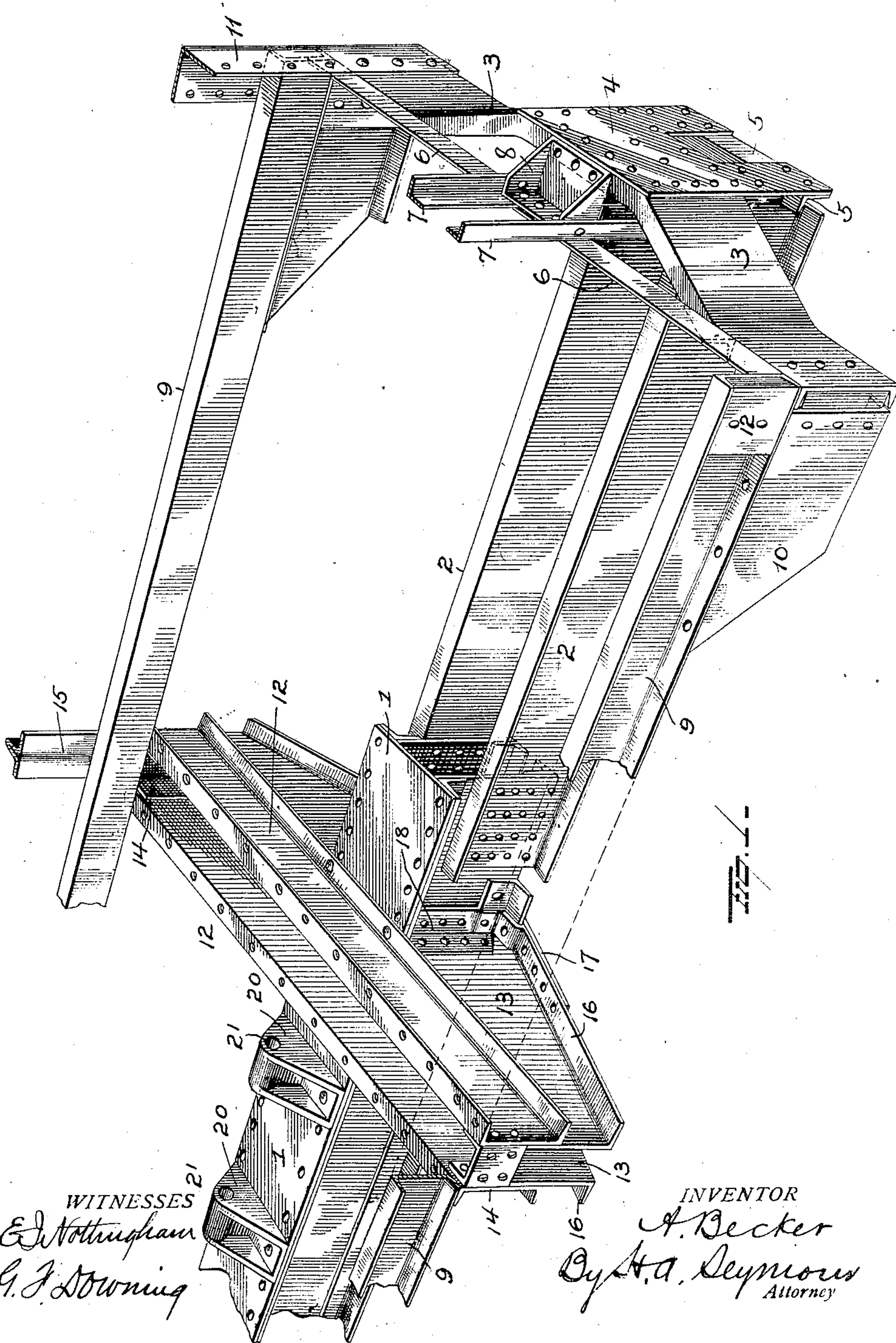
PATENTED JAN. 15, 1907.

A. BECKER.

STEEL UNDERFRAME FOR CARS.

APPLICATION FILED JULY 6, 1906.

3 SHEETS—SHEET 1.



WITNESSES
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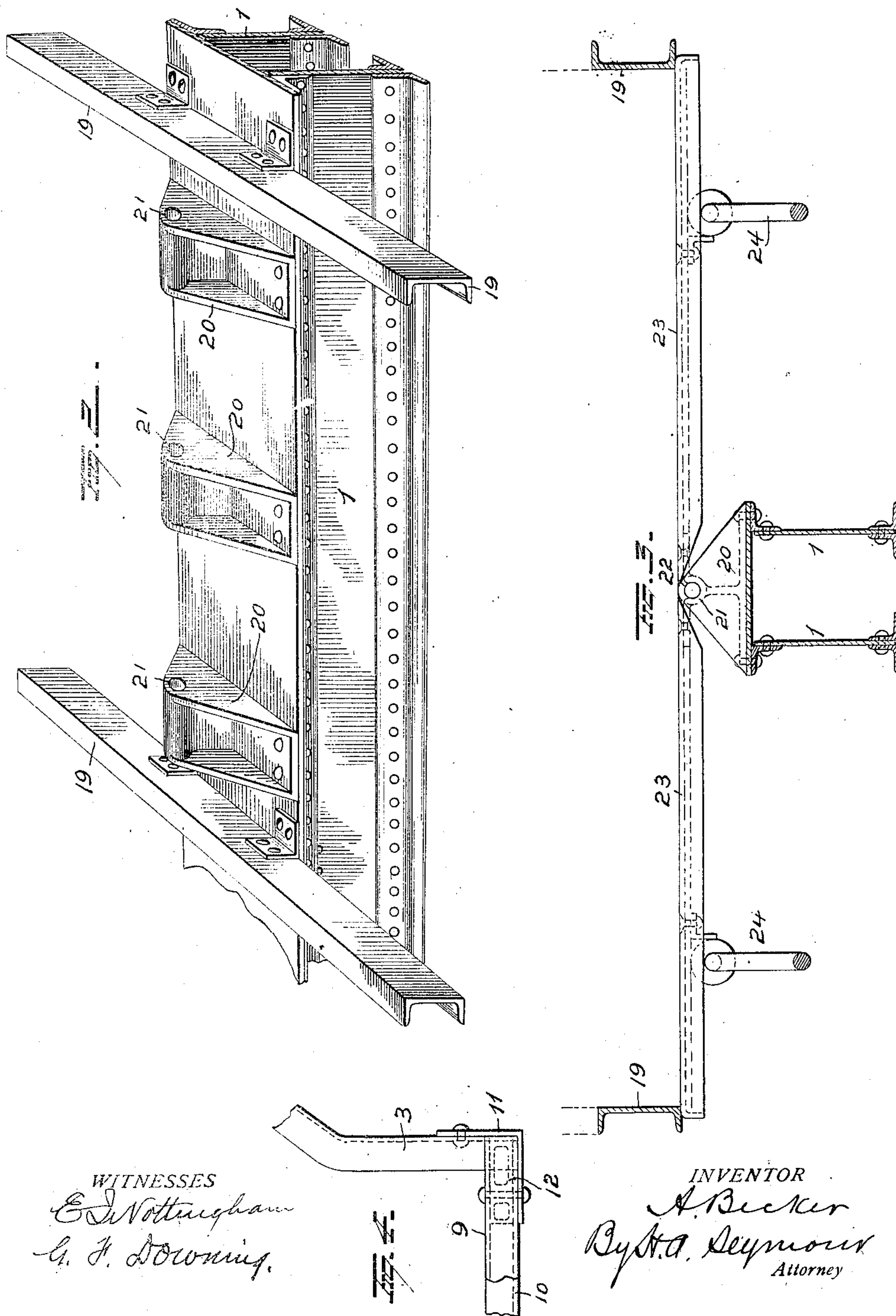
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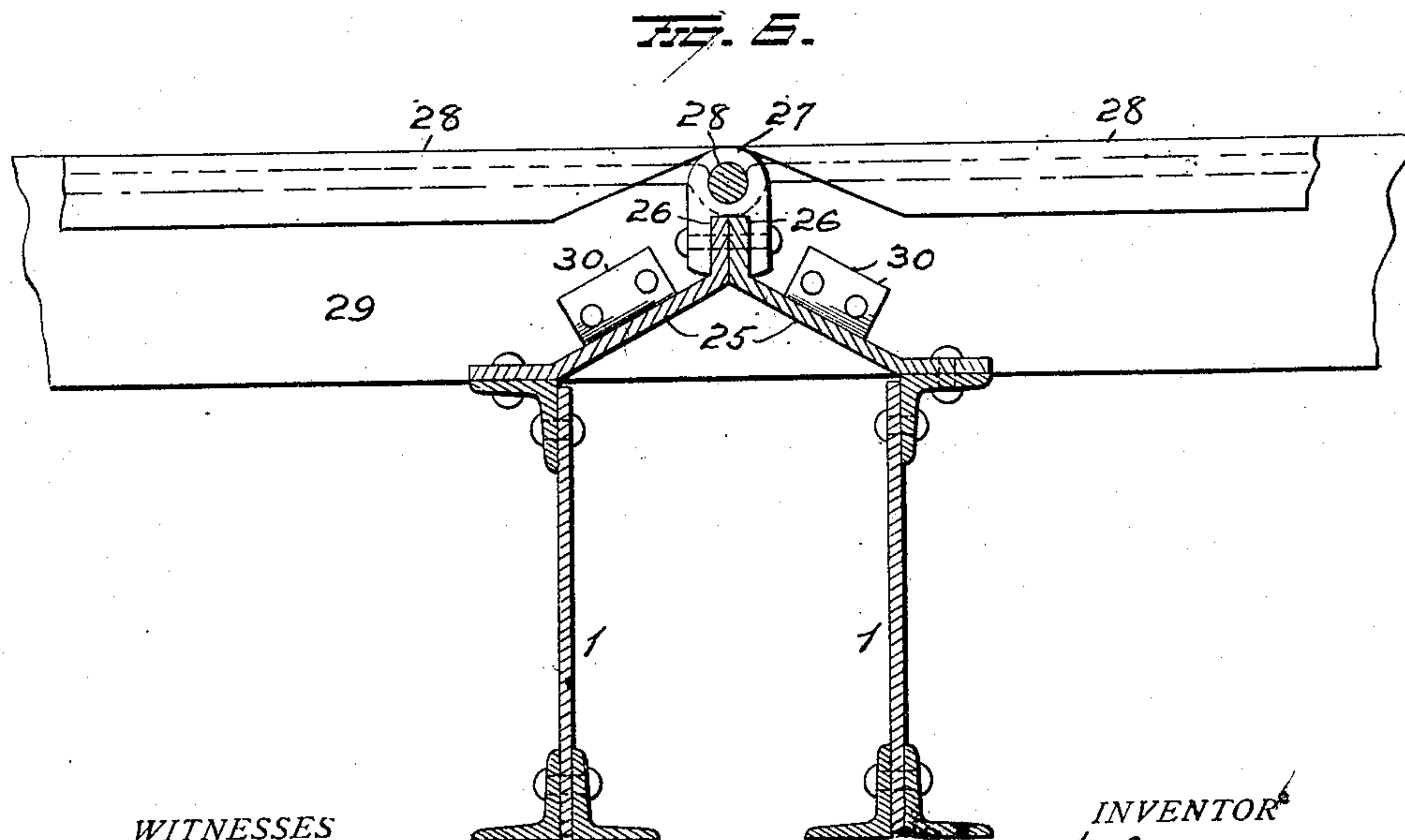
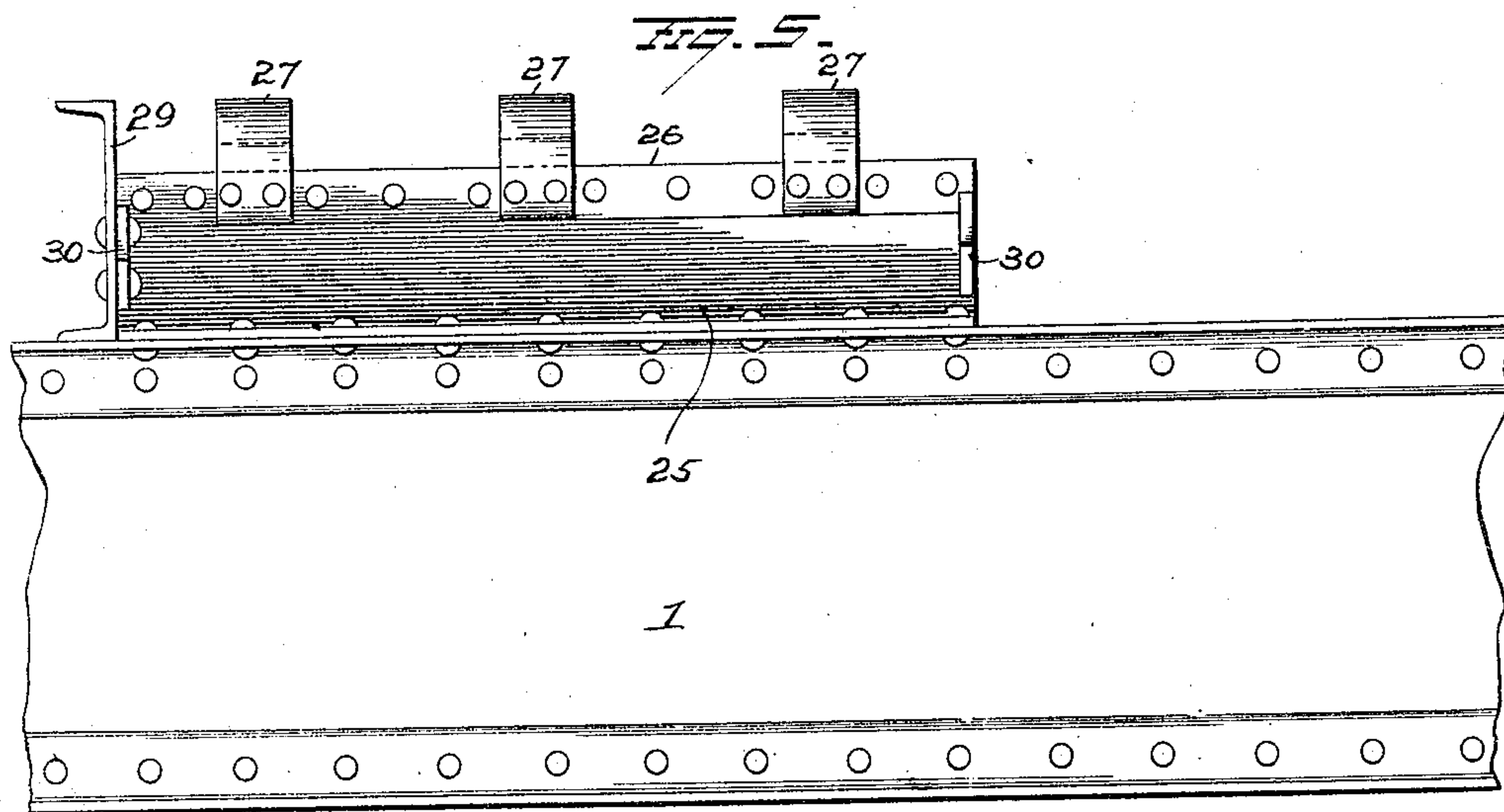
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UNITED STATES PATENT OFFICE.

ANTON BECKER, OF COLUMBUS, OHIO.

STEEL UNDERFRAME FOR CARS.

No. 841,221.

Specification of Letters Patent.

Patented Jan. 15, 1907.

Application filed July 6, 1906. Serial No. 324,986.

To all whom it may concern:

Be it known that I, ANTON BECKER, a resident of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Steel Underframes for Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improved steel underframes for cars, the object of the invention being to provide improved car-end-frame construction, improved bolster construction, and improved drop-door mounting; and it consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a fragmentary perspective view illustrating one end of the car-frame. Fig. 2 is a fragmentary perspective view illustrating the drop-door mounting on the center girder. Fig. 3 is a transverse sectional view illustrating the drop-door mountings and operating parts. Fig. 4 is a detail plan view illustrating the construction of a corner of the car, and Figs. 5 and 6 are views of a modification.

1 represents the central box-girder, made up of plates and angle-irons, as shown, and having secured to its opposite sides, at its ends, channel draft-sills 2 2, and the latter secured in turn to the central portion of the centrally-bulged channel end sill 3. To the central portion of end sill 3 a face-plate 4 is secured and is notched to receive the draw-bar, which latter is supported on the carrier-angle 5.

An angle-bar 6 extends across the draft-sills 2 and in line with the straight end portions of end sill 3 and is secured to the top flanges of the latter, and car end stakes 7 extend to the bottom of draft-sills 2, are secured thereto and to gusset-plates 8, and the latter are secured to the draft-sills, as well as to the angle-bar 6, as clearly illustrated. This construction gives great strength to the end of the car-frame, and the end stakes have an extended bearing throughout the height of the draft-sills 2, which adds greatly to the strength of the car.

The space provided by the bulged end sills may be closed by a plate riveted thereto or may be left open, as preferred.

The bolster is composed of parallel channels 12, extending across the center girder 1 and having their lower flanges riveted through the top plate and flanges of the side angles of the center girder. Bolster diaphragm-plates 13 are riveted to the lower portions of channels 12, and metal filler-pieces 14 are secured between the ends of the parallel channels 12. To these filler-pieces 14 side stakes 15 are secured.

The lower edges of diaphragm-plates 13 are provided with flanges 16, and bottom tie-plates 17 extend beneath the center girder and are secured to the lower flanges of the diaphragm-plates, as clearly shown, and angle-plates 18 connect the diaphragm-plates 13 with the side plates of the center girder. Cover-plates are to be secured on the upper faces of the channels 12, for which purpose rivet-holes are provided in the upper flanges of the channels.

Side sills 9 rest upon the end sill 3 and bolster-channels 12 above the floor-line, and sub side sills 10 are riveted to the lower flanges of the side sills, and said sub side sills are connected with the end sill by means of corner plates or bands 11. Each side sill is provided with a filler-block 12^a to come flush with the sub side sill 10 and flanges of the side sills 9.

On the center girder 1 at intervals between the cross-bearers 19 triangular castings or blocks 20 are secured and provide a series of aligned bearings 21 for a journal or pin 22, on which the drop-doors 23 are hinged, and crank-shafts 24 are provided for operating these doors, as is well understood in this art by reference to my prior patents.

In Figs. 5 and 6 a modification is illustrated, in which the center girder is closed at the top by inclined ridge-sheets 25, secured together at their inner edges, where flanges 26 are provided for the reception of securing-rivets, and bearing-blocks 27 are recessed to receive these flanges 26 and are securely riveted thereto. Journals 28 are located in bearing-blocks 27 and provide hinge-mounting for the drop-doors 28 between the cross-bearers 29, and the ends of the ridge-sheets 25 are made with tongues 30, bent up at right angles and securely riveted to the cross-bearers.

A great many slight changes might be made in the general form and arrangement of the parts described without departing

from my invention, and hence I do not restrict myself to the precise details set forth, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a car-frame, the combination with a center girder and draft-sills secured to the sides of the center girder, of a bulged end sill secured to the ends of the draft-sills, and end stakes secured to the draft-sills and having a bearing the entire height of the draft-sills.

2. In a car-frame, the combination with a center girder and draft-sills secured to the sides of the center girder, of a bulged end sill secured to the ends of the draft-sills, an end-sill angle extending over the bulged portion of the sill and secured thereto, end stakes secured to said sill-angles, and gusset-plates connecting sill-angles, end stakes, and end sills.

3. In a car-frame, the combination with an end sill, and side sills above the same, of sub side sills below the side sills, and devices securing them together at the corner of the frame.

4. In a car-frame, the combination with a center girder, of a bolster extending across the girder secured thereto, and comprising parallel channels, filler-pieces between the ends of the channels, and side stakes secured to the filler-pieces.

5. In a car-frame, the combination with a center girder, of a bolster extending across the girder, secured thereto and comprising parallel channels, diaphragm-plates secured to the channels and center girder, and bottom tie-plates extending beneath the girder and secured to the diaphragm-plates.

6. In a car-frame, the combination with a center girder, of a bolster extending across the girder, secured thereto, and comprising

parallel channels, filler-pieces between the ends of the channels, side stakes secured to the filler-pieces, diaphragm-plates secured to the channels at opposite sides of the girder, angles securing the diaphragm-plates to the girder, flanges at the lower edges of the diaphragm-plates, and bottom tie-plates extending beneath the girder, secured thereto and secured to the flanges of the diaphragm-plates.

7. In a car-frame, the combination with a center girder, and cross-bearers, of blocks secured directly upon the center girder between the cross-bearers, journals in aligned bearings in said blocks, and drop-doors hinged on said journals.

8. In a car-frame, the combination with a bolster comprising parallel channels, of stakes at the ends of the channels, means for securing said stakes to the inner faces of the bolster members, and side sills sustained by said bolster members.

9. In a car-frame, the combination with a center box-girder and cross-bearers extending across the same and secured thereto, of triangular blocks or castings secured directly on the girder between the cross-bearers, a journal or hinge-pin in aligned bearings in the blocks or castings, and drop-doors hinged on said journal or pin and constructed to close the spaces between the cross-bearers at both sides of the center girder.

10. In a car-frame, the combination with an end sill, of a side sill above the plane of the end sill, and a sub side sill or bracket below the side sill, secured thereto and to the end sill.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ANTON BECKER.

Witnesses:

S. W. FOSTER,

S. G. NOTTINGHAM.