

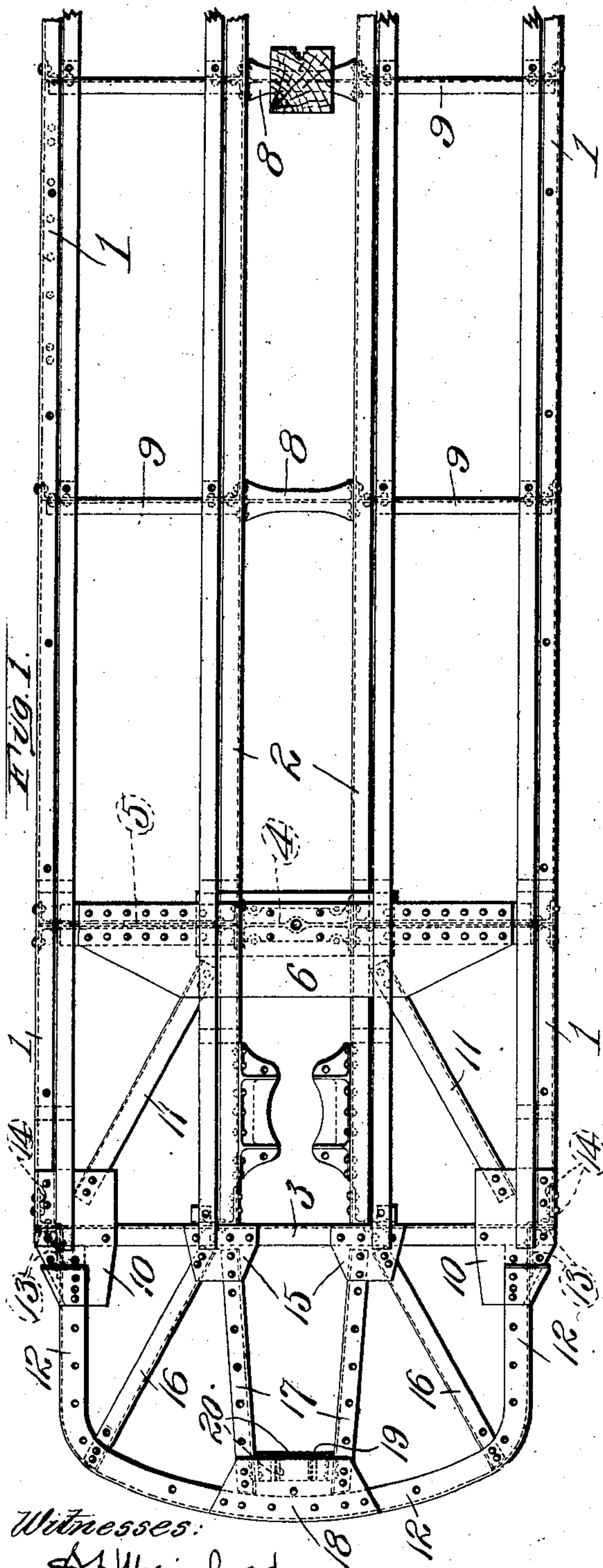
No. 746,340.

PATENTED DEC. 8, 1903.

G. I. KING & J. H. FRANK.
UNDERFRAMING FOR RAILWAY CARS.
APPLICATION FILED SEPT. 19, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

G. H. Weisbrod
Wm. H. Ford

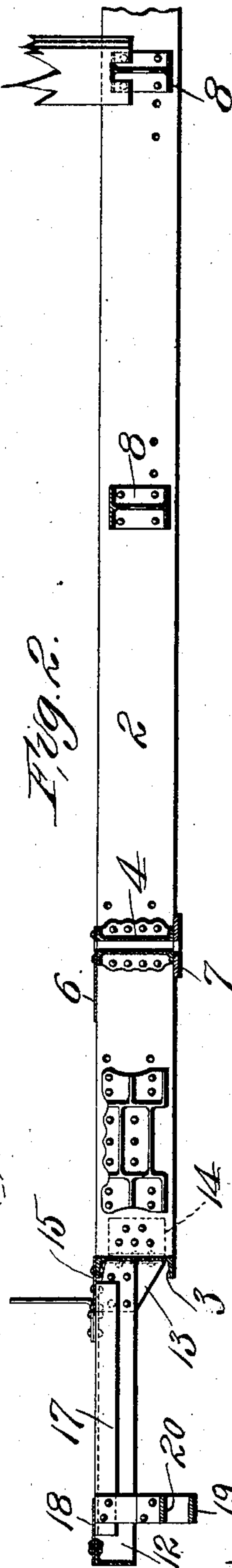


Fig. 2.

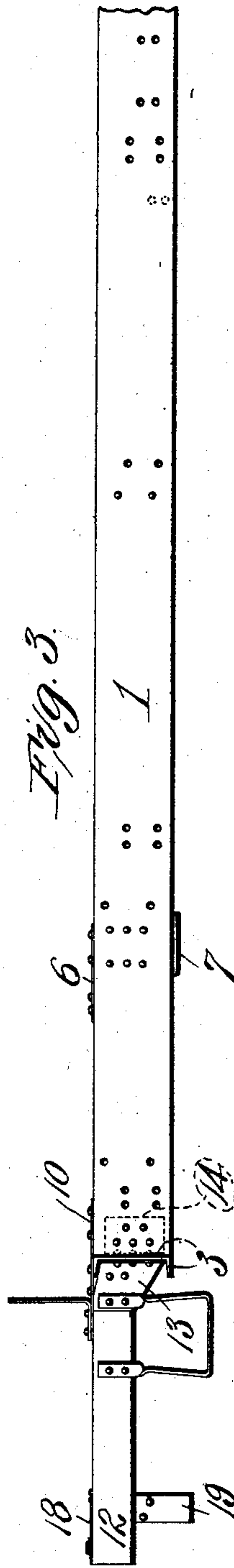


Fig. 3.

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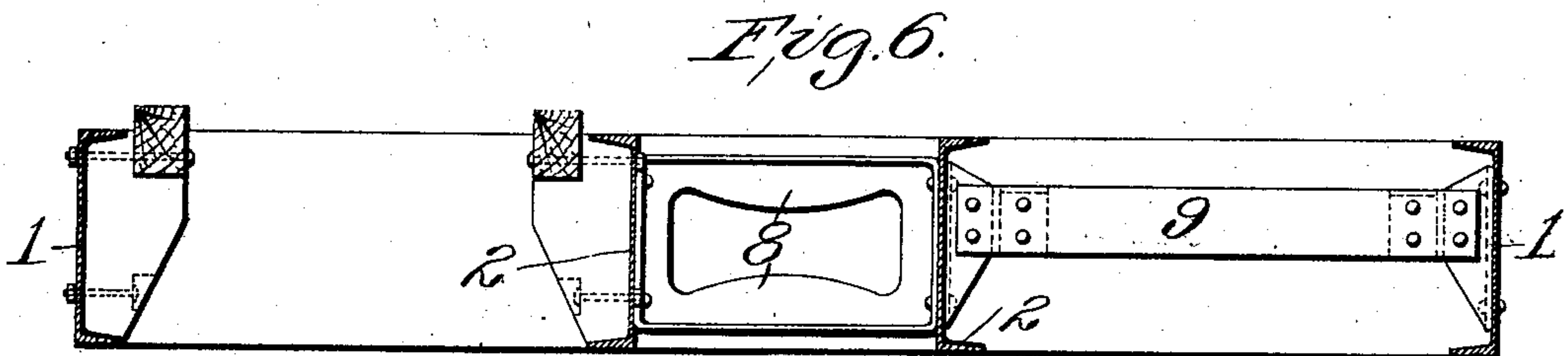
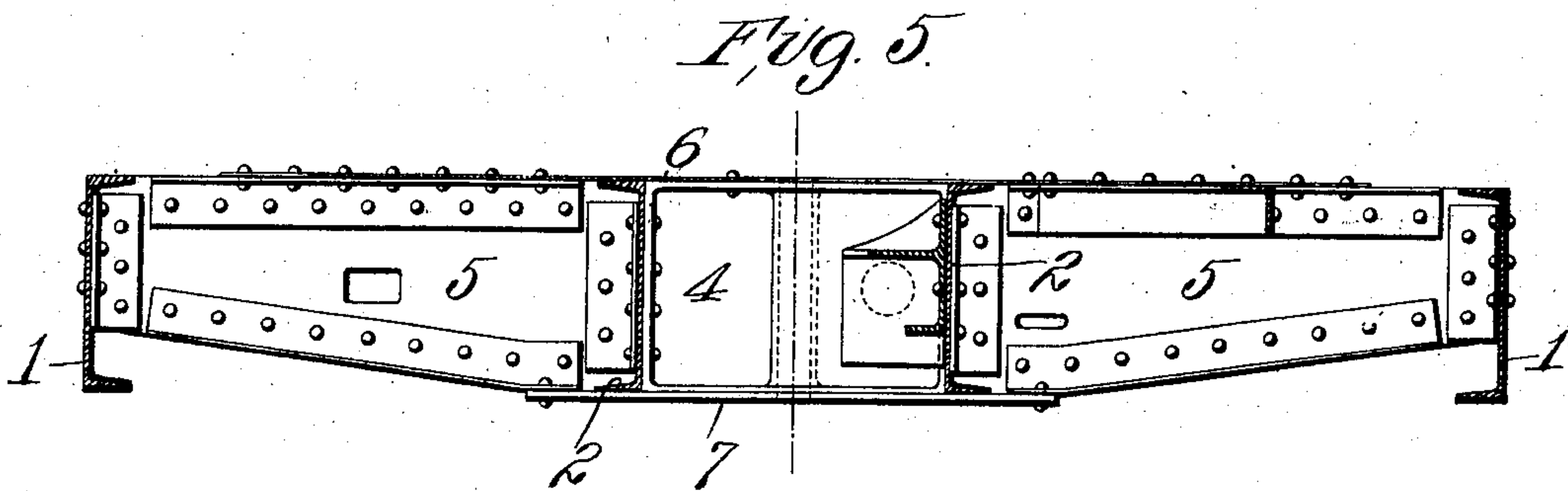
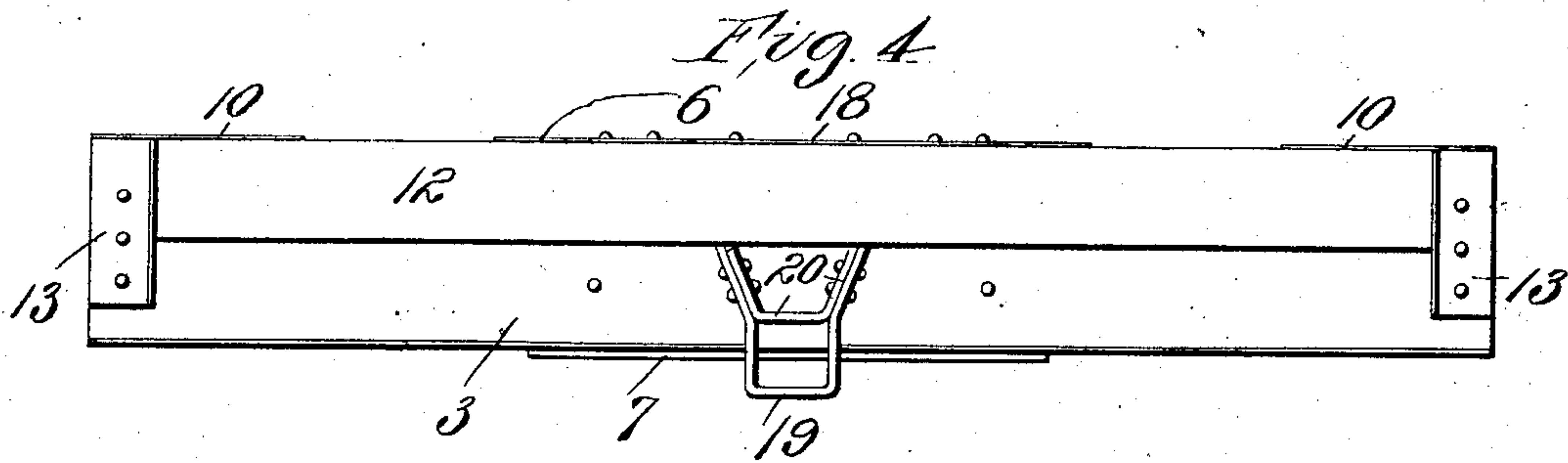
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UNITED STATES PATENT OFFICE.

GEORGE I. KING AND JOHN H. FRANK, OF MIDDLETOWN, PENNSYLVANIA,
ASSIGNORS TO MIDDLETOWN CAR WORKS, OF BOROUGH OF MIDDLE-
TOWN, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

UNDERFRAMING FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 746,340, dated December 8, 1903.

Application filed September 19, 1903. Serial No. 173,852. (No model.)

To all whom it may concern:

Be it known that we, GEORGE I. KING and JOHN H. FRANK, citizens of the United States, residing at Middletown, Pennsylvania, have
5 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
10 use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of our improved underframe. Fig. 2 is a longitudinal sectional
15 view. Fig. 3 is a side elevational view. Fig. 4 is a front elevational view. Fig. 5 is a cross-sectional view of one side of the bolster, and Fig. 6 is a cross-sectional view of one side of the intermediate floor-support.

20 This invention relates to a new and useful improvement in underframes for railway-cars, being designed particularly for use in connection with street-railway cars of that type wherein there is a platform at each end
25 of the body.

The objects of the invention are to simplify the construction of underframes of this character and to produce a strong and durable underframe which may be used with various
30 types of cars and which is peculiarly adapted for street-cars.

In the drawings, 1 indicates the side sills, which are preferably in the form of channels, with their flanges presented inwardly.
35 2 indicates the center sills, preferably in the form of channels, with their flanges presented outwardly. 3 is the end sill in the form of a channel whose flanges are presented outwardly. All of these sills may be of the same
40 vertical height.

The bolster or transom consists of a filler-block 4, which may be a casting, with an appropriate opening for the king-bolt, and side web members 5, secured to the side and center sills by appropriate connections and to
45 top and bottom cover-plates 6 and 7 by angle-irons arranged on each side and at the top and bottom edges thereof.

8 indicates spacing-blocks between the center sills, which are preferably of pressed steel,
50

although malleable castings may be employed, and 9 indicates angles lying in the transverse planes of the blocks 8, which angles serve as tie-rods and also afford supports for the longitudinal wooden sills or furring-
55 strips.

10 indicates connection-plates at the corners of the underframe, to which are riveted oblique braces 11, whose inner ends are secured to the top cover-plate of the bolster.
60 These connection-plates 10 extend beyond the end sill and have attached thereto the ends of a bent platform-sill 12, which is preferably in the form of an angle, with its horizontal flange presented inwardly. The ends
65 of this platform-sill in addition to being riveted to the connection-plates 10 are also secured to corner connection-angles 13, which in turn are riveted to the end sill, the rivets which are employed for securing these corner
70 connection-plates to the web of the end sill also serving to attach one leg of a corner connection-angle 14 at the junction of the end sill and side sill. Connection-plates 15 are employed at points intermediate the ends of
75 the end sill, to which are secured oblique braces 16, diverging outwardly to the curved corner portions of the platform-sill, while braces 17 converge at their outer ends and are secured to a connection-plate 18, riveted ap-
80 proximately at the central portion of the platform-sill. The braces 16 and 17 are preferably in the form of angles, the latter supporting at their outer ends a carry-arm 19 for the draw-bar. This carry-arm has up-
85 wardly-flaring side members, between which is riveted a U-shaped spacing-block 20.

We have not deemed it necessary herein to show any portion of the body of the car, the abutment-angles for the wooden end sill filler,
90 nor step-irons, as they may be constructed and arranged according to the tastes of the builder.

From our improved construction it will be observed that the underframe is made up,
95 essentially, of commercially-rolled material, the platform-underframe being applied in position practically as a separate feature, the only elements common to the main underframing and platform-underframing being the
100

connection-plates, which project outwardly beyond the end sill, to which the members of the platform-underframing are riveted, and the rivets which secure the corner connection-angles at the ends of the end sill in position. By the arrangement of these corner connection-angles the platform-sill is inset with respect to the side walls of the main underframing, which is desirable.

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

15 Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. The combination with a main underframing for cars, of a platform-underframing comprising a curved or bent sill having its ends connected to the main underframing, and braces for said curved sill; substantially as described.

25 2. The combination with a main underframing for cars, of a platform-underframing comprising a curved or bent angle whose ends are connected to the corners of the main underframing and set in with respect to the side members of said main underframing, and obliquely-disposed angles for bracing said platform-sills; substantially as described.

30 3. The combination with a main underframing for cars, of corner connection-plates therefor which extend outwardly beyond the end sill, and a platform-underframing having a curved sill whose ends are connected to said corner connection-plates; substantially as described.

40 4. The combination with a main underframing for cars, of a platform-underframing whose side members are riveted to the corner con-

nection-plates of the main underframing and to corner connection-angles whereby said side members of the platform-underframing are set in with respect to the side members of the main underframing; substantially as described.

5. The combination with a main underframing for cars, of connection-plates at and between the ends of the end sill, which connection-plates extend outwardly, a platform-underframing comprising a curved sill whose ends are bent and connected to the corner connection-plates, and obliquely-disposed braces connected to said curved sill and to said connection-plates intermediate the ends of the end sill; substantially as described.

6. The combination with a main underframing for cars, of a platform-underframing comprising a curved sill having its ends connected to the corners of the main underframing, obliquely-disposed braces for said curved sill, and a reinforced carry-arm depending from said braces; substantially as described.

7. The combination with a main underframing for cars, of a platform-underframing connected only to the end sill and to connection-plates carried by the end sill; substantially as described.

8. The combination with a main underframing including an end sill, of connection plates and angles attached to said end sill, and a platform-underframing attached to said connection plates and angles; substantially as described.

In testimony whereof we hereunto affix our signatures, in the presence of two witnesses, this 9th day of September, 1903.

GEORGE I. KING.
JOHN H. FRANK.

Witnesses:

C. G. CAMPBELL,
WM. A. CROLL.