No. 762,314.

PATENTED JUNE 14, 1904.

L. E. JOHNSON.

RAILWAY SCOOP CAR.

APPLICATION FILED MAR. 30, 1904.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1.

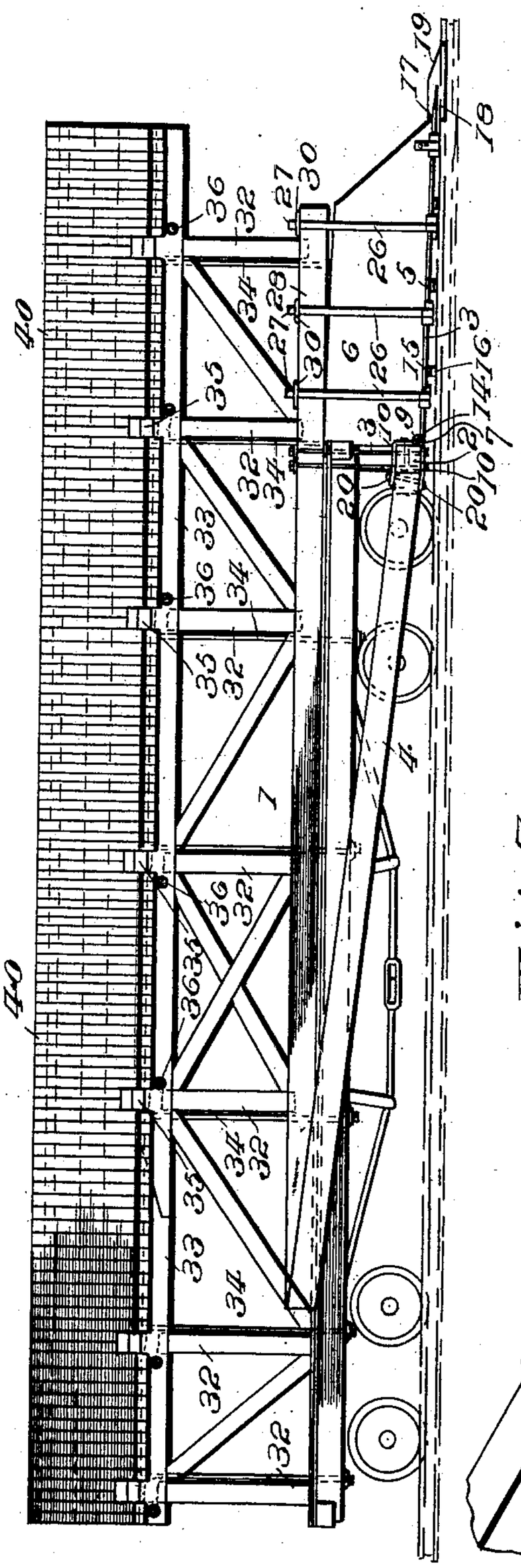

Fig. 8.

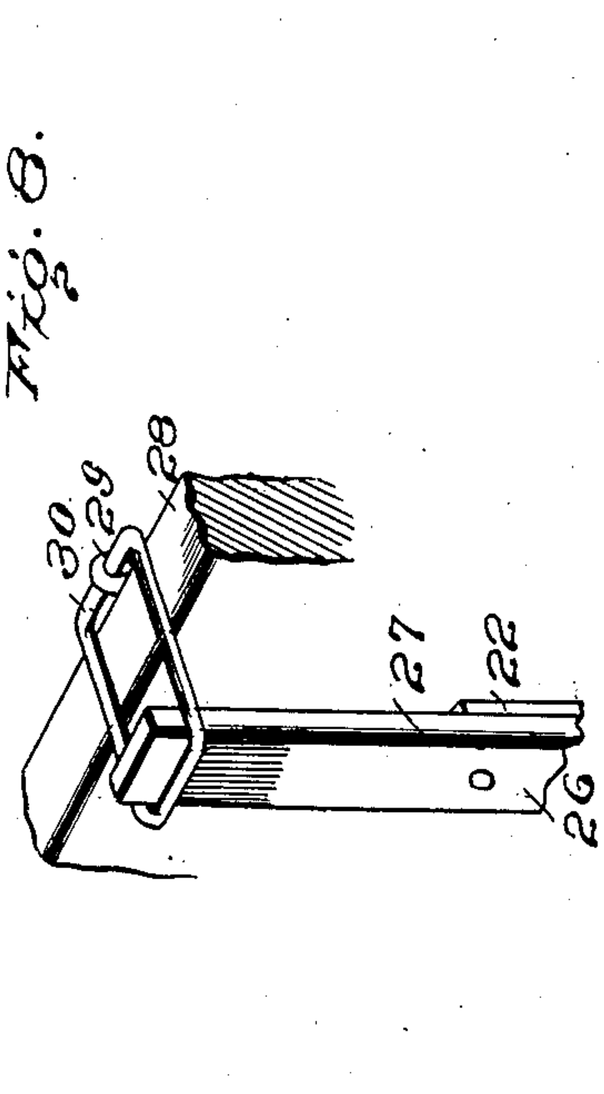

Fig. 7.

Witnesses

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3 SHEETS—SHEET 2.

Fig. 4.

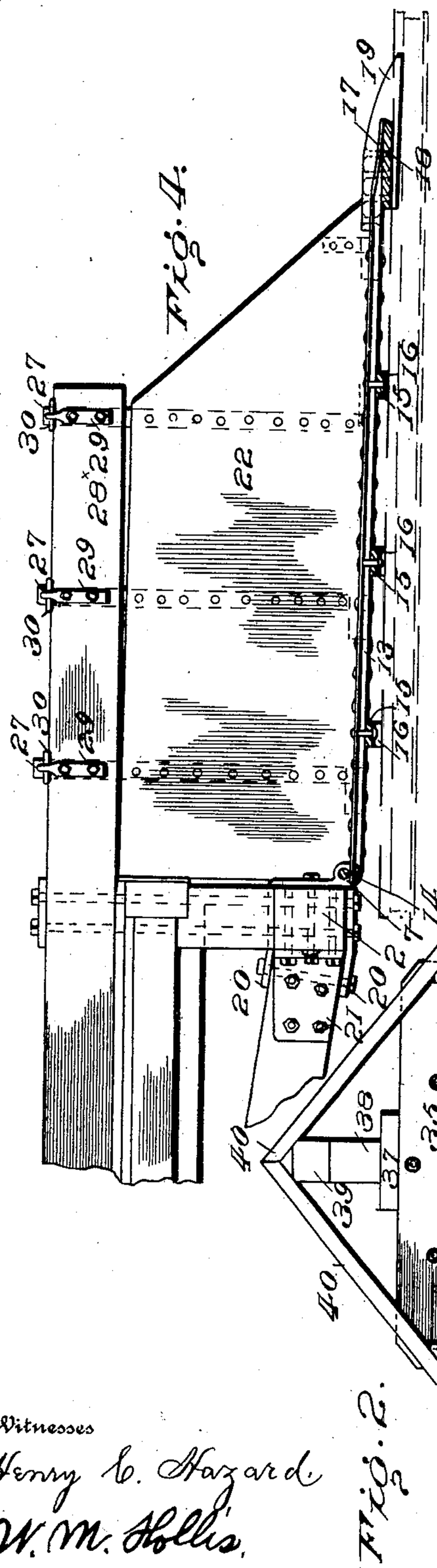

Fig. 5.

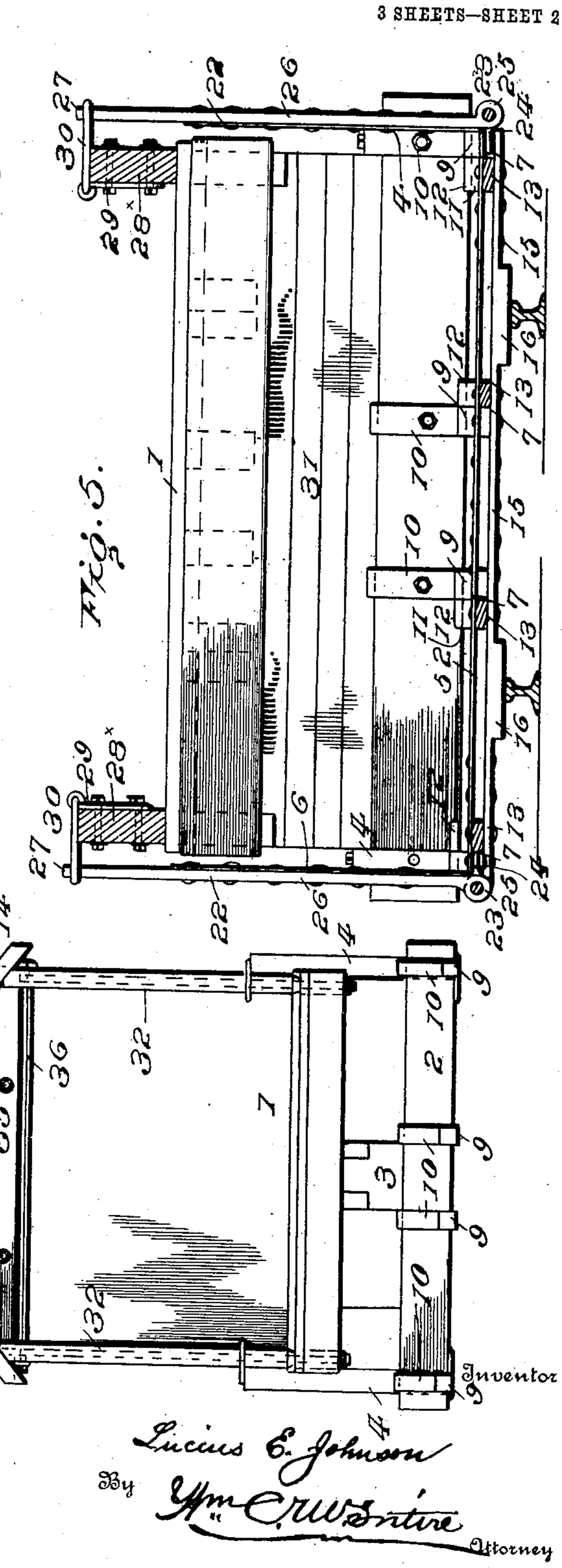

Fig. 2.

Witnesses

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NO MODEL. 3 SHEETS—SHEET 3.

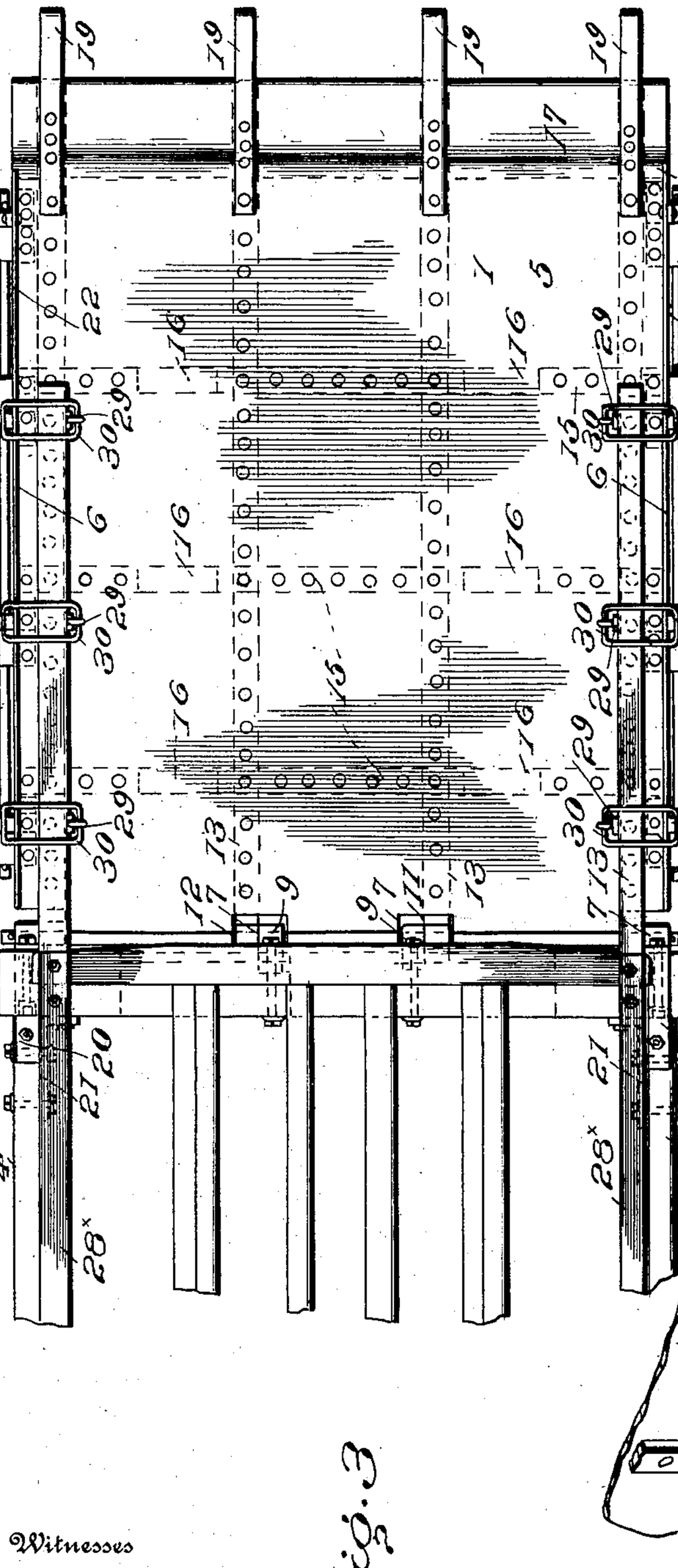

Fig. 3.

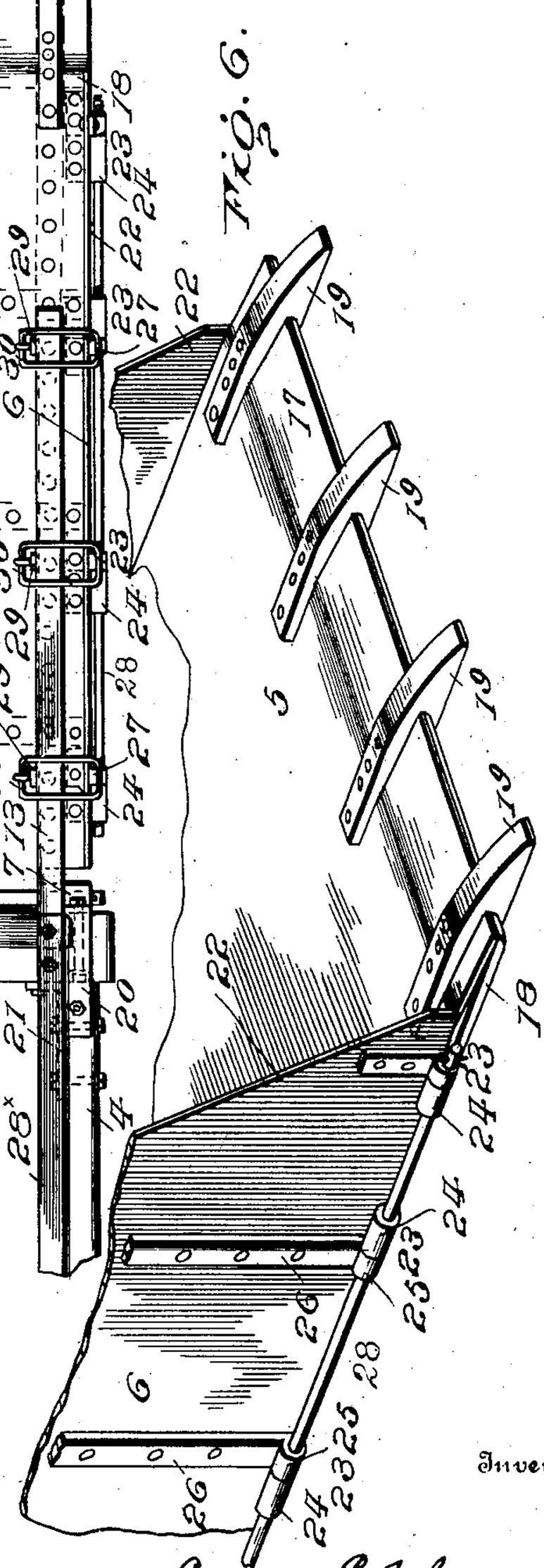

Fig. 2.

Witnesses

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No. 762,314. Patented June 14, 1904.

UNITED STATES PATENT OFFICE.

LUCIUS E. JOHNSON, OF ROANOKE, VIRGINIA.

RAILWAY SCOOP-CAR.

SPECIFICATION forming part of Letters Patent No. 762,314, dated June 14, 1904.

Application filed March 30, 1904. Serial No. 200,816. (No model.)

To all whom it may concern:

Be it known that I, LUCIUS E. JOHNSON, a citizen of the United States, residing at Roanoke, in the county of Roanoke and State of Virginia, have invented certain new and useful Improvements in Railway Scoop-Cars; and I 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.

The invention relates to an improvement in railroad-cars, particularly of the type known as "scoop-cars," wherein a shovel or scoop carried by the car is arranged for use in removing debris from railroad-tracks.

The main object of the invention resides in the production of a car of the type noted having such special structure as to make its use advantageous in situations and under conditions ordinarily prohibiting hand-labor—such, for example, as in clearing blocked tunnels or landslides on mountainous sections of the road or like situations.

The invention, broadly stated, consists in a scoop having hinged connection with a car-body, which latter may be of any ordinary or special construction, and a hood or cover to protect the workman operating the device from falling material or the like, both of these parts being of special construction and arrangement best adapted for the specific use intended.

The details of the invention are shown in the preferred form in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved scoop-car. Fig. 2 is a vertical sectional view of the same just forward of the car-body. Fig. 3 is an enlarged plan of the scoop and connections. Fig. 4 is a longitudinal section of the same. Fig. 5 is a transverse section of the same. Fig. 6 is a broken perspective illustrating the construction at the forward end of the scoop and showing the scoop sides. Fig. 7 is an enlarged perspective of a detail, showing the hinge connection of the cross-beam and scoop and the attachment of the brace-beam to the cross-beam. Fig. 8 is a perspective of a detail, showing the means for holding the scoop sides in operative position.

Referring to the accompanying drawings, wherein like reference-numerals indicate like parts throughout the several views, 1 represents a car-body, in the present instance shown as the ordinary flat-car, though independent of the details noted the car may be of any special construction desired.

A heavy cross-beam 2 is supported in hangers 3 across the front end of the car below the car-sill and is designed to form the main support for the scoop. Obliquely-disposed brace-beams 4 extend from the ends of the cross-beam rearward alongside the car-body and are securely bolted in place. The forward ends of the beams 4 are secured to the cross-beam in a manner to be described.

The scoop comprises a flat plane or plate 5 and sides 6. The plate 5 has a movable connection with the cross-beam 2 through the medium of hinges 7, each comprising member 8, having an eye 9 disposed at the lower front edge of beam 2, and arms 10 projecting from said eye and extending around the cross-beam, to which they are securely bolted. The other member 11 of the hinge is secured to plate 5 of the scoop and comprises eye member 12, arranged to coöperate with eye 9, and a strap member 13, extending the entire length beneath the plate 5 and securely bolted thereto. Any desired number of hinge connections between the scoop and cross-beam may be used, and I prefer to connect the respective eye members by a single rod or cotter-pin 14, extending transversely of the scoop, as shown. The plate 5 is further braced by transverse strips 15, arranged beneath the hinge-straps 13 and securely bolted to said straps and to the plate 5. Coincident with the path of the track-rails each transverse brace-strip 15 is integrally formed with a shoe 16, adapted to slide upon the rails in the movement of the car and support the scoop. The forward end of the scoop-plate is provided with the usual bit or sharpened member 17, extending transversely of the plate and securely bolted in place. A plate 18, secured transversely of and beneath the plate 5 at its extreme forward end, serves as an effective brace at the operative end of the scoop and bears on the track-rails, as shown. A series of fingers 19 project beyond the forward end of the scoop, being arranged to aid in clearing the path of

the scoop of large obstructions, as is usual. These fingers may be of any desired construction and number, but are preferably curved on their upper edge and projected below the plane of the plate 5 and secured in alinement with the strap members 13 of the hinge for more effective bracing.

The arms 10 of the hinge members 8, secured at the ends of the cross-beam, extend beyond the plane of said beam, and said extensions 20 embrace and are securely bolted to the forward ends of the brace-beams 4, as shown, forming the connection between the brace-beams and the cross-beam. Angle-plates 21 between the brace-beams and the cross-beam further secure the parts and prevent movement of the cross-beam.

The scoop has movable sides 22, having connection with the plate 5 through hinges 23, comprising members 24, secured to the plate 5, and members 25, secured to the sides, the latter members having straps 26, extending the entire height of said sides, to which they are securely bolted and projecting some distance above the upper edges thereof to form hooks 27. A longitudinal cotter-pin 28 joins the respective hinge members on each side of the scoop. A beam $28^{\times}$ extends from the car-body on each side in position above and somewhat within the plane of the scoop sides. Plates 29 are bolted to the inner sides of the beams 28, and links 30 are pivotally connected to said plates, the links being so spaced and of such size as to engage the hooks 27 of the sides when desired to hold the sides in elevated position, as will be evident.

A suitable plate or filling 31 is secured to the forward end of the car-body within the plane of the scoop to form a rear wall therefor.

From the above description it will be seen that the scoop is hinged to the car-body and supported by the track-rails. Hence its effective working plane is defined entirely by the rails, and in operation it will enter the mass of debris at the rail-line. The sides of the scoop are readily dropped flat with the plate 5 for convenient unloading of the scoop.

It has been found very necessary to protect the workman of a device of this character, particularly against falling material, as in tunnel-work or land-slides, and against the elements, and for this purpose I have devised a hood or cover to overlie the car structure and scoop. Such cover comprises vertical beams 32, rising from the car-body and joined at top by longitudinal stringers 33 of a length to extend over the scoop, as shown. The stringers are secured in place by vertical bolts 34, passing therethrough and down and through the side sills of the car. The vertical beams 32 are mortised in the lower car-rail and in id stringers. Cross-beams 35, transversely nged, connect the stringers at suitable in- s, the cross-beams being rabbeted and n suitable mortises in the stringers. Tie-rods 36 connect the stringers horizontally, being preferably placed contiguous the cross-beams 35.

A horizontally-arranged beam 37 is secured centrally of the cross-beams 35, to which beam 37 vertical stud-beams 38 are secured at suitable intervals. The apex-beam 39 is secured on the ends of the stud-beams 38.

The above-described parts form the framing for the cover, and it will be noted that such framing is effectively braced from the car-body and is effective against practically any strain to which it may be subjected.

A suitable sheathing 40, of wood or metal, is to overlie the frame, forming an effective cover or protection for the workman beneath.

The operation of the scoop-car will be fully apparent from the above description, it being particularly observed that the scoop-plate 5 and sides are at right angles, giving the scoop its fullest working capacity, that the scoop, owing to its operative bed being supported by the rails of the track, will enter the debris on the plane of said track, thus cleaning to the level desired, and that the sides of the scoop while secured against accidental displacement in operation may be quickly and conveniently released for dumping or removal of the load of the scoop.

What I claim as new is—

1. A scoop-car, comprising a car-body, a scoop carried thereby, and a cover overlying the car and scoop.

2. A scoop-car, comprising a car-body, a scoop hinged to the car, and a fixed cover overlying the car-body and scoop.

3. A scoop-car comprising a car-body, a scoop hinged at the rear end to the car and supported at its forward end on the track-rails, and a fixed cover overlying the car-body and scoop.

4. A scoop-car, comprising a car-body, a scoop comprising a flat plate hinged to the car-body and sides hinged to the flat plate, and a cover overlying the car-body and scoop.

5. A scoop-car, comprising a car-body, and a scoop comprising a flat plate hinged to the car-body at its end and supported on the track-rails at its front end, sides hinged to the flat plate, and means for holding the sides in operative relation to the plate.

6. A scoop-car comprising a car-body, a scoop comprising a flat plate hinged to the car-body and sides hinged to the flat plate, beams projecting from the car-body, and links supported from said beams and adapted to engage the sides when the sides are in operative position.

7. A scoop-car, comprising a car-body, a cross-beam supported thereby, a scoop comprising a flat plate hinged to said cross-beam and sides hinged to said flat plate, and means to secure the sides in operative relation to the flat plate.

8. A scoop-car, comprising a car-body, a

cross-beam supported thereby, a scoop comprising a flat plate hinged to said cross-beam and sides hinged to said flat plate, and means supported by the car to secure the sides in operative relation to the flat plate.

9. A scoop-car, comprising a car-body, a scoop movably supported from said car-body, and a cover-frame overlying the car and scoop, said frame comprising vertical beams secured to the car, longitudinal stringers secured on the upper ends of said beams, cross-beams joining the stringers, and an apex-beam supported by said cross-beams and a cover-sheathing secured on said frame.

10. A scoop-car, comprising a car-body, a scoop movably supported from said car-body, and a car-frame overlying the car and scoop, said frame comprising vertical beams secured to the car, longitudinal stringers secured on the upper ends of said beams, bolts passing through said stringers and through the side sills of the car-body, cross-beams joining the stringers, and an apex-beam supported by said cross-beams, and a cover-sheathing secured on said frame.

11. In a scoop-car, a car-body, a cross-beam at the forward end of said body, a scoop comprising a flat plate and vertical sides, said flat plate being hinged to the cross-beam, one member of the hinge connection being secured to the beam and the other member being secured to the scoop-plate, the latter hinge member having a strap end extending lengthwise the scoop-plate and bolted thereto, and transverse strips secured beneath the scoop-plate and secured thereto and to the straps of the hinge members.

12. In a scoop-car, a car-body, a cross-beam at the forward end of said body, a scoop comprising a flat plate and vertical sides, said flat plate being hinged to the cross-beam, one member of the hinge connection being secured to the beam and the other member being secured to the scoop-plate, the latter hinge member having a strap end extending lengthwise the scoop-plate and bolted thereto, and transverse strips secured beneath the scoop-plate and secured thereto and to the straps of the hinge members, said transverse strips having shoes to ride upon the track-rails.

13. In a scoop-car, a car-body, a cross-beam at the forward end of said body, a scoop comprising a flat plate and vertical sides, said flat plate being hinged to the cross-beam, one member of the hinge connection being secured to the beam and the other member being secured to the scoop-plate, the latter hinge member having a strap end extending lengthwise the scoop-plate and bolted thereto, a transverse bar secured beneath the free end of the scoop-plate and riding on the track-rails.

14. In a scoop-car, a car-body, a cross-beam at the forward end of the said body, a scoop comprising a flat plate and vertical sides, said flat plate being hinged to the cross-beam, one member of the hinge connection being secured to the beam and the other member being secured to the scoop-plate, the latter hinge member having a strap end extending lengthwise the scoop-plate and bolted thereto, a transverse bar secured beneath the free end of the scoop-plate and riding on the track-rails, and fingers secured to the scoop-plate projecting beyond the forward edge thereof.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LUCIUS E. JOHNSON.

Witnesses:
JAMES C. CASSELL,
JEROME C. SNAVELY.