

No. 775,301.

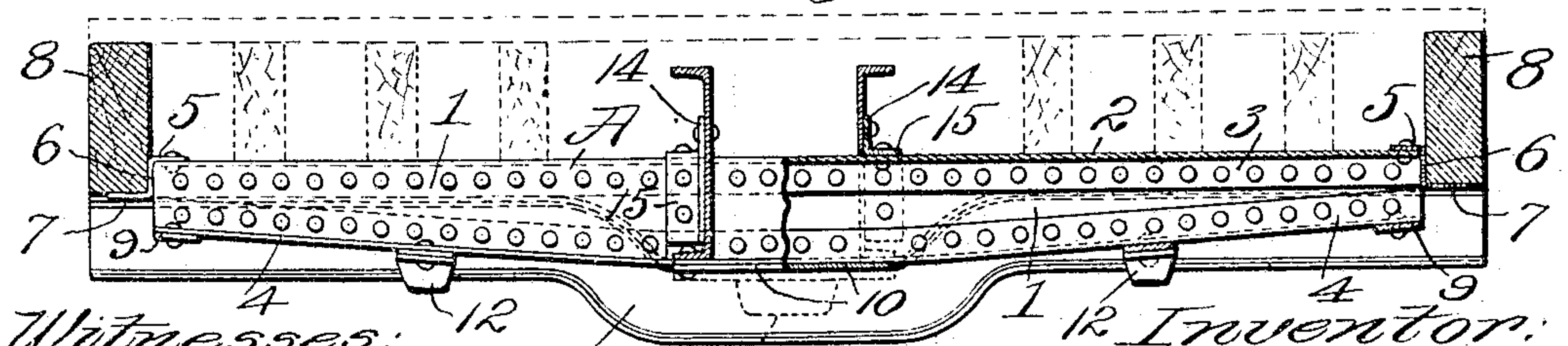
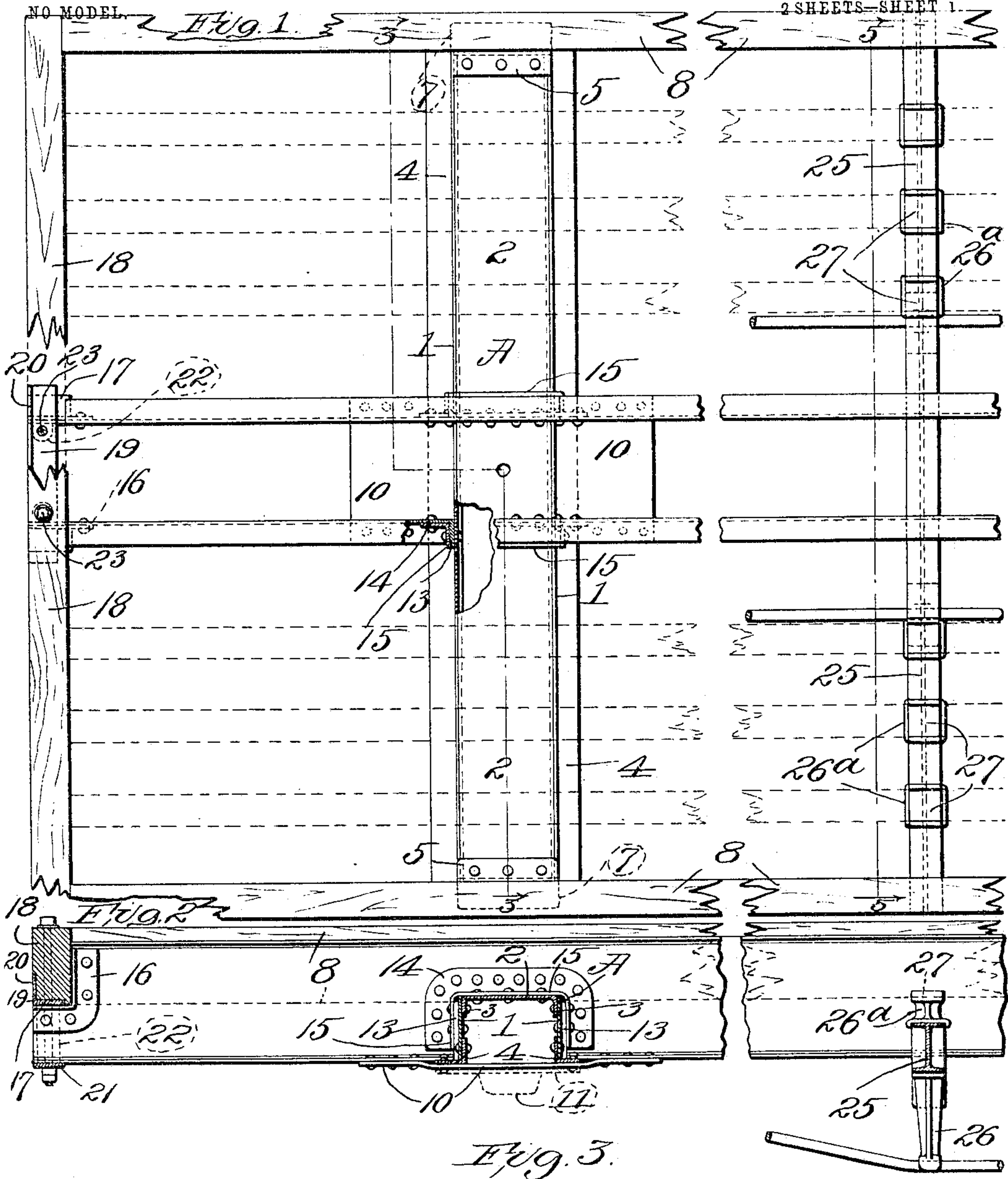
PATENTED NOV. 22, 1904.

G. I. KING.
UNDERFRAMING FOR RAILWAY CARS.

APPLICATION FILED DEC. 26, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses: *Tommy Ford*
Ralph Kalish
Inventor: *George I. King*
By *Patience Cornwall* Attys.

No. 775,301.

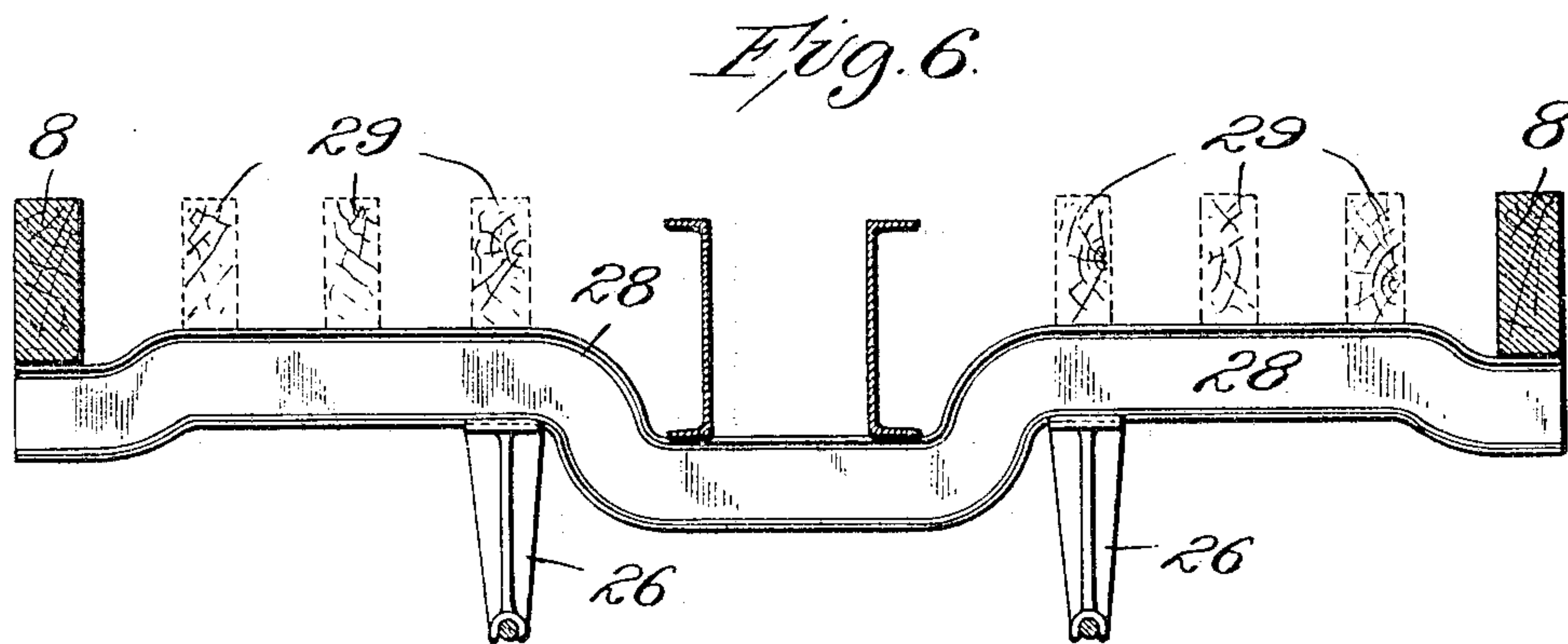
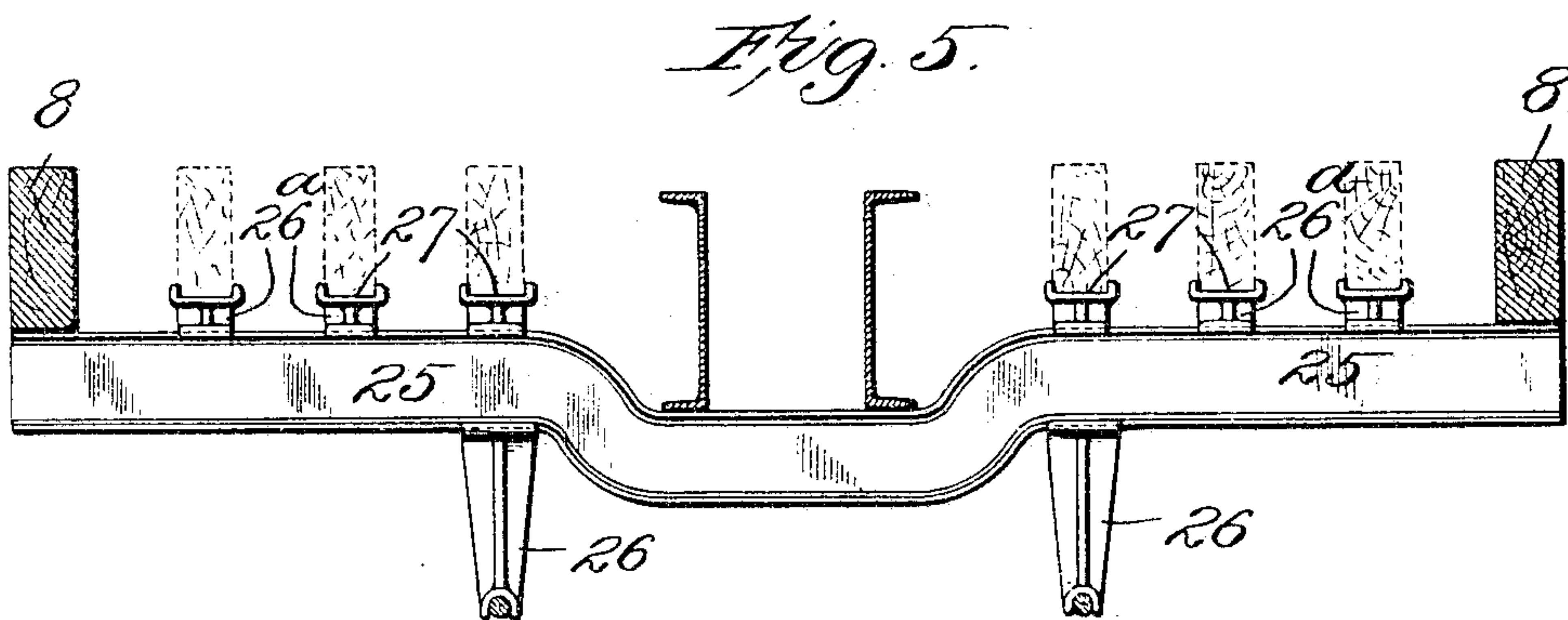
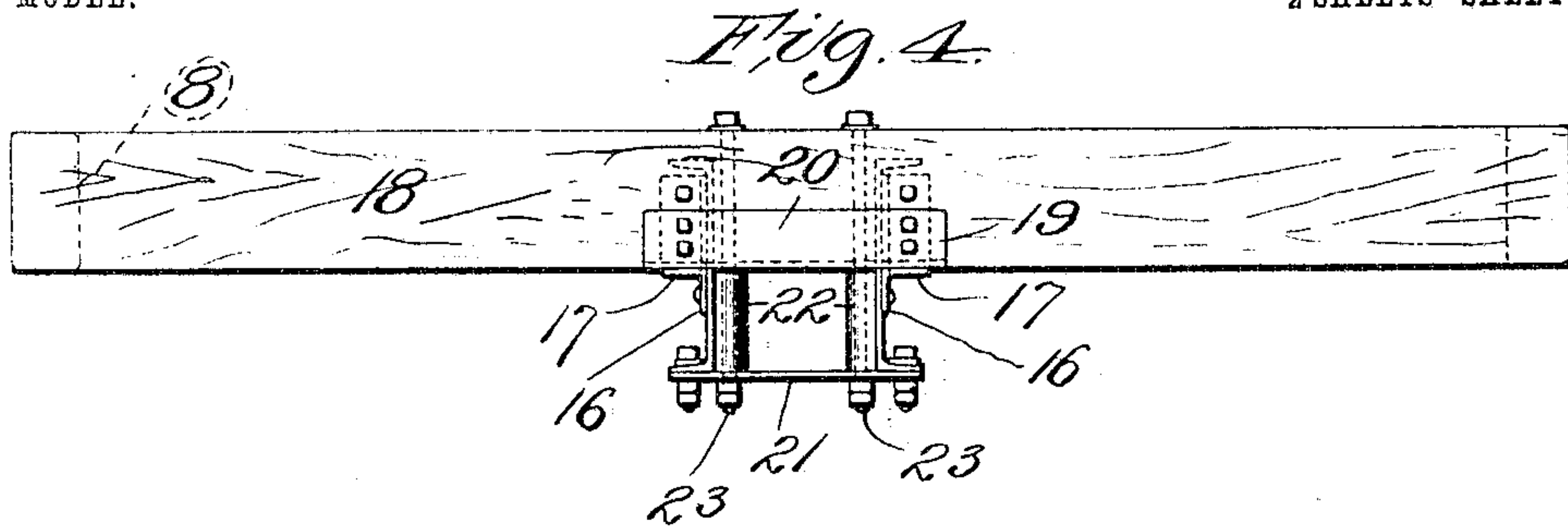
PATENTED NOV. 22, 1904.

G. I. KING.
UNDERFRAMING FOR RAILWAY CARS.

APPLICATION FILED DEC. 26, 1902.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses:
Mr. H. C. H. H.
Ralph K. H. H.

Inventor:
George I. King.
by Bakewell & Cornwall
Attys.

UNITED STATES PATENT OFFICE.

GEORGE I. KING, OF MIDDLETOWN, PENNSYLVANIA.

UNDERFRAMING FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 775,301, dated November 22, 1904.

Application filed December 26, 1902. Serial No. 136,705. (No model.)

To all whom it may concern:

Be it known that I, GEORGE I. KING, a citizen of the United States, residing at Middletown, Dauphin county, State of Pennsylvania, have invented a certain new and useful Improvement in Underframing for Railway-Cars, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of one end of a car-frame. Fig. 2 is a side elevational view of the same, partly broken away. Fig. 3 is a transverse sectional view on the line 3 3 of Fig. 1, partly broken away at one side. Fig. 4 is an end view. Fig. 5 is a transverse section on the line 5 5 of Fig. 1, and Fig. 6 is a view similar to Fig. 5 of another construction in slight details hereinafter specified.

This invention consists in new and improved underframing for railway-cars and comprises certain features of novelty in the construction thereof, all as will be hereinafter more fully described, and specifically pointed out in the claims.

The object of the invention is to produce a strong, durable, and compact underframing which may be easily assembled and which will possess desirable features not heretofore attained in this class of inventions.

Referring to the drawings, A is the transom or body-bolster, which is formed of side members 1, consisting of continuous webs extending from end to end. 2 is the cover-plate of said transom, which is formed of a channel with its flanges 3 turned downwardly between the side members 1, through which flanges and said side members pass rivets for securing the same together. The lower edges of the side plates 1 rest upon the horizontal flanges of angles 4, the vertical flanges of which are riveted to said side plates. At the ends of the transom are Z-bars, the upper horizontal legs 5 of which are riveted to the cover-plate of said transom. The vertical portion 6 of said Z-bars form partial closures for the otherwise open ends of the transoms, and the lower horizontal legs 7 extend outwardly, whereby seats

are formed upon which rest the wooden side sills 8 of the underframe. Secured to the under side of said transoms at points near their end portions are tie-plates 9, and a lower cover-plate 10 is secured to the flanges 4 of said transoms and to the lower flanges of the center sills, said plate extending for some distance at each side of said transom and having at its lower side the usual center bearing-plate 11 and at each side of its center the side bearing-brackets 12.

The center sills are provided on their under side with recesses, while filler-blocks 13 are interposed between said center sills and the transoms, as best shown in Fig. 2. Brackets extend substantially entirely around said recesses from the flanges of the center sills. They are secured through the flange 14 to the center sill and through the flange 15 to the transom, the rivets at one portion passing through the said filler-blocks and the side members of said transoms. At their ends the center sills are cut away angularly, as shown in Fig. 2, at which point flanged brackets are connected to said center sills through the flanges 16, the flanges 17 of said brackets forming seats in which rest the wood end sills 18, an angle 19 resting with its horizontal leg on said seat below said sill 18 and having a vertical leg 20 extending upwardly, where it serves as a facing for the lower portion of said end sill. Below the center sills is a carry-iron 21, between which and the lower side of said angle 19 are the posts 22, through which pass the bolts 23, serving to hold the parts together, said posts serving as filler-blocks to reduce the space between the center sills to the size required for the draw-bar, &c.

Between the transoms are, as usual, floor-beams and truss-rod beams, the latter being illustrated in Figs. 5 and 6, which beams are especially applicable to cars built with underframing of the type herein shown, in which the central portion is bent downwardly beneath the center sills and extends outwardly in somewhat higher plane below the side sills and intermediate sills. In the types of truss-rod beams herewith shown the main portion thereof is formed of commercially-rolled I-beams 25, to the lower flanges of which are se-

cured the queen-posts 26. The truss-rod beam of Fig. 5 has its body portion formed of an I-beam extending inwardly toward the center sills on substantially a straight line, near which sills it is curved downwardly under the same at its middle portion. Upon the upper face of said I-beam are secured filler-blocks 26^a, which straddle the upper portion thereof and have seats 27 formed in their upper face for the intermediate sills. The object of said filler-blocks is to permit of using shallow intermediate sills with relatively deeper side sills, which in this case are shown to be of wood. In the structure shown in Fig. 6 the deep center sills are used with relatively less deep side sills and shallow intermediate sills, the latter resting directly upon the upper face of the truss-rod beam without the interposed filler-blocks of Fig. 5. In order to permit the use of the I-beam 28 without using the filler-blocks, the said member is provided with the downwardly-curved portion underneath the center sills, from which, extending outwardly, is a straight horizontal portion which supports the intermediate sills 29, beyond which the end portions are turned downwardly and outwardly again horizontally to form supports for the side sills, the last-mentioned horizontal portions being in a plane between the plane of the center sills and the intermediate sills.

It will be noted that the type of transom end sills and truss-rod beams herewith shown and described are peculiarly well adapted to a construction of underframing in which is used deep center sills of metal formed with recesses for the said transoms and end sills and that truss-rod beams passing thereunder serve as supports for the middle portion of said center sills, while the queen-posts, being only two in number on each truss-rod beam, are so located as to be within the track-space sufficiently far to permit clearing obstacles sometimes found in the vicinity of railway-tracks. In a great many cases, particularly in box-car construction, the sills will preferably be of the same depth, in which case the transom should extend through to the outside of the side sills, and the Z-bar bracket will not be required, nor will the filler-blocks 26^a be necessary.

I am aware that minor changes in the construction, arrangement, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

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

1. In an underframing, a center sill with recesses in its end for end sills, recesses in its lower face for transoms and an angle-bracket riveted to the webs of said center sill and adapted to partially inclose the end sill and said transoms; substantially as described.

2. In an underframing, a center sill with recesses in its upper face for end sills and recesses in its lower face for transoms, the horizontal lines of said recesses being substantially in the same horizontal plane and angle-brackets separately formed, and riveted to the web of said center-sill, said brackets partially inclosing said end sills and said transoms; substantially as described.

3. In an underframing, a center sill recessed for end sills, and an angle separately formed and riveted to said center sill in such position that the laterally-projecting member of said angle is adapted to form supporting means for said end sill; substantially as described.

4. In an underframing, a center sill recessed for end sills, and an angle-bracket separately formed, and secured to said center sill in such position that the laterally-projecting member of said angle is adapted to form means for preventing inward movement of said end sills against the webs of said center sills; substantially as described.

5. In an underframing, a center sill recessed for end sills, an end sill resting in said recess, and an angle separately formed and riveted to said sill with its horizontal leg extending from a point near the end of said center sill inwardly, the vertical leg thereof forming a facing for said end sill; substantially as described.

6. In an underframing, a center sill recessed for end sills, angles forming seats for said end sills, oppositely-disposed angles resting on the first-mentioned angles, and end sills resting upon said angles; substantially as described.

7. In an underframing, a center sill provided with recesses in its lower portion forming transom-pockets, and transoms therein whose body portion terminates at the inner sides of the side sills; substantially as described.

8. In an underframing, center sills, transom-pockets, therein, angles about said pockets, transoms in said pockets, including a channel tension member, and relatively shallow side sills connected with said transoms; substantially as described.

9. In an underframing provided with relatively deep center sills, transom-pockets therein, angles connected to the webs of said center sills, about said pockets, and to said transoms, and relatively shallow side sills connected with said transoms; substantially as described.

10. In an underframing provided with relatively deep center sills with oppositely-disposed flanges, transom-pockets therein, transoms in said pockets extending only to side sills, side-sill supports connected with said transoms, and side sills thereon; substantially as described.

11. In an underframing, center sills provided with transom-pockets, transoms therein connected with said center sills, relatively shallow

low side sills beyond the ends of said transoms, and interposed Z-bars forming supports for said side sills; substantially as described.

12. In an underframing, a pair of relatively deep center sills with transom-pockets therein, transoms in said pockets, truss-rod beams between said transoms, the middle portions of said truss-rod beams extending below the same, and truss-rods coöperating therewith; substantially as described.

13. In an underframing, a pair of relatively deep center sills, transoms connected therewith through suitable angles, relatively shallow side beams supported at the ends of the body portion of said transoms, truss-rod beams serving as supports for the middle portion of said sills, and truss-rods coöperating therewith; substantially as described.

14. In an underframing, a pair of center sills with transom-pockets therein, transoms in said pockets, and a bottom cover-plate for said transoms connected thereto, and to said center sills; substantially as described.

15. In an underframing, center sills provided with pockets therein, transoms in said pockets, and a bottom cover-plate connected to said center sills, said cover-plate extending for some distance each side of said transoms longitudinally of the center sills; substantially as described.

16. In an underframing, center sills recessed for transoms, and transoms having a channel tension member therein rigidly connected to said center sills and extending laterally therebeyond to form supports for the longitudinal sills of the car; substantially as described.

17. In an underframing, center sills recessed for transoms, and transoms having a channel tension member therein rigidly connected to said center sills by brackets surrounding a portion thereof and extending laterally therebeyond to form supports for the longitudinal sills of the car; substantially as described.

18. In an underframing, center sills recessed for transoms, and transoms therein rigidly connected to said center sills by brackets surrounding the upper portion of said transoms, and extending laterally therebeyond to form supports for the longitudinal sills of the car; substantially as described.

19. In an underframing, center sills recessed for transoms, and transoms therein rigidly connected to said center sills by brackets substantially surrounding the same in line with said center sills and extending laterally therebeyond to form supports for the longitudinal sills of the car; substantially as described.

20. In an underframing, a transom, a channel tension-bar with downwardly-projecting flanges, web-plates deeper at the middle portion of said transom and riveted to the flanges of said channel, angles extending longitudinally of said web-plates, and a plate secured thereto and to the center sills; substantially as described.

21. In an underframing, a transom, a channel tension-bar with downwardly-projecting flanges, web-plates deeper at the middle portion of said transom and riveted to the outer face of the flanges of said channel, angles extending longitudinally of said web-plates, and a plate secured thereto and to the center sills; substantially as described.

22. In an underframing, a transom, a channel tension-bar with downwardly-projecting flanges, web-plates deeper at the middle portion of said transom and riveted to the flanges of said channel, angles extending longitudinally of said web-plates, and a plate secured thereto and to the center sills, said plate extending longitudinally of the center sills at each side of the transom; substantially as described.

23. In an underframing, a transom, a channel tension-bar with downwardly-projecting flanges, web-plates deeper at the middle portion of said transom and riveted to the flanges of said channel, angles extending longitudinally of said web-plates along the lower edges thereof, and a plate secured thereto and to the center sills; substantially as described.

24. In an underframing, a transom, a channel tension-bar with downwardly-projecting flanges, web-plates deeper at the middle portion of said transom and riveted to the flanges of said channel, angles extending longitudinally of said web-plates along the lower edges thereof, and a plate secured thereto and to the center sills, the vertical member thereof being located between said web-plates; substantially as described.

25. A bolster, the sides of which are composed of plates and angles, the top of a channel, and the bottom of a plate, all riveted together.

26. A bolster, having sides provided with bottom flanges, a bottom plate riveted to said flanges, and a top made as a channel arranged between the sides, flanges down, and riveted to the sides.

27. A metallic bolster for railway-cars comprising side members and a flanged top-tying member bridging the space between said side members, and not higher than the tops of the car-sills, substantially as specified.

28. A metallic bolster for railway-cars comprising flanged side members and a flanged top member bridging the space between said side members and not higher than the tops of the car-sills, substantially as specified.

29. A metallic bolster for railway-cars comprising side members and a top-tying member extending from end to end of the bolster and inserted between said side members and not higher than the tops of the same, substantially as specified.

30. A metallic bolster for railway-cars comprising flanged side members and a top-tying member extending from end to end of the bolster and inserted between said side mem-

bers and not higher than the tops of the same, substantially as specified.

31. A metallic bolster for railway-cars comprising side members and a flanged top member extending from end to end of the bolster and inserted between said side members, and not higher than the tops of the same, substantially as specified.

32. A metallic bolster for railway-cars comprising flanged side members and a flanged top member extending from end to end of the bolster and inserted between said side members and not higher than the tops of the same, substantially as specified.

33. Underframing for cars comprising, in combination, longitudinal metal sills recessed in their lower faces, a metal bolster located within the sill-recesses, and a plate secured to the lower faces of the sills and crossing their recesses.

34. Underframing for cars comprising, in combination, longitudinal metal sills recessed in their lower faces, a metal bolster located within the sill-recesses, and plates secured to the side and lower faces of the sills respectively and crossing their recesses.

35. In the underframing for cars, in combination, a pair of longitudinal metal sills recessed from above at their ends, an end sill fitted to such recesses, and angle-plates secured to the side faces of the longitudinal sills and to the lower and rearward faces of the end sill.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 17th day of December, 1902.

GEORGE I. KING.

Witnesses:

WM. A. CROLL,
JOHN H. FRANK.