

No. 746,457.

PATENTED DEC. 8, 1903.

H. CARLTON.
FLOOR FRAME FOR CARS.
APPLICATION FILED JULY 8, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

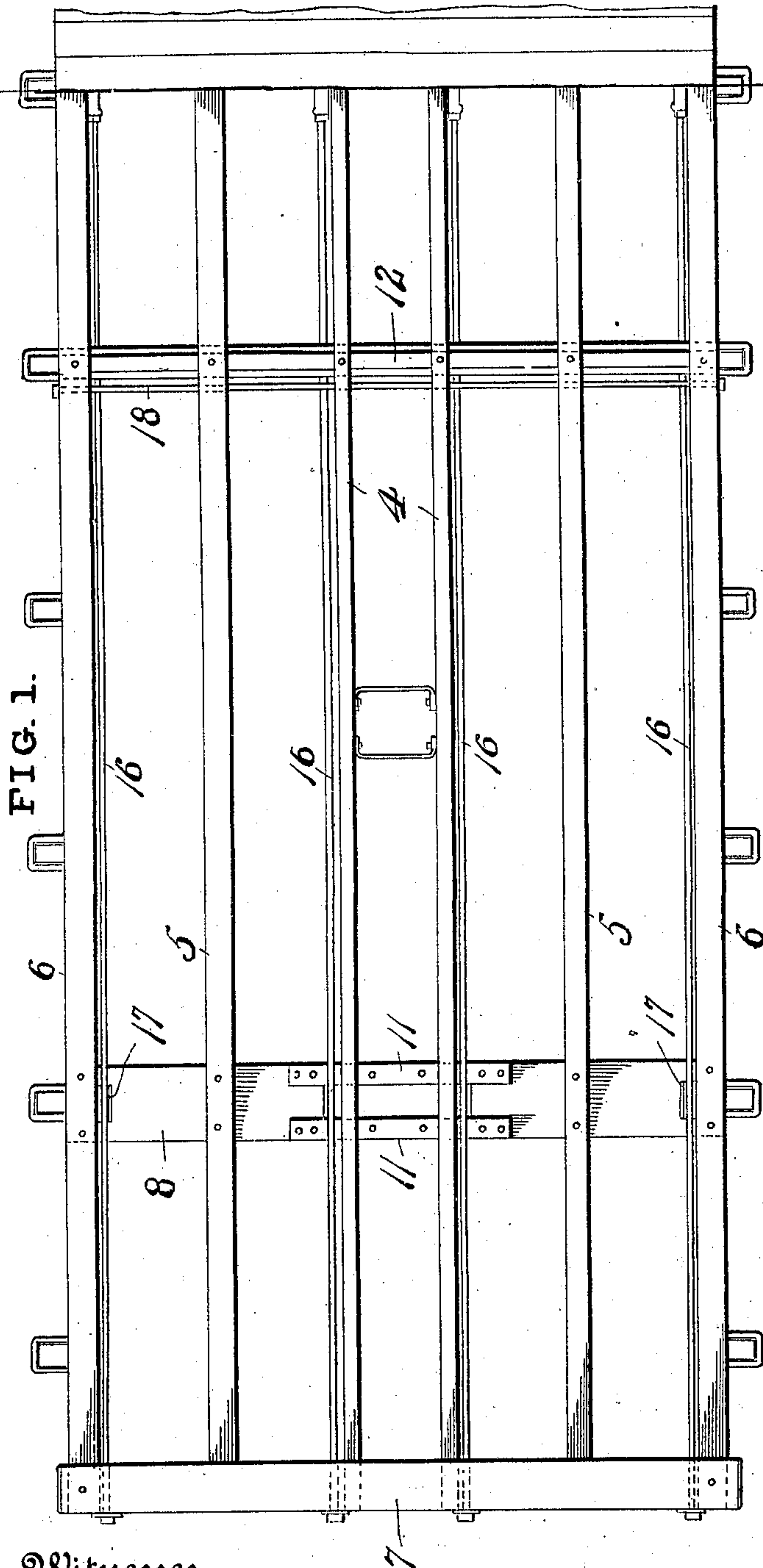


FIG. 1.

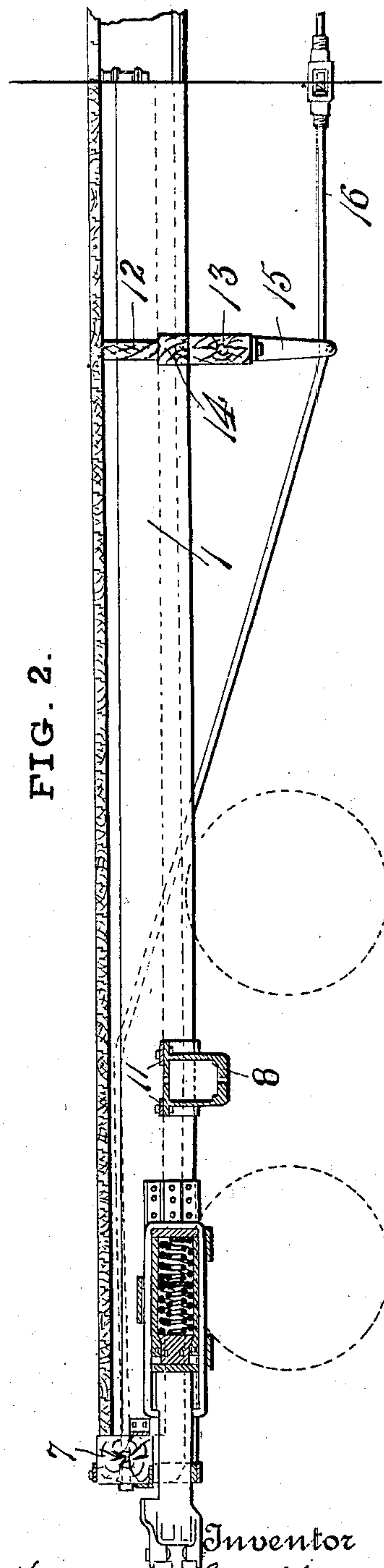


FIG. 2.

Witnesses
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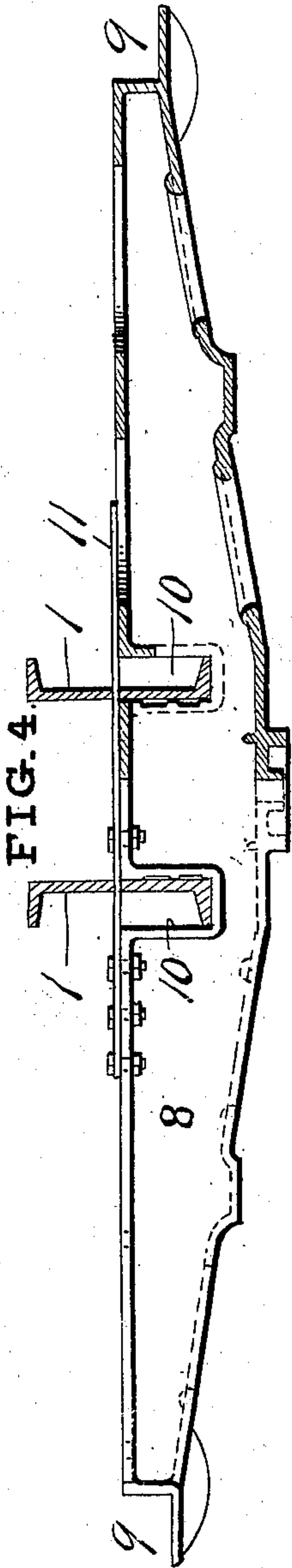


FIG. 4.

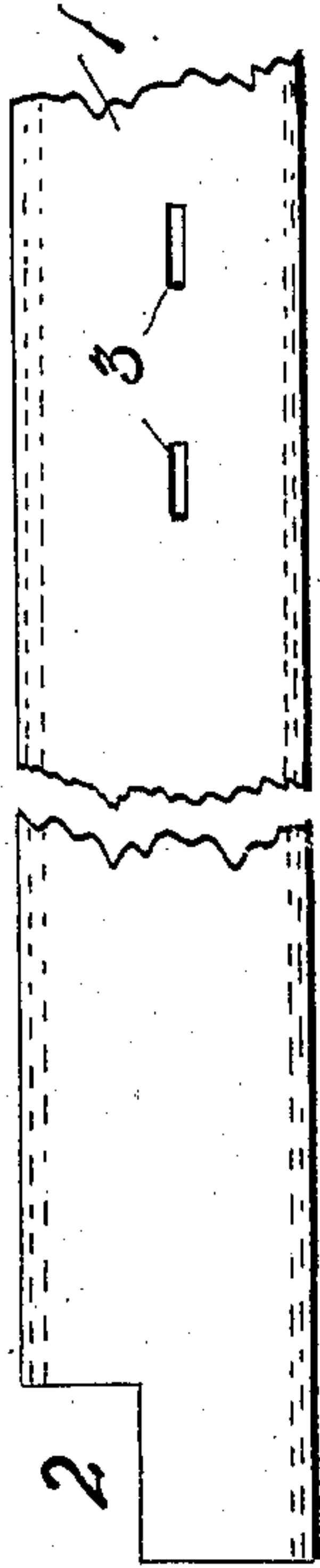


FIG. 5.

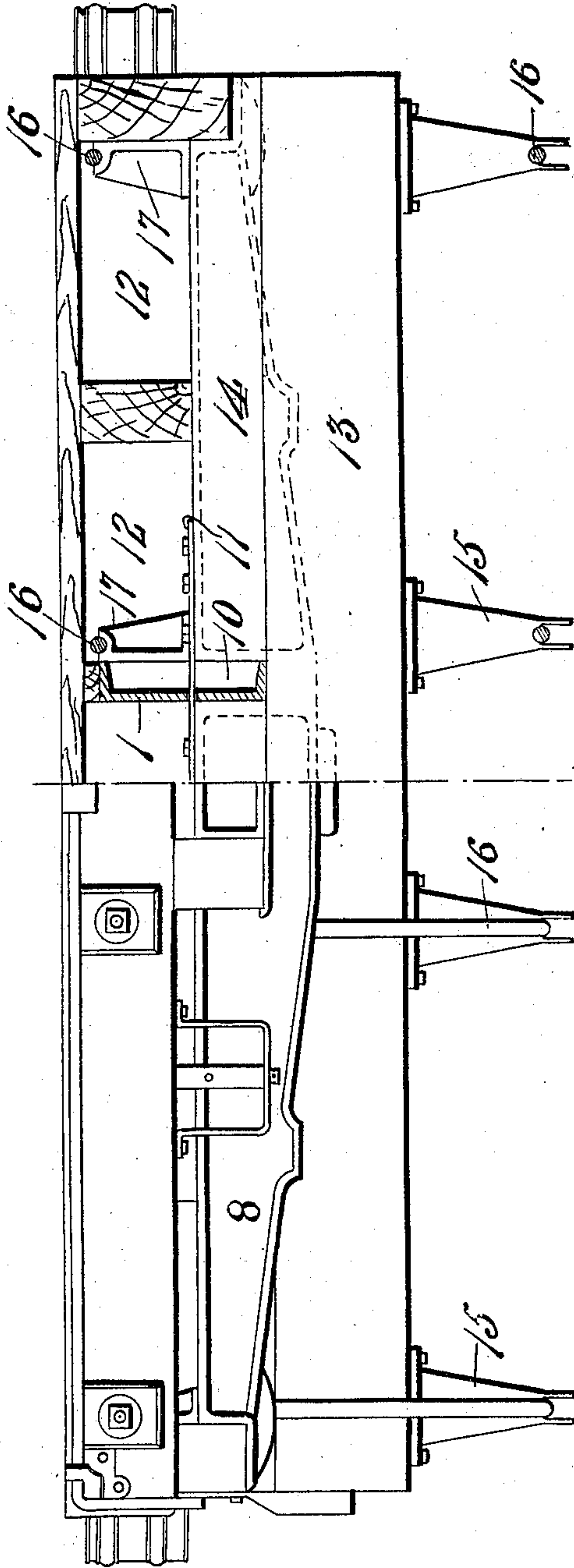


FIG. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

HOWARD CARLTON, OF ROLAND PARK, MARYLAND.

FLOOR-FRAME FOR CARS.

SPECIFICATION forming part of Letters Patent No. 746,457, dated December 8, 1903.

Application filed July 8, 1903. Serial No. 164,668. (No model.)

To all whom it may concern:

Be it known that I, HOWARD CARLTON, a citizen of the United States, residing at Roland Park, in the county of Baltimore and State of Maryland, have invented new and useful Improvements in Floor-Frames for Cars, of which the following is a specification.

My invention relates to the floor and floor-framing of railway-cars, and especially to the arrangement of the stringers and center sills, which are preferably of metal, and the combination of the latter with the body-bolster, the object being, first, the production of a floor which shall possess the requisite camber and still have the center sills on straight lines substantially from end to end and not appreciably or excessively under tension, whereby they may better withstand the strains of buffing and drawing, and, second, the provision of a deep body-bolster in connection with the center sills, the parts being so combined that the strength of neither the center sills or the body-bolster will be impaired.

With these objects and ends in view my invention consists in certain novelties of construction and combinations and arrangements of parts, as hereinafter set forth and claimed.

The accompanying drawings illustrate one example of the physical embodiment of the invention constructed according to the best mode I have so far devised for the practical application of the principle.

Figure 1 illustrates in plan view the half of the floor-framing of a car. Fig. 2 is a longitudinal section in elevation of Fig. 1, taken on a longitudinal line through the center. Fig. 3 is a half end view of Fig. 1 in elevation and a half sectional view taken on a line at the center of the floor-frame and floor. Fig. 4 illustrates the union of the channel center sills with the body-bolster. Fig. 5 shows one end of a center sill notched to receive an end sill and slotted to receive straps which unite the top flanges of the body-bolster.

Referring to the several figures, the numeral 1 designates the center sills, in this instance consisting of steel channel-beams, with their plane sides facing each other and extending from end to end of the car; 2, a notch cut in the end of each sill to receive the end sill; 3, two slots made in the center sills ap-

proximately at their neutral axes to receive straps which unite the top flanges of the body-bolster; 4, filling-strips located upon the top flanges of the steel center sills, said filling-strips increasing in depth from the ends to the center, so that the central portions are from one-half an inch to an inch thicker than at the extreme ends thereof; 5, the intermediate stringers, which in this instance are of wood and about nine inches in depth; 6, the side sills, shown in the views as approximately twelve inches in depth; 7, the end sill seated within the notched spaces 2 of the steel center sills; 8, a cast-metal body-bolster having top and bottom flanges; 9, seats at the ends of the bolster for the reception of the side sills; 10, recesses each side of the center of the bolster to receive the steel channel center sills.

11 are straps which pass through slots 3 in the steel channel-sills and are riveted or bolted to the upper flange of the body-bolster.

12 designates cross-frame tie-timbers located between the sills and stringers; 13, a needle-beam of ordinary construction; 14, intermediate filling-strips between the needle-beam and the cross-frame tie-timbers; 15, the queen-posts; 16, truss-rods extending from end to end of the car and anchored in the end sills; 17, truss-rod fulcrum-blocks, which in this case rest upon the top flange of the body-bolster, and 18 is a tie-rod which passes through the sills and stringers adjacent the cross-frame tie-timbers.

It will be observed that when in erecting the frame the truss-rods, which are provided with the ordinary turnbuckles, are tightened, the side sills and stringers are slightly cambered or "hogged," the filling-strips 14 being of sufficient depth to raise the intermediate and side sills at their centers when the top surface of the needle-beam comes in contact with the lower flanges of the center sills. The center sills are on straight lines from end to end and not under excessive tension, the tapered filling-strips on top of the center sills filling the space which would otherwise be more or less open between the top edges of the center sills and the floor. The difference between the thickness of the filling-strips at the ends and at the centers of the car of course corresponds to the camber at the cen-

ter. The needle-beam at its top surface bears against the filling-strip 14 and the lower flanges of the center sills, so that the weight of the floor and the load is equally distributed and supported by the side sills, stringers, and the center sills. The steel channel-sills are by this arrangement maintained substantially in straight lines and not cambered or under tension between the body-bolsters.

10 The union of the center sills and body-bolster is of a simple character. The center sills are not weakened, for the slots 3 3 are at the neutral axes of the beams, the upper and lower flanges or chords being preserved integral, and the body-bolster upper chord or tension member possesses ample strength by being united by the two straps, the removal of which will allow the withdrawal of the bolster without disturbing the center sills.

20 From the foregoing description, taken in connection with the drawings, it becomes clear that I have produced a car-floor and frame in which the center sills are substantially on straight lines and not under excessive tension, while the floor is cambered, and also have devised a union of a deep body-bolster with low center sills located in line with the draft-rigging, where they can take the strains of drawing and towing directly, and that this has been accomplished without weakening the said sills at their points of connection with the body-bolster.

While I have illustrated and described but one example of the physical embodiment of my invention, I do not thereby intend to limit the scope thereof to the exact features of construction, inasmuch as changes and modifications may be introduced at the will of the manufacturer without constituting substantial departures. While I have illustrated the center sills as consisting of steel channels, I may in some cases substitute therefor composite metal and wooden sills or sills entirely of wood and arrange them as set forth in the description, so that they will not be under excessive tension when the truss-rods are tightened. The construction of the body-bolster and the method of uniting the body-bolster and center sills may also be modified and a union of the parts effected without impairing the strength of the body-bolster or center sills.

What I claim as new, and desire to secure by Letters Patent, is—

55 1. The combination in a car-floor and floor-frame of center sills, side sills and stringers, the floor being cambered and the center sills being in straight lines substantially from end to end.

60 2. The combination in a floor-frame for cars of center sills, side sills and stringers, the side sills and stringers being cambered and the

center sills in substantially straight lines between the body-bolsters.

3. The combination in a car-floor and floor-frame, of side sills, stringers, and center sills consisting of steel channels; filling-strips located upon the top flanges of the channels and being of greater depth at the centers than at the ends; a needle-beam; and truss-rods; the said floor, side sills and stringers, being cambered and the center sills substantially straight in substance as set forth.

4. The combination in a car-floor frame, of side sills, center sills, and stringers; cross-frame tie-timbers; needle-beam; filling-pieces between the needle-beam and cross-frame tie-timbers; and truss-rods; the said needle-beam bearing against the lower surfaces of the center sills, which are in substantially straight lines and the side sills and stringers cambered.

5. The combination in a car-floor frame of steel channel center sills, side sills and stringers, the channel-sills being in straight lines from end to end, the side sills cambered and the floor also cambered; a needle-beam and truss-rods which are anchored in the end sills.

6. The combination in a floor-frame, of center sills; side sills; and a body-bolster; said body-bolster being recessed adjacent its central portion and the center sills located in said recesses; and straps passed through the center sills and united to the body-bolster.

7. The combination in a car-floor frame, of channel center sills; a body-bolster having top and bottom flanges; and straps; the lower edges of the center sills being located below the top flanges of the body-bolster and provided with slots through which the straps pass, and said straps secured to the upper flange of the body-bolster.

8. The combination in a car-floor frame, of a body-bolster having top and bottom flanges and a web, and recesses formed in the bolster each side of its center; channel center sills located within the recesses; and straps passed through the webs of the channel-beams and secured to the top flange of the body-bolster.

9. The combination in a car-floor frame, of a body-bolster recessed each side of its center; metallic center sills located in said recesses; straps passed through the webs of the metallic center sills and secured to the body-bolsters; side sills, needle-beams, and truss-rods; the metallic center sills being in straight lines from end to end and the floor of the car being cambered.

In testimony whereof I affix my signature in presence of two witnesses.

HOWARD CARLTON.

Witnesses:

J. EDRY HARVEY,
H. M. LUZIUS.