No. 759,290. PATENTED MAY 10, 1904.

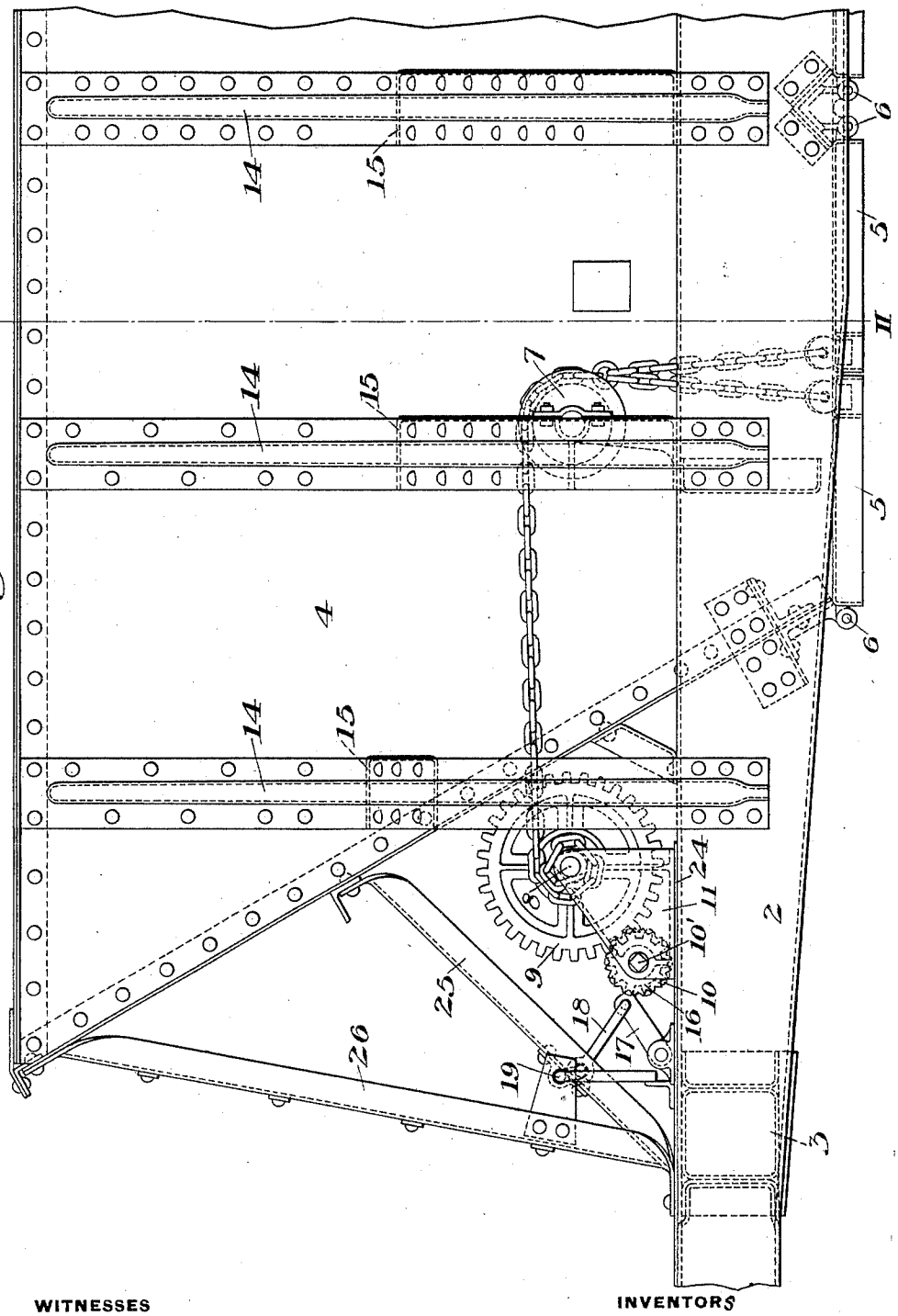
C. A. LINDSTRÖM & J. F. STREIB.

CAR.

APPLICATION FILED JULY 22, 1903.

NO MODEL. 3 SHEETS—SHEET 1

Fig. 1.



WITNESSES

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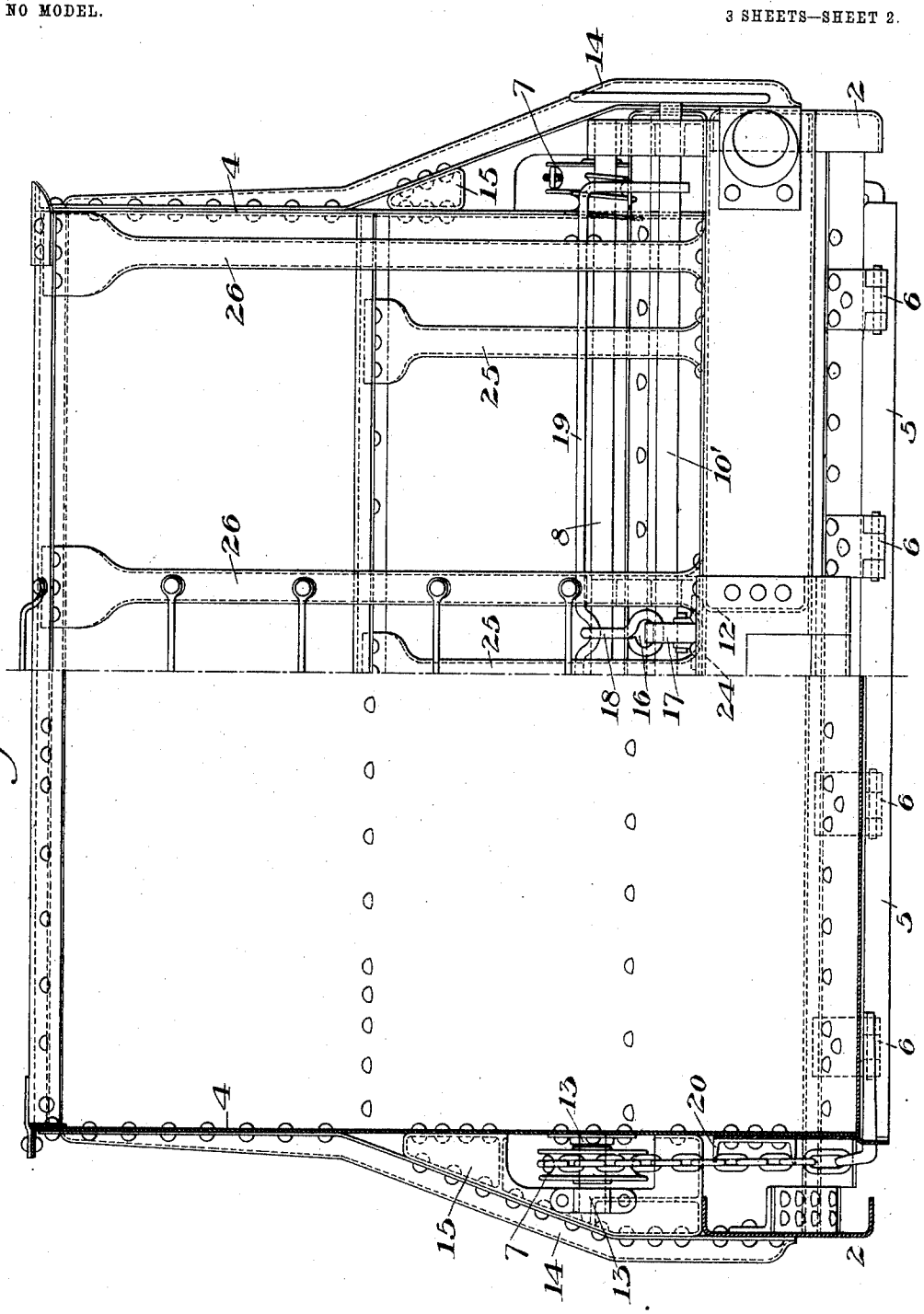


Fig. 2.

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APPLICATION FILED JULY 22, 1903.

NO MODEL. 3 SHEETS—SHEET 3.

Fig. 3.

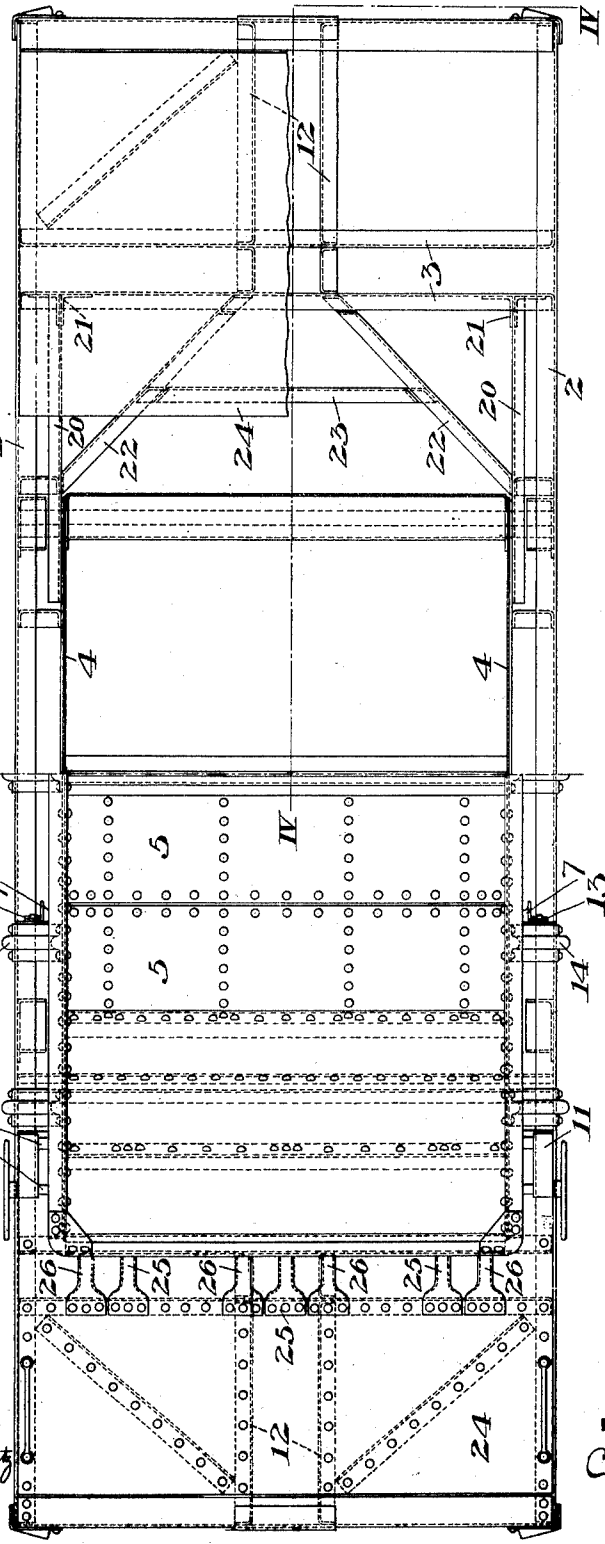
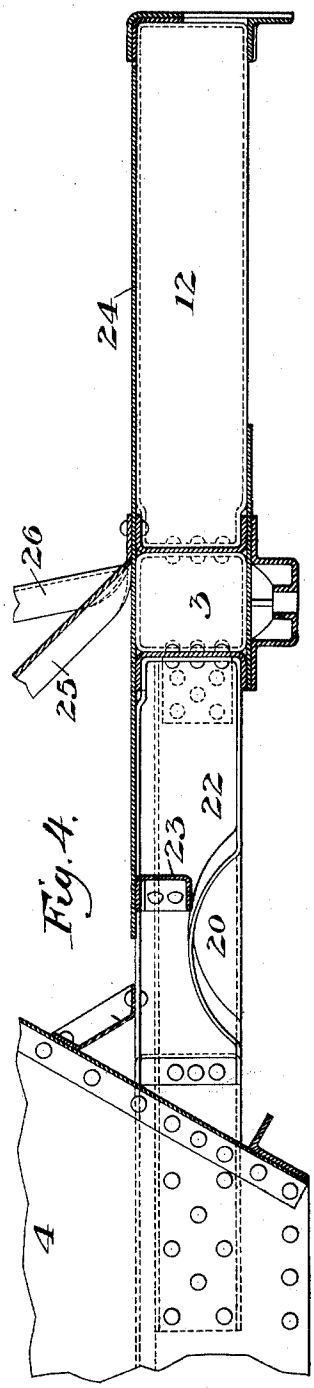


Fig. 4.



WITNESSES

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No. 759,290. Patented May 10, 1904.

UNITED STATES PATENT OFFICE.

CHARLES A. LINDSTRÖM, OF ALLEGHENY, AND JOHN F. STREIB, OF AVALON, PENNSYLVANIA, ASSIGNORS TO PRESSED STEEL CAR COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

CAR.

SPECIFICATION forming part of Letters Patent No. 759,290, dated May 10, 1904.

Application filed July 22, 1903. Serial No. 166,539. (No model.)

To all whom it may concern:

Be it known that we, CHARLES A. LINDSTRÖM, of Allegheny, and JOHN F. STREIB, of Avalon, Allegheny county, Pennsylvania, have invented a new and useful Car, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 shows in side elevation the end portion of a hopper-car provided with our improvement. Fig. 2 is an end view, one half of which is shown in elevation and the other half in vertical section on the line II II of Fig. 1. Fig. 3 is a plan view, the hopper and floor-sheets being removed from one-half of the car to better illustrate the construction; and Fig. 4 is a longitudinal central section of one end of the car on the line IV IV of Fig. 3.

In the drawings, 2 2 are the side sills of the car, and 3 is the bolster.

4 4 are the sides of the hopper, made of metal plates extending wholly within the vertical plane of the side sills and preferably perpendicularly, or nearly so, so that vertical side surfaces are afforded which impart a maximum capacity to the car and do not obstruct the discharge of the contents.

5 5 are doors at the bottom of the car, hinged at 6 6 and provided with lifting-chains which extend over guide-pulleys 7 to a chain-shaft 8, on which is a gear-wheel 9 in gear with a pinion 10, preferably of smaller diameter. The shaft 8 is journaled in brackets 11, set on the floor-plate 24, which covers the side sills 2 2 and draft-sills 12 12. The guide-pulleys 7 are journaled in bearings 13, set on one side against the side of the hopper and on the other side on the stakes 14, which extend outwardly from the side of the hopper and are connected thereto by diaphragms or distance-pieces 15, which also, in conjunction with the stakes 14, form a connection between the hopper and the side sills 2 2 and transfer the strains to the sills.

The pinion 10 is rotated by a crank applied to the squared end of its shaft 10′ and is locked by a ratchet-wheel 16, keyed to the shaft and having a pawl 17 operated by a link connection 18 from a crank-shaft 19, which extends across the car and can be operated at either side.

20 20 are beams, preferably channel-beams, which are fixed to the sides of the hopper near the ends and extend forwardly to the bolster 3, to which they are fixed, preferably by angle-pieces 21. Diagonal braces 22, which may be channel-beams, extend from beams 20 at the corners of the hopper obliquely forward to the middle portion of the bolster and are preferably connected by a cross-beam 23 and by a floor-plate 24, which extends forward to the end sill and is riveted to the bolster and to the beams 20 and 22 and to the draft-sills 12. This plate need not be continuous, but may be in sections. It forms the top member of the bolster and affords a very stiff and strong construction for the end of the car, preventing buckling of the bolster, holding the hopper in place through the braces 25 and 26, and distributing the strains in an effective manner.

At the ends of the hopper are diagonal braces 25, which extend obliquely from the bolster to the middle portion of the end of the hopper, and other braces 26 extend from the bolster to the top of the hopper.

Within the scope of our invention as defined in the claims the construction may be modified, since

What we claim is—

1. A hopper-car having side sills, vertical sides wholly within the vertical planes of the side sills and laterally removed from said sills, and means for indirectly securing said sides to said sills; substantially as described.

2. A hopper-car having side sills, body-bolsters and end sills and a body with vertical sides and sloping ends, said body being wholly within the vertical plane of the side sills and laterally removed from said sills, and means for indirectly securing said sides to said sills; substantially as described.

3. A car having side sills, vertical sides located within and laterally removed from said sills, and stakes extending downwardly and

outwardly from the vertical sides of the car to the sills; substantially as described.

4. A car having side sills, stakes extending downwardly and outwardly from the sides of the car to the sills, and intermediate distance-pieces between the stakes and the sides of the car; substantially as described.

5. A car having side sills, stakes extending downwardly and outwardly from the sides of the car to the sills, and door-opening mechanism set in the space between the stake and the side of the car; substantially as described.

6. A car having side sills, stakes extending downwardly and outwardly from the sides of the car to the sills, and a guide-pulley journaled in the space between the stake and the side of the car; substantially as described.

7. A hopper-car having a bolster, side beams extending from the sides of the hopper to the bolster near the ends of the latter, and diagonal beams extending to the middle portion of the bolster; substantially as described.

8. A hopper-car having a bolster, side beams extending from the sides of the hopper to the bolster near the ends of the latter, diagonal beams extending to the middle portion of the bolster, and a cross-beam connecting said diagonal beams; substantially as described.

9. A hopper-car having a bolster, side beams extending from the sides of the hopper to the bolster near the ends of the latter, diagonal beams extending to the middle portion of the bolster, and a floor-plate connecting the side beams; substantially as described.

10. A hopper-car having an inclined end, diagonal braces extending from the middle portion of the end of the hopper to the bolster, and other braces extending from the top of the hopper to the bolster; substantially as described.

11. A hopper-car having a bolster, side beams extending from the sides of the hopper to the bolster near the ends of the latter, diagonal beams extending to the middle portion of the bolster, and a floor-plate connecting the side beams and fixed to the bolster, side sills, draft-sills, end sills and braces; substantially as described.

In testimony whereof we have hereunto set our hands.

CHARLES A. LINDSTRÖM.
JOHN F. STREIB.

Witnesses:
L. M. REDMAN,
H. M. CORWIN.