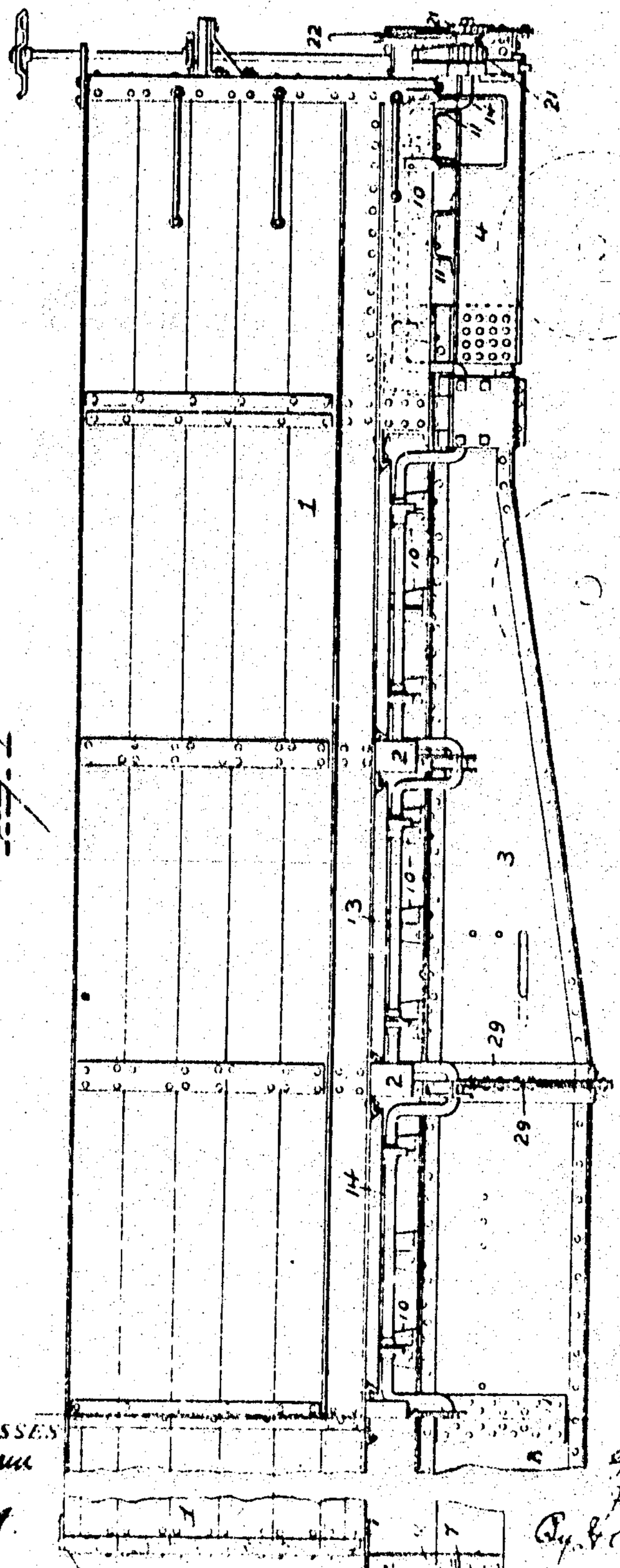
No. 861,464. PATENTED JULY 30, 1907.

F. L. IRWIN & J. E. TESSEYMAN.

DUMPING CAR.

APPLICATION FILED MAR. 5, 1907.

7 SHEETS—SHEET 1.



WITNESSES

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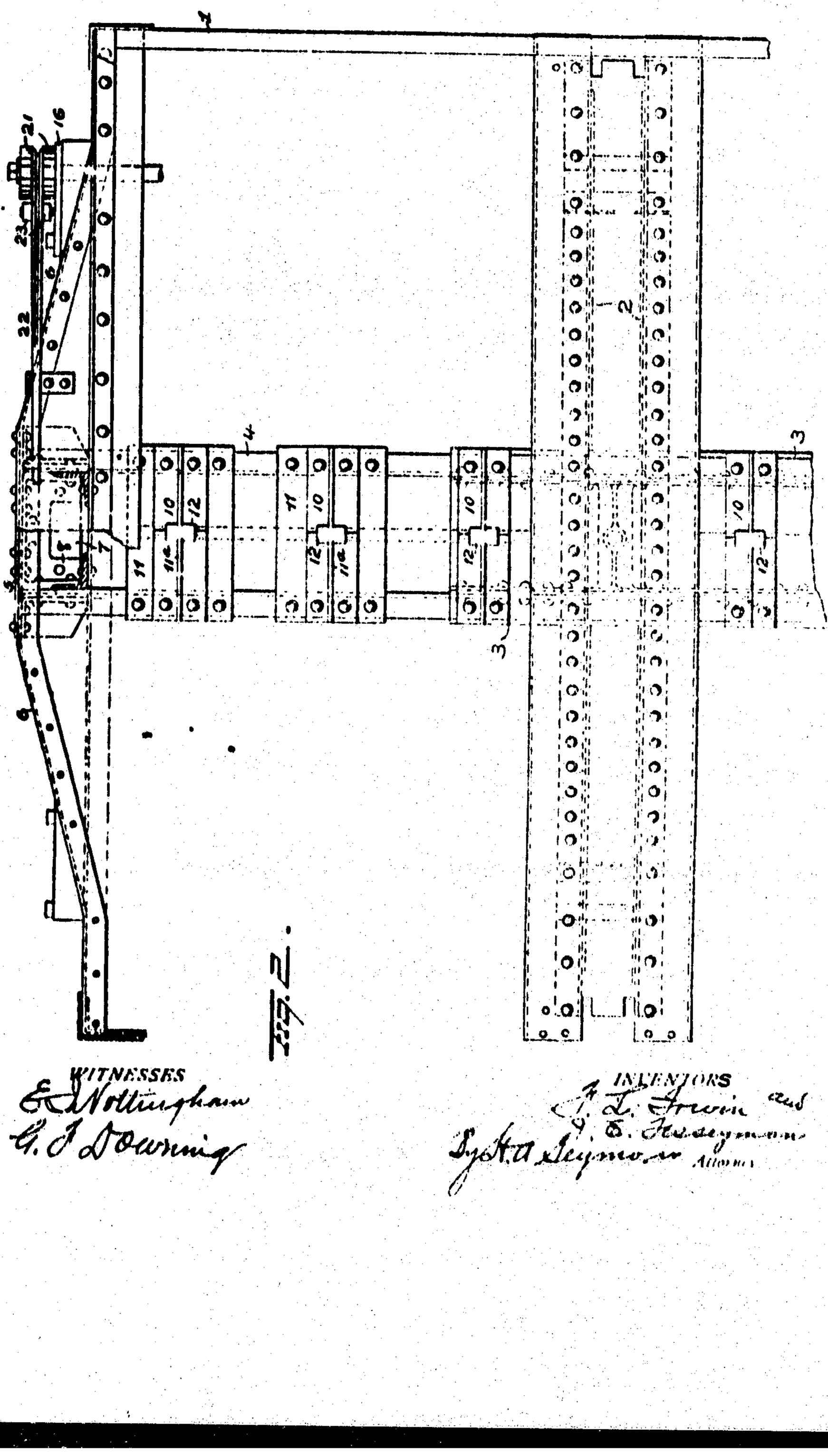

Fig. 2.

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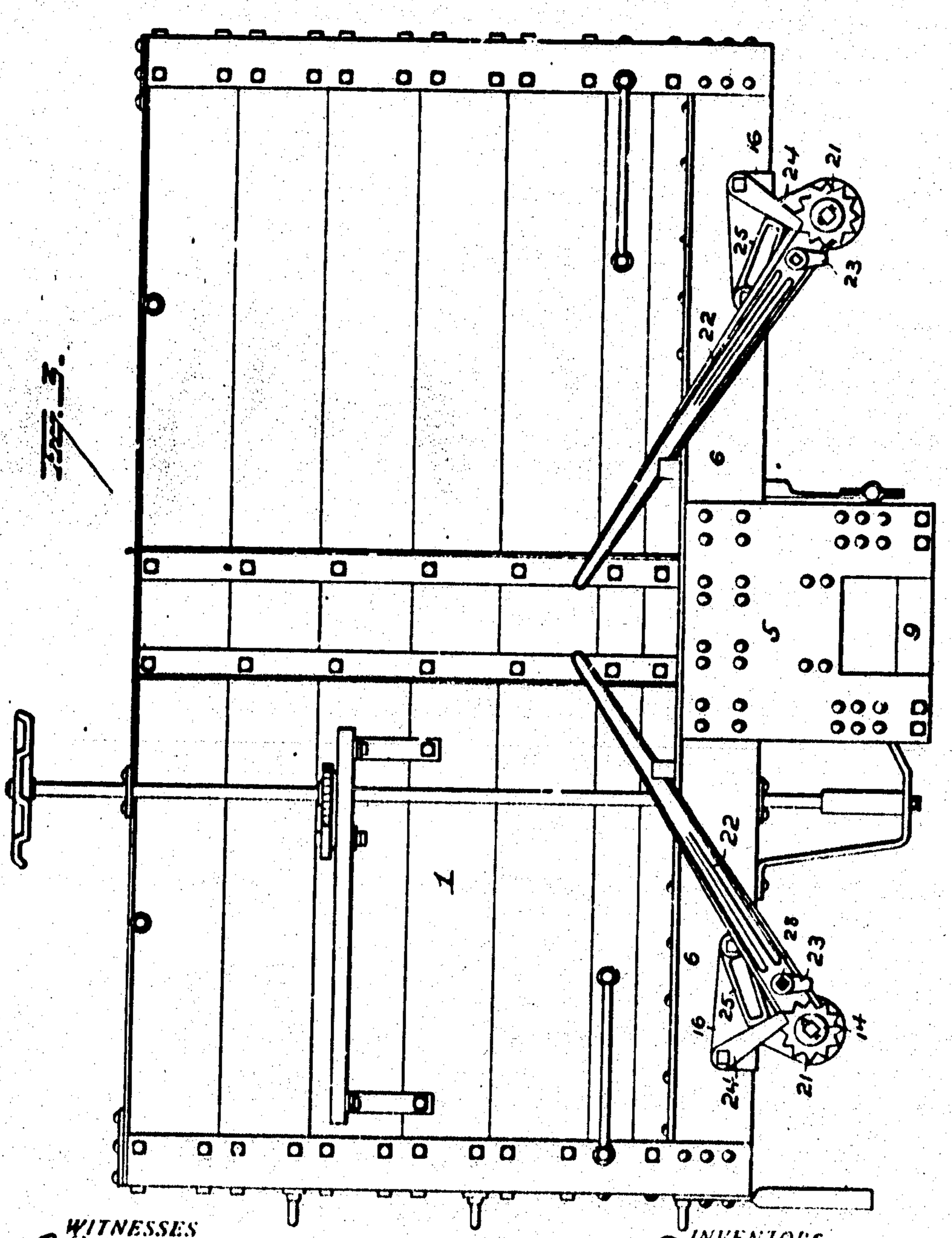

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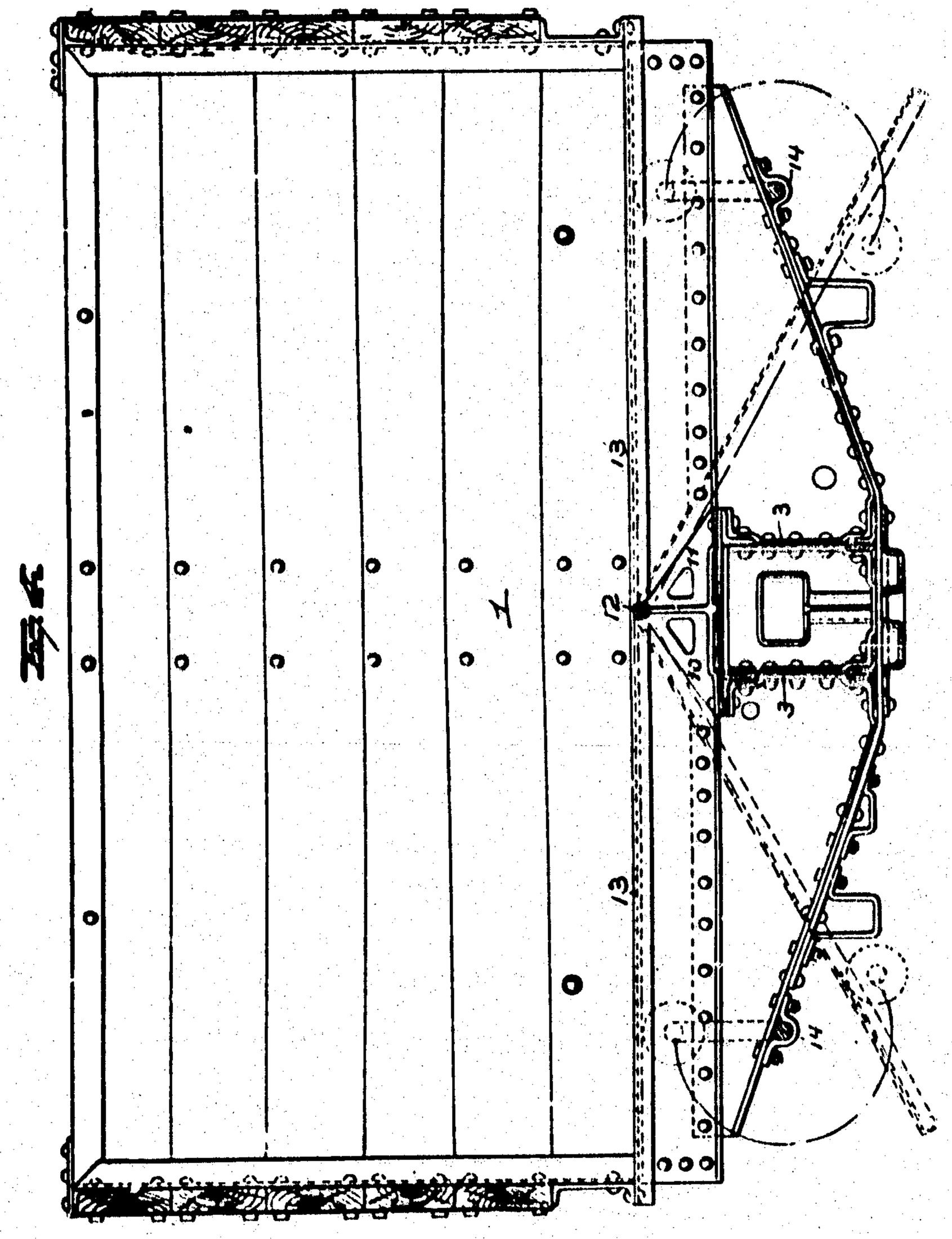
F. L. IRWIN & J. T. TESSEYMAN.

DUMPING CAR.

APPLICATION FILED MAR. 8, 1907.

7 SHEETS—SHEET 4.



WITNESSES
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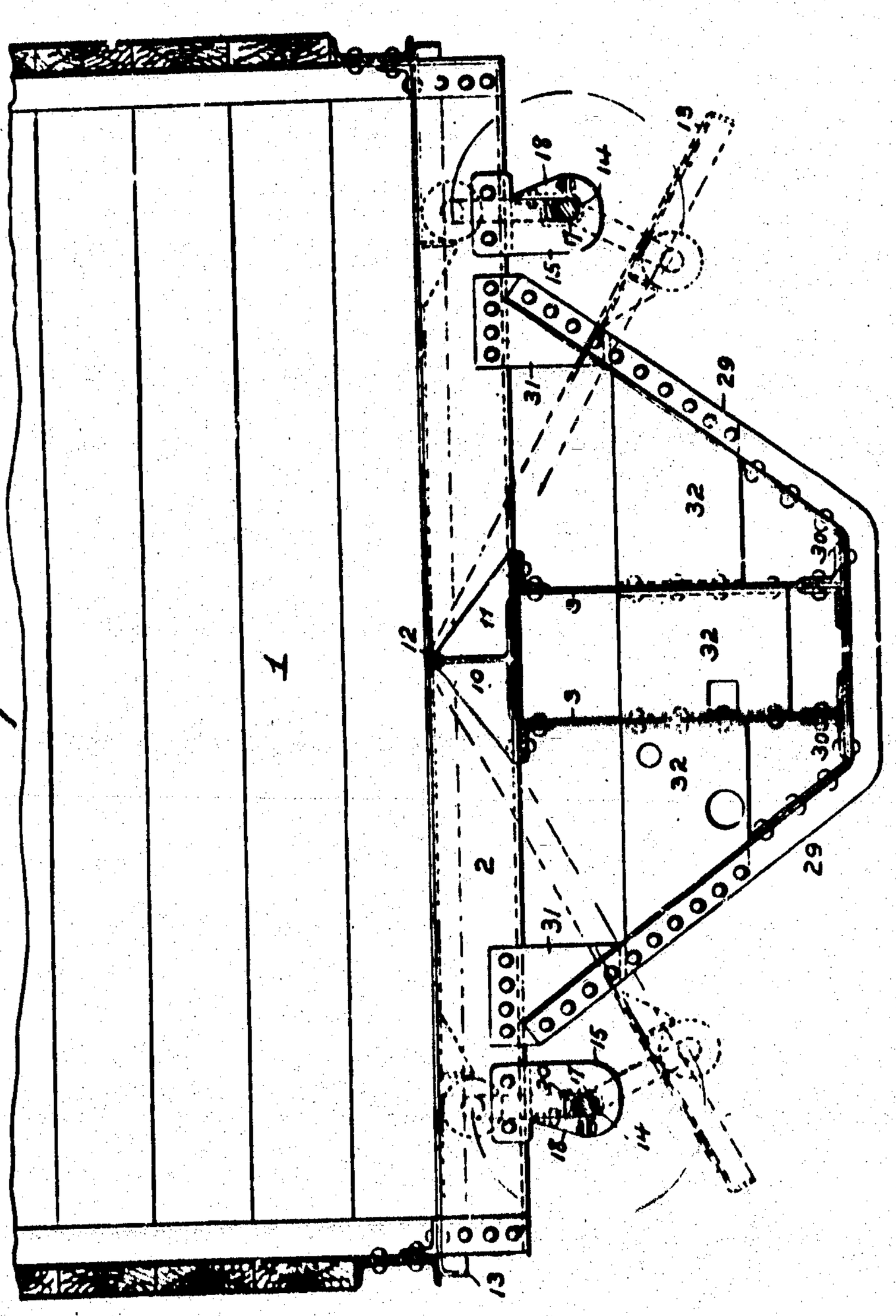
APPLICATION FILED MAR. 6, 1907.

7 SHEETS—SHEET 5.

Fig. 5.



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DUMPING CAR.

APPLICATION FILED MAR. 5, 1907.

7 SHEETS—SHEET 6.

Fig. 5

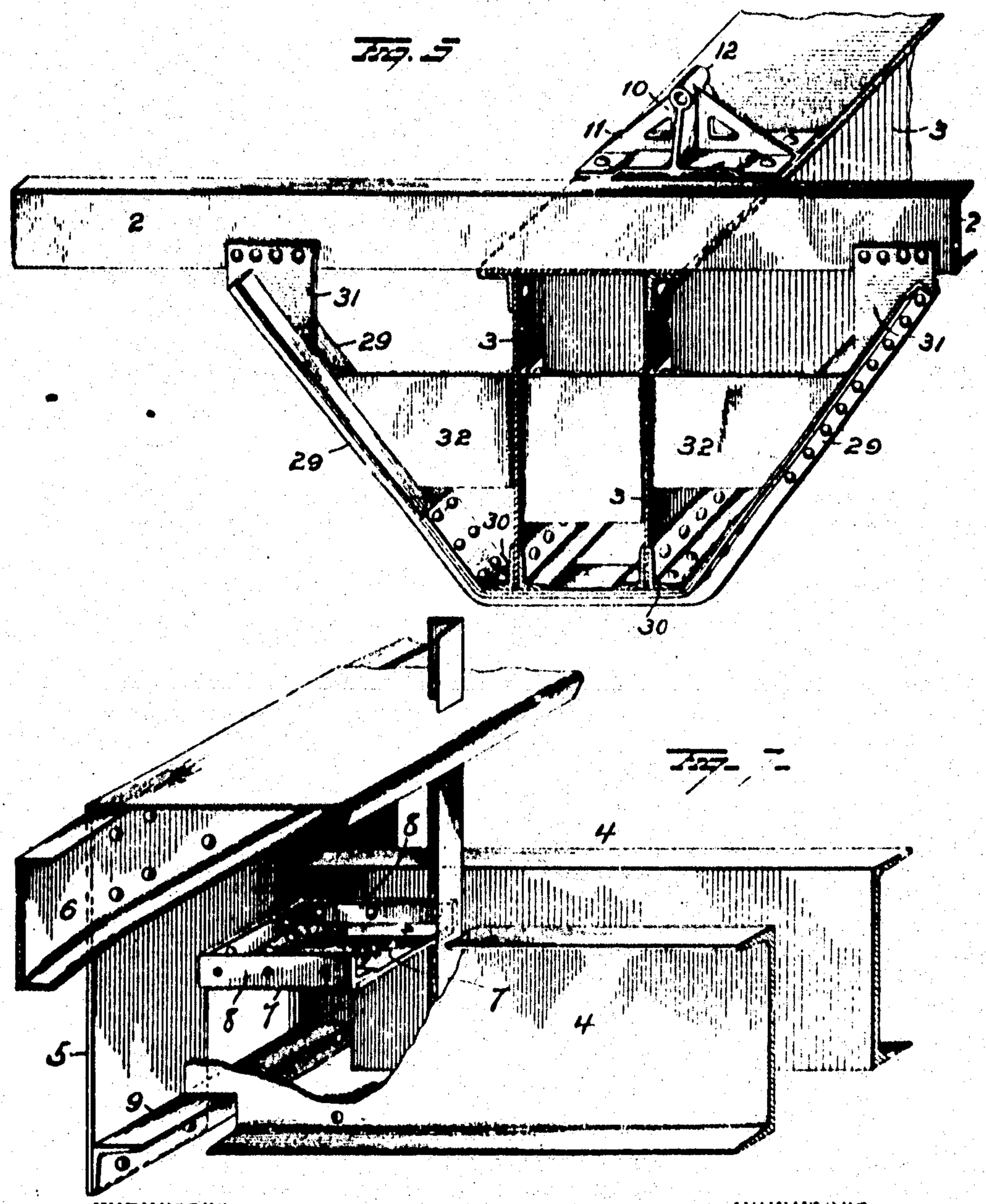
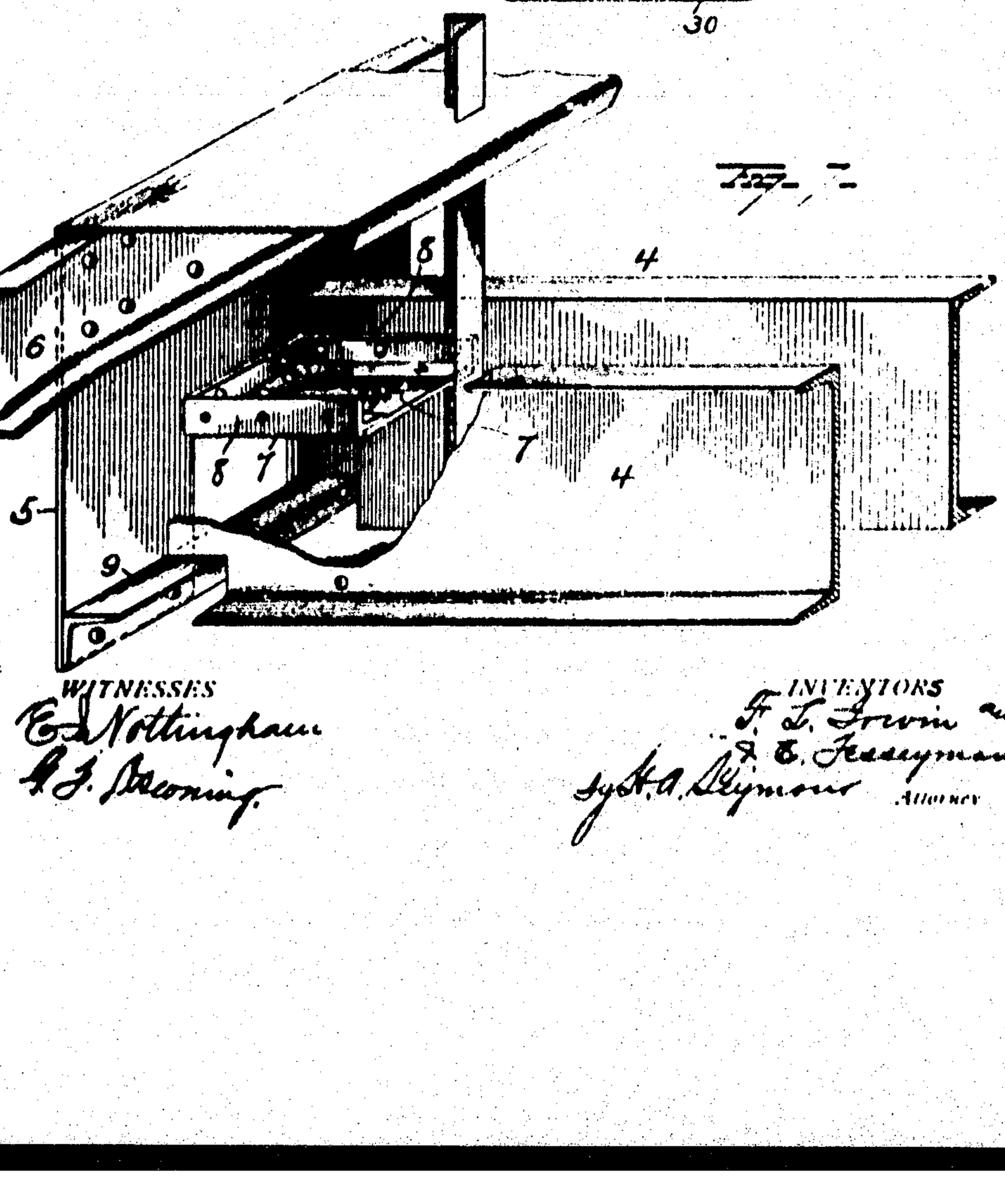


Fig. 7



WITNESSES

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APPLICATION FILED MAR. 6, 1907.

7 SHEETS—SHEET 7.

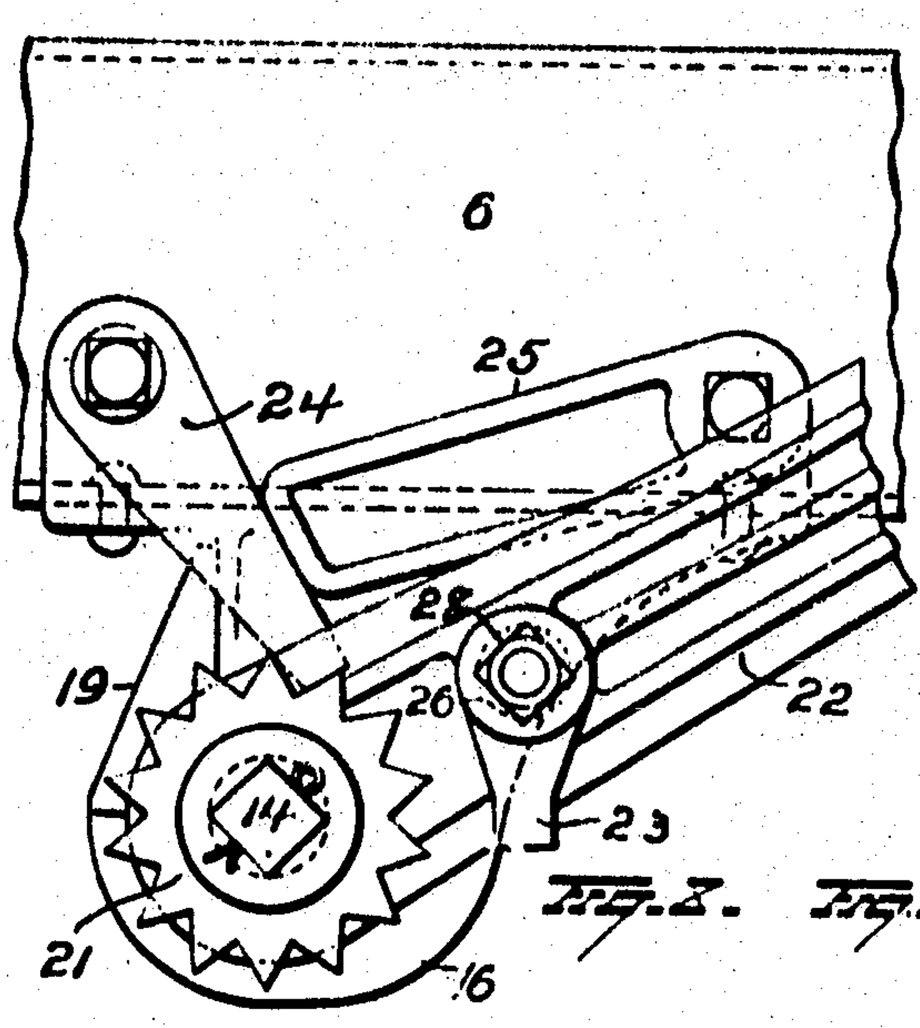

Fig. 8.

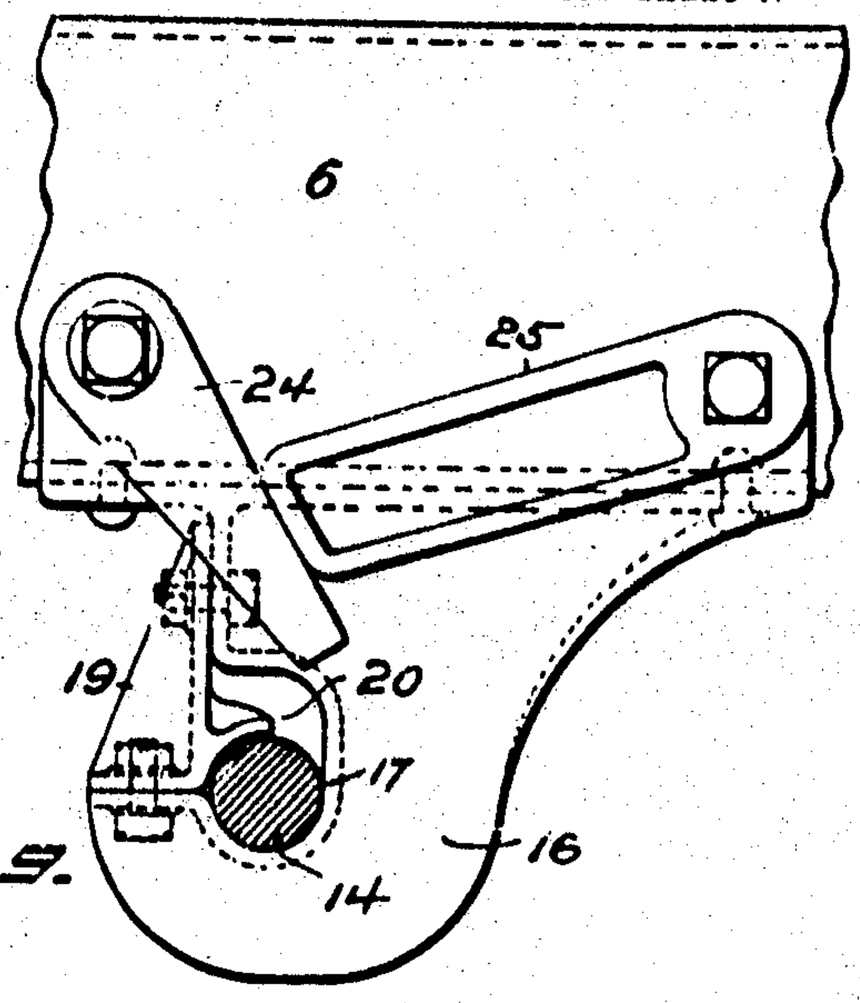

Fig. 9.

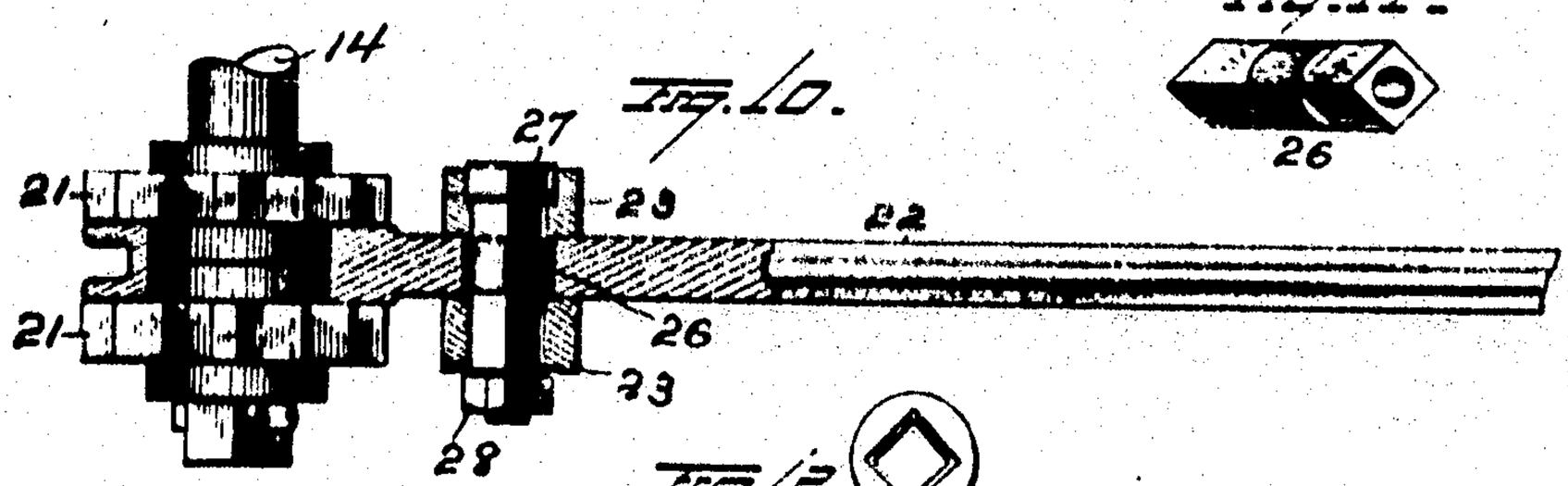

Fig. 10.

Fig. 11.

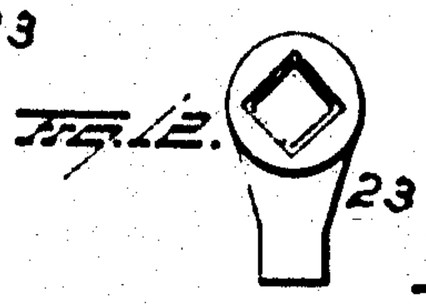

Fig. 12.

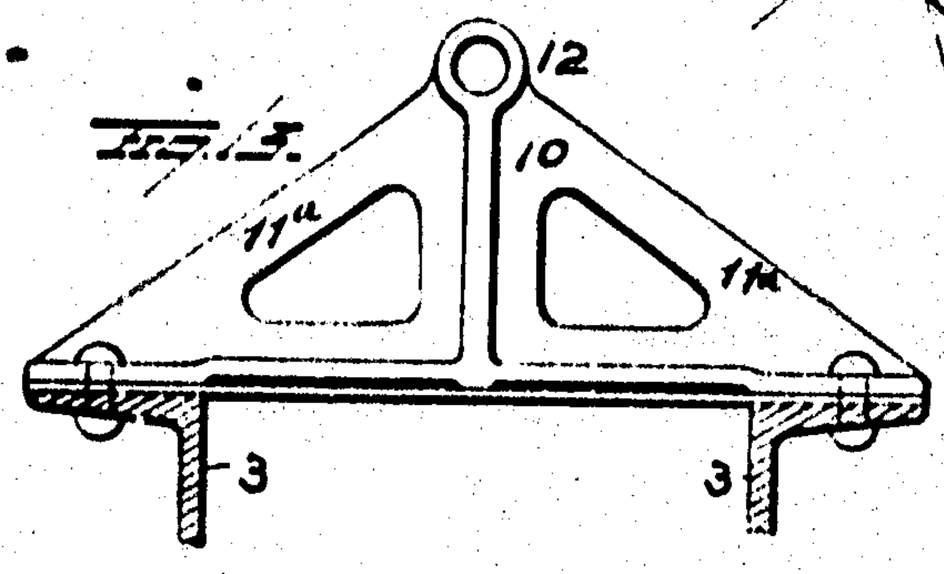

Fig. 13.

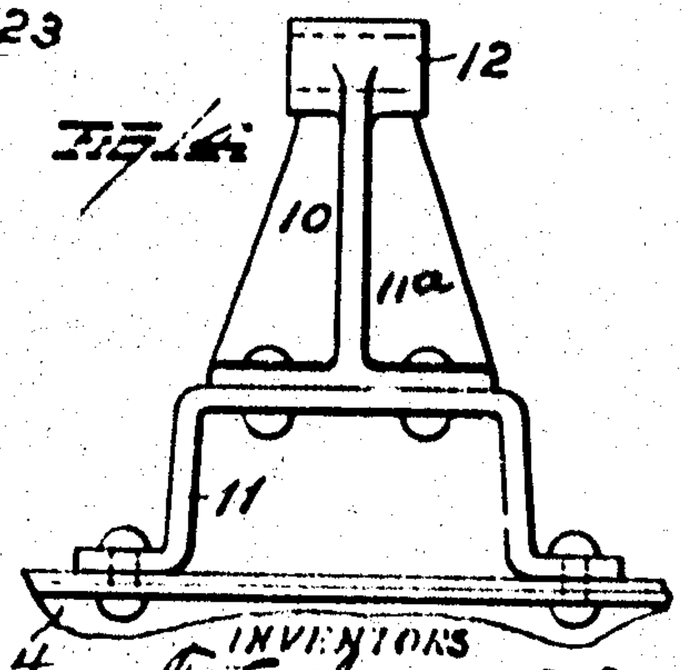

Fig. 14.

WITNESSES

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UNITED STATES PATENT OFFICE.

FRANK L. IRWIN AND JOHN E. TESSEYMAN, OF COLUMBUS, OHIO, ASSIGNORS TO THE RALSTON STEEL CAR COMPANY, OF COLUMBUS, OHIO.

DUMPING-CAR.

No. 861,464. Specification of Letters Patent. Patented July 30, 1907.

Application filed March 5, 1907. Serial No. 360,773.

To all whom it may concern:

Be it known that we, FRANK L. IRWIN and JOHN E. TESSEYMAN, residents of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Dumping-Cars; and we 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.

Our invention relates to improvements in dumping cars, an object of the invention being to provide improved mounting for the crank shaft for operating the drop doors, improved ratchet lever and pawl arrangement for operating the crank shafts and improved locking pawl mechanism for said shafts.

A further object is to provide improved hinge bearings for the drop doors and improved face plate construction at the car ends.

With these and other objects in view, the invention 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 view partly in elevation and partly in longitudinal section. Fig. 2 is a view partly in plan and partly in horizontal section. Fig. 3 is an end view. Fig. 4 is a view in cross section taken through a bolster. Fig. 5 is a view in cross section taken at a cross bearer, Figs. 6 and 7 are detail perspective views, partly in section and Figs. 8, 9, 10, 11, 12, 13 and 14 are views of various details of construction.

1 represents the car body supported on cross bearers 2 and the latter secured upon, and supported by the center box girder sill 3. Draft channels 4 are secured to the ends of the center sill 3 and the ends of the channels 4 are secured to the face plates 5 and the latter to end sills 6.

The face plates 5 are made with parallel slits extending up from the lower edge, the desired distance, and the tongue 7 thus formed, is bent inward at right angles. A reinforcing rectangular angle bar 8 is secured to the tongue 7 and to the face plate 5 and channels 4. A draw bar carrier angle 9 is secured to the inner face of face plate 5 and constitutes the lower wall of the rectangular opening in the face plate 5 to receive the draw bar of the coupler.

Hinge bearings 10 are secured on the center sill between the cross bearers and also on bowed plates 11 secured to the channels 4 to bring the bearings 10 thereon up to the common level of the others. These hinge bearings 10 comprise castings of general rectangular shape, having cross webs 11ª at their centers and bearing sleeves 12. The sleeve 12 of each bearing bracket is located at the upper end or apex of the triangle formed by the webs 11ª to receive the hinge pin or shaft, which supports the inner ends of the doors 13. The base of each bearing bracket 10 is made with three bearing points, one at the center and the others at the ends which allows for imperfections in the sill top plate and permits all bearings to assume a uniform level.

The doors 13 at both sides are operated by crank shafts 14 supported at intermediate points throughout the car by improved hangers 15 at the cross bearers, and by improved hangers 16 at end sills. A casting of general hook form having a recess or pocket 17 to receive the crank shaft and the end face of the hook is in a horizontal plane at right angles to the front face of the hanger to receive a triangular clip 18 which is secured to both the vertical and the horizontal faces of the hanger to permanently retain the shaft in the hanger. The upper portion of the hanger is made with an angular recess to form a seat against the cross bearer to which latter, the hanger is secured.

The end sill hangers 16 are like the hangers 15 save they are larger and stronger and their clips 19 are shown with curved lugs 20 projecting into the pocket in the hanger over the crank shaft, to prevent upward movement of the shaft, and if desired, the clips 18 on the intermediate hangers 15 may be provided with lugs 20.

On the end of each crank shaft, at the end of the car, two ratchet wheels 21 are secured and an operating lever 22 is fulcrumed at its end on the crank shaft between the ratchet wheels and carries two operating pawls 23 as will be hereinafter described. A locking pawl 24 is pivoted to one end of the upper portion of the end sill hanger 16 and its free end normally rests between teeth of the inner ratchet wheel 21 to lock the latter against turning, and a gravity locking pawl 25 is pivoted to the opposite end of the upper portion of the end sill hanger 16 and its inclined free end bears against pawl 24 to prevent accidental movement of the latter. When the crank shaft is to be turned by the lever 22, both of the pawls 24 and 25 must be thrown back.

The lever 22 is made with a circular opening near its fulcrumed end to receive the cylindrical central portion of a bushing 26 permitting the latter free rotary movement in the lever. The end portions of the bushing 26 are made angular externally to enter angular openings in the pawls 23, compelling both pawls to move together. The angular end of the bushing 26 in the inner pawl 23 is shorter than the thickness of the pawl, thus permitting the angular head 27 of a bolt to be countersunk into the pawl. The bolt passes through the cylindrical bore of the bushing and receives a nut

28 on its outer end, whereby the parts are secured against displacement. The said pawls 23 normally hang out of contact with the ratchet wheels 21 and when it is desired to turn the shaft, the pawls 23 are thrown around so as to engage the ratchet wheels and turn the shaft when the lever is oscillated.

The center sill 3 and cross bearer 2 are connected by parallel angle truss bars 29 which pass below the center sill and are secured to the center sill bottom angles 30. At their ends the truss bars are connected by gusset plates 31 with the cross bearer, and spreader plates 32 are secured between the web plates of the center sill and between the latter and truss angle bars 29.

A great many changes might be made in the general form and arrangement of the parts described without departing from our invention and hence we would have it understood that we do not restrict ourselves to the precise details set forth but consider ourselves at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of our invention.

Having fully described our invention what we claim as new and desire to secure by Letters-Patent, is:—

1. In a car, the combination with draft channels, of a face plate across the end of the channels having slits therein forming a tongue and said tongue bent at right angles and projecting between the channels, and a rectangular reinforcing angle securing said tongue to the channels and face plate.

2. In a car, the combination with parallel draft channels and a face plate across the end thereof, of a tongue on the face plate projected between the channels and reinforcing angles securing the tongue to the channels.

3. In a car, the combination with a center box girder sill and cross bearers thereon, of truss bars secured to the cross bearers and extending below the center sill, and a spreader secured between the web plates of the center sill.

4. In a car, the combination with a center box girder sill, and cross bearers thereon, of truss bars passed beneath the center sill, gusset plates securing the ends of the truss bars to the cross bearers, and spreaders secured between the center sill and truss bars and between the web plates of the center sill.

5. In a car, the combination with a center sill and cross bearers, of hinge brackets disposed directly upon the center sill between the cross bearers, each of said brackets comprising a casting having a sleeve at its top and having its base raised between the ends thereof and secured at its ends to the flanges of the center sill.

6. A hinge bearing, comprising a triangular casting, having a central cross web and a bearing at its upper end or apex, and having bearing supports at its center and ends only whereby inequalities on the top of the center sill will be compensated for, and the several bearing castings of a series caused to assume a uniform level.

7. In a car, the combination with a center sill and draft sills having their upper edges in a plane below that of the top of the center girder, of hinge brackets for drop doors secured upon the center sill, bowed plates or brackets secured to the draft sills and having their upper faces in the same plane as the top of the center sill, and hinge brackets secured upon said bowed plates or brackets.

8. In a car, the combination with drop doors and a crank shaft, of hangers for the crank shaft, each comprising a casting having a shaft pocket, and a clip secured to a vertical and a horizontal wall of the casting and closing the pocket.

9. In a car, the combination with drop doors and a crank shaft, a casting having a shaft pocket, a clip secured to the casting and closing the pocket, and a lug projecting from said clip and entering the pocket so as to be disposed over the shaft therein.

10. In a dump car, the combination with drop doors and a crank shaft to operate them, of ratchet wheels secured on the shaft, a lever fulcrumed on the shaft between the ratchet wheels, a bushing having rotary mounting in the lever and pawls keyed to the bushing at the sides of the lever and adapted to engage the ratchet wheels.

11. In a dump car, the combination with a door operating shaft and ratchet wheels secured on the shaft, of a lever fulcrumed on the shaft between the ratchet wheels, a bushing having rotary mounting in the lever and made with angular ends, pawls having angular openings to receive the ends of the bushing, a bolt having an angular head countersunk in one pawl and passed through the bushing, and a nut on the other end of the bolt.

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

FRANK L. IRWIN.
JOHN E. TESSEYMAN.

Witnesses:
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