

H. PRIES.

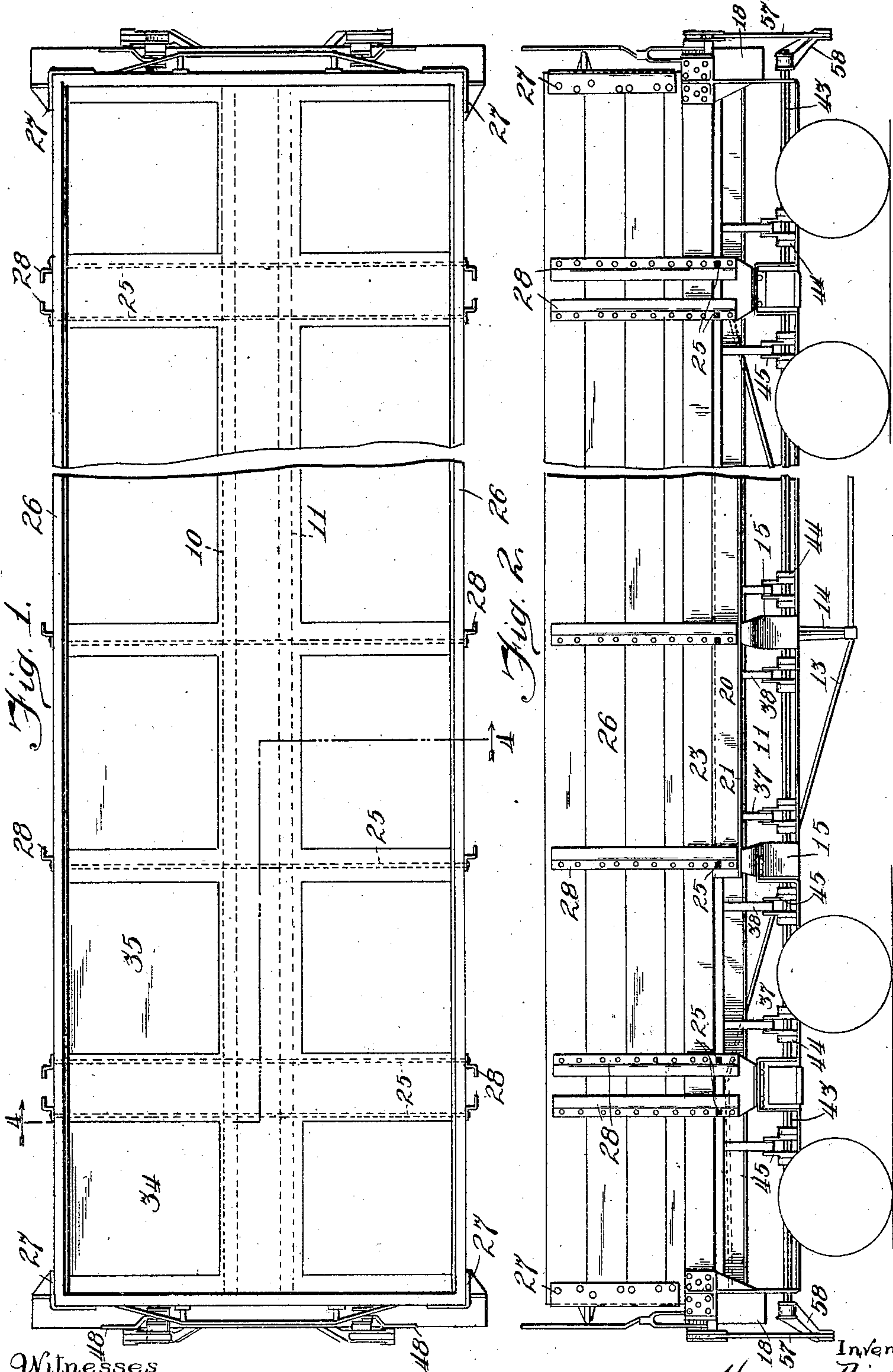
DUMP CAR.

APPLICATION FILED FEB. 24, 1909.

Patented July 20, 1909.

3 SHEETS—SHEET 1.

928,698.



Witnesses  
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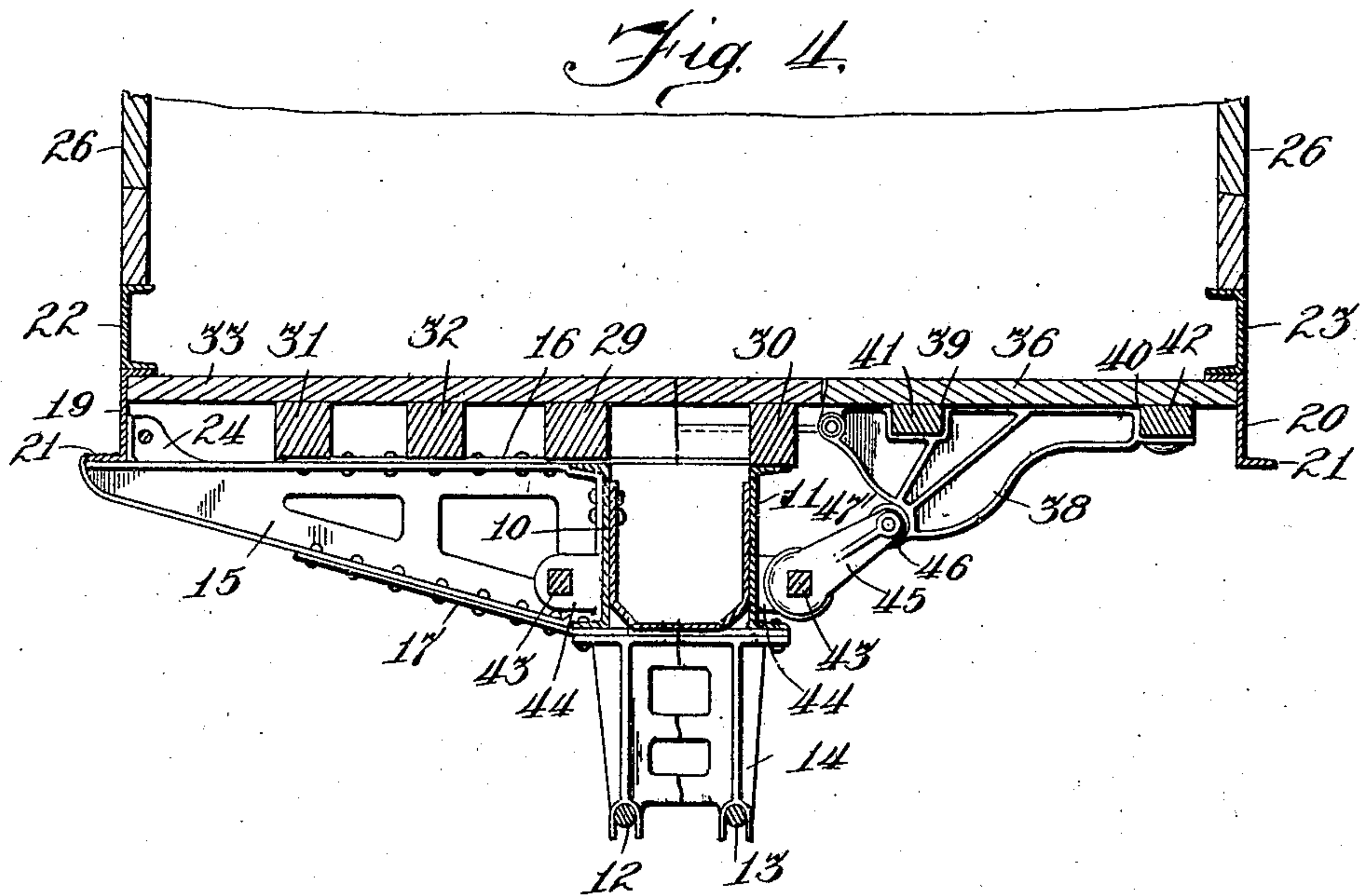
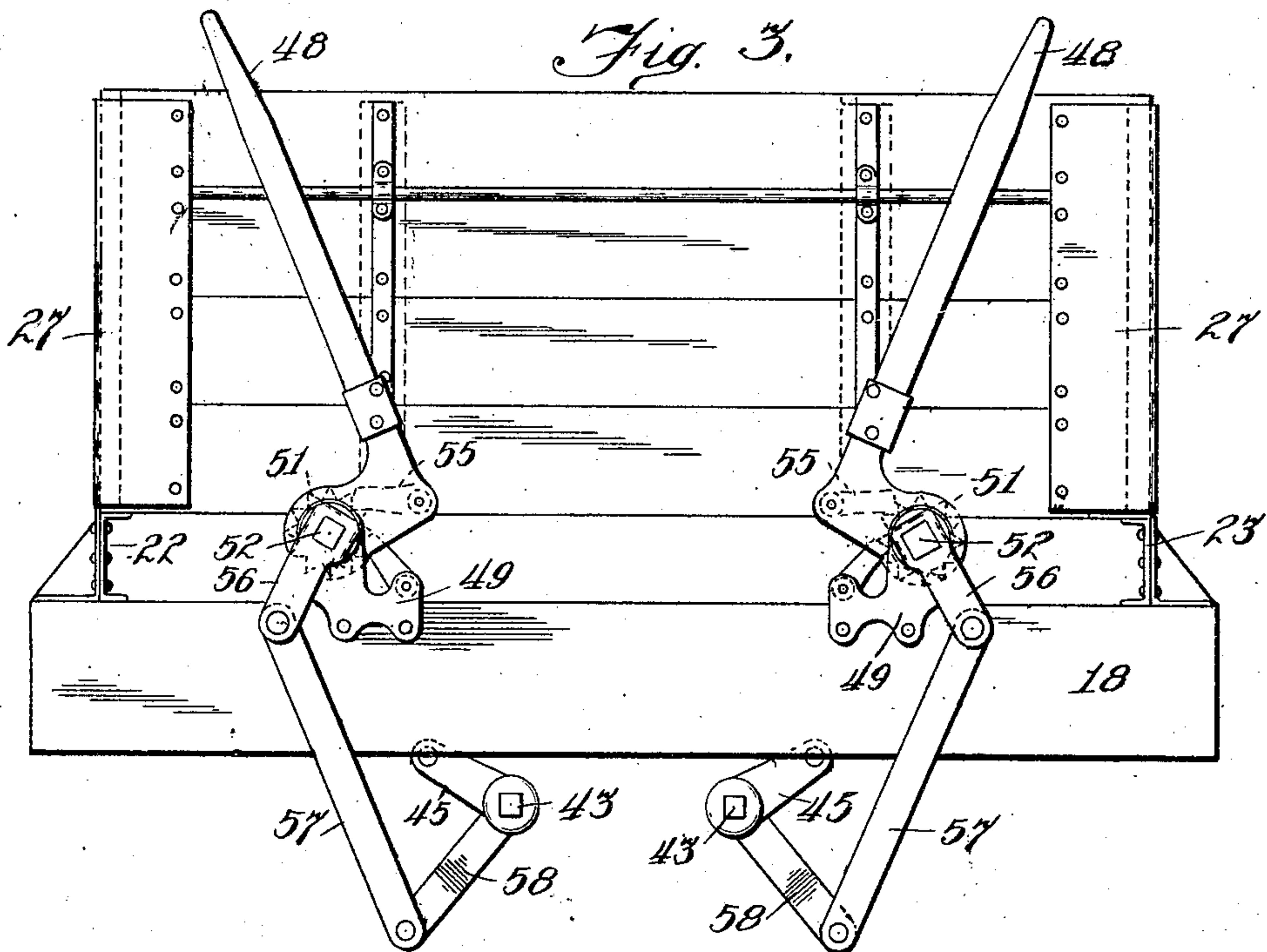
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

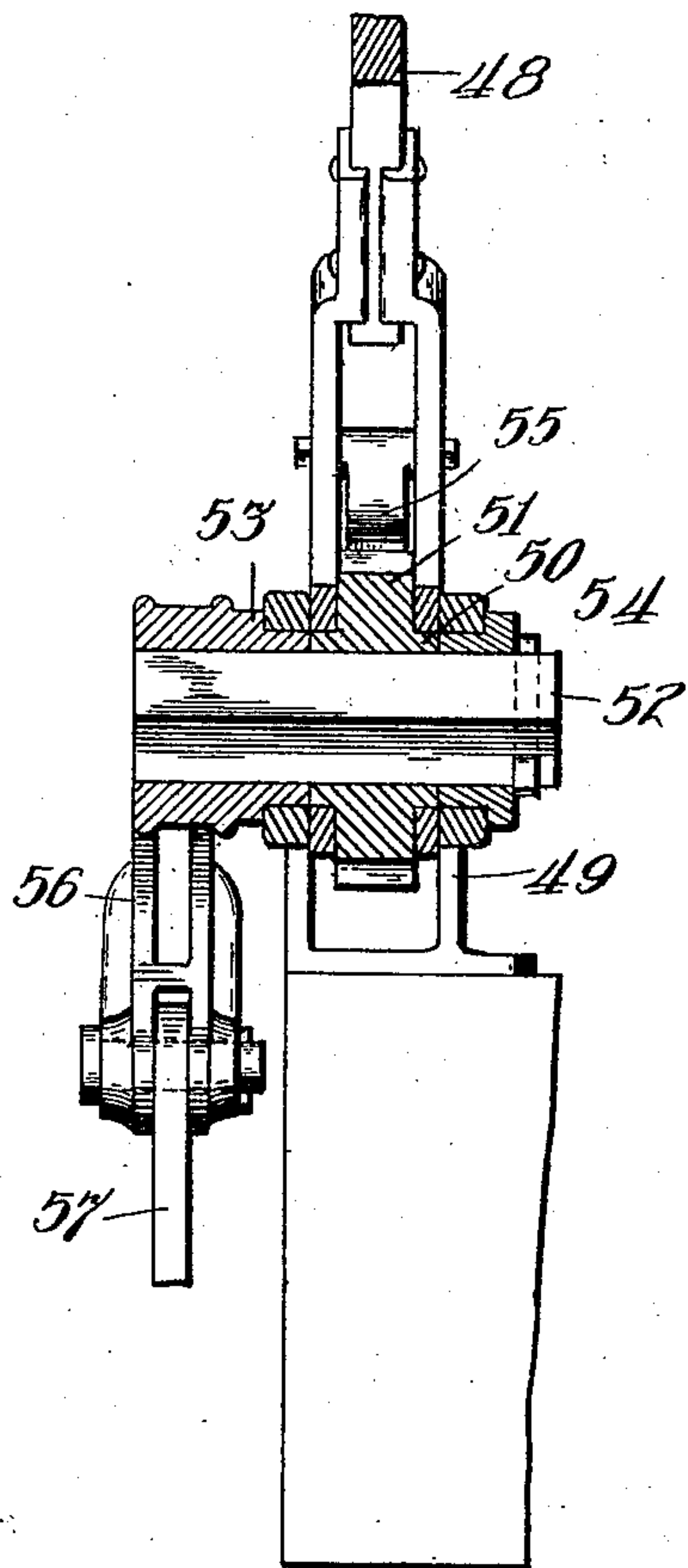


Fig. 6.

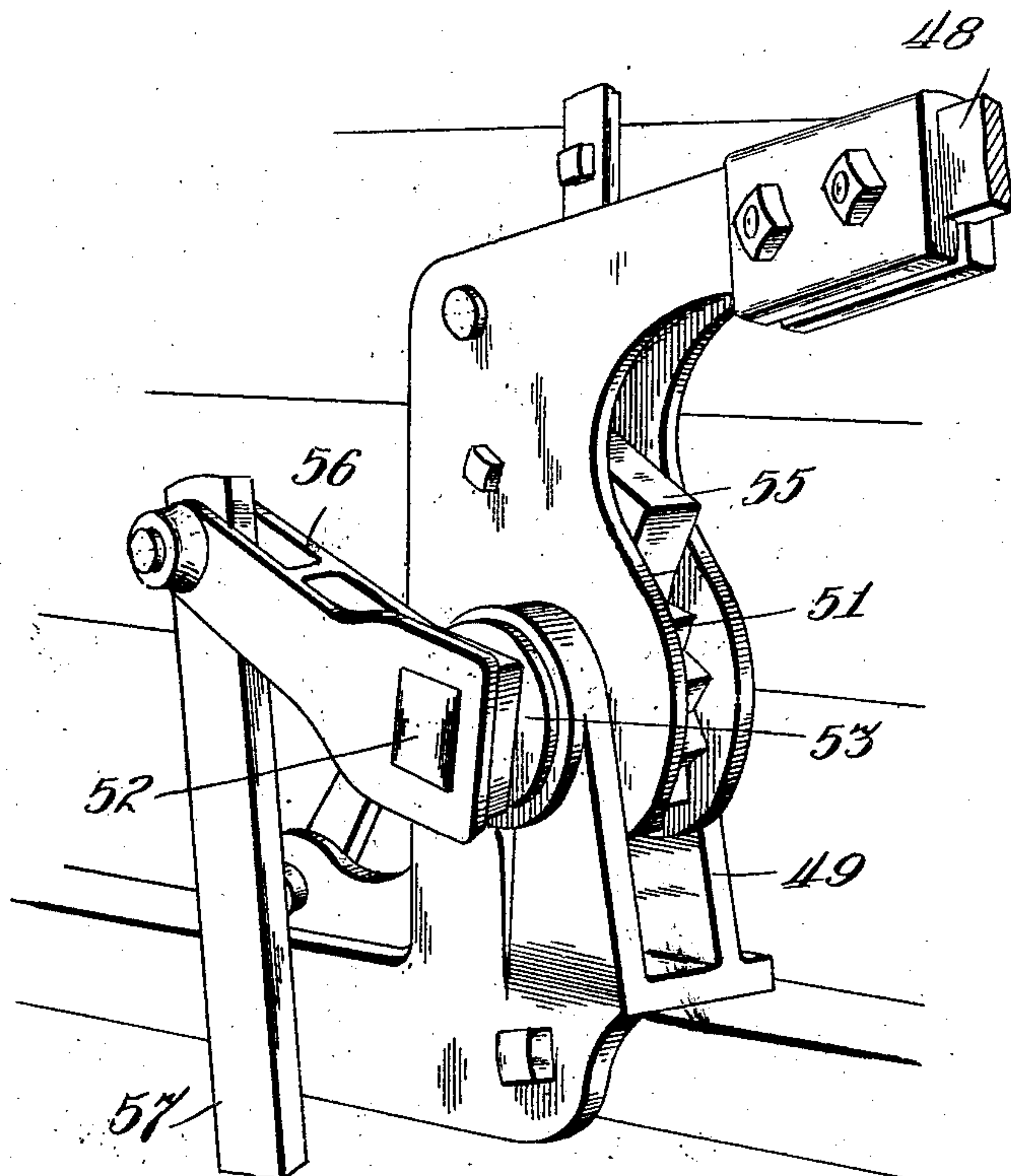


Fig. 5.

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# UNITED STATES PATENT OFFICE.

HERMAN PRIES, OF MICHIGAN CITY, INDIANA.

## DUMP-CAR.

No. 928,698.

Specification of Letters Patent.

Patented July 20, 1909.

Application filed February 24, 1909. Serial No. 479,814.

*To all whom it may concern:*

Be it known that I, HERMAN PRIES, a citizen of the United States, and resident of Michigan City, county of Laporte, and State of Indiana, have invented certain new and useful Improvements in Dump-Cars, of which the following is a specification and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to dump cars especially adapted for carrying minerals, having downwardly-opening doors in the bottom; the object of the invention being to generally improve on the construction of cars of this character with view to securing great strength without increasing the weight, large carrying capacity, free discharge and strong and readily-controllable dumping mechanism.

An embodiment of the invention is hereinafter described, and is illustrated in the accompanying drawings, in which—

Figure 1 is a detail plan view of the improved dump car; Fig. 2 is a detail side elevation of the same; Fig. 3 is an end elevation of the car; Fig. 4 is a transverse vertical section thereof on the broken line 4—4 of Fig. 1; Fig. 5 is a detail in perspective of the mechanism for controlling the dumping doors; and Fig. 6 is a sectional detail thereof.

The main center sill or girder of the car comprises a pair of channeled beams 10, 11, running the entire length of the car and forming the compression member of the main truss, the tension member of which comprises the truss-rods 12, 13, one of the struts of the truss being shown at 14.

The body bolsters are built upon the central girder and comprise a pair of lateral bolster members, one of which is shown at 15, extending outwardly from the girder, to the members of which they are securely riveted, and top and bottom plates 16, 17, tying together the two lateral members of the bolster. The body bolster and the end sills 18 extend a little beyond the side walls of the body of the car, and upon their ends there rest a pair of Z-beams 19, 20, the lower flanges 21 of which project outwardly. A pair of channel beams 22, 23, rest upon the upper flanges of the beams 19, 20, their flanges projecting inwardly, and the two sets of beams 19, 20, and 22, 23, constitute the side sills of the car, the upper members of these sills forming also the lower portions of the side walls of the car.

Suitable brackets, as 24, rest upon and are secured to the bolster members 15, and to the inner faces of the Z-beams 19, 20. While but one of these brackets is shown it will be understood that others are similarly applied in like positions. The end sills are tied together at intervals throughout the length of the car by means of rods 25 passing through the Z-beams 19, 20.

The upper portions of the side walls of the car may be of wood, heavy planks, as 26, being used for this purpose and being secured together by means of vertical corner plates 27 and a plurality of stakes 28, shown and preferably taking the form of Z-bars, the lower ends of which are secured to the channel beams 22, 23, the ends of the rods 25 being shown as passing through them.

Four sills or nailing strips 29, 30, rest upon the central girder, and extend the entire length of the car. Blocks of similar cross-sectional form, shown at 31, 32, are placed upon the sill members 15, and upon these several members the floor 33 is laid, its edges extending under the upper flanges of the Z-beams 19, 20. Intermediate of the bolsters 15 the floor is supported between the sills 29, 30, and the sides of the car in part by the tie bolts 25 which, as shown, pass through it.

The floor is provided with numerous door openings, as shown at 34, 35, and these openings are provided with downwardly opening doors 36, hinged adjacent the central girder. Each of the doors comprises a pair of hinge brackets 37, 38, transversely recessed in their upper faces, as shown at 39, 40, cross-bars 41, 42, being fitted within such recesses, and the flooring boards or panel of the door being secured to these cross-bars. Each of the hinge brackets 37 extends downwardly, and its rearward face is obliquely inclined forwardly from the pintles of the hinges. The doors are controlled by means of a shaft 43, suitably journaled in boxes 44, secured to the side faces of the central girder, crank-arms 45 projecting from this shaft and each carrying at its outer end a roller 46, engaging the cam face 47 of the hinge bracket. This cam face is slightly depressed or recessed adjacent its lower end, as plainly shown in Fig. 4, and the parts are so proportioned and positioned that when the roller 46 engages this depression the door is closed and the pressure transmitted to the crank-arm is directly longitudinal therewith, or differently stated, when the door is closed the crank-arm is "on



the center." When the shaft 43 is turned to swing the crank arm upwardly and backwardly, the door is released and opens by its own weight and the weight of the material 5 resting upon it.

The shaft 43 is controlled by means of a hand lever 48, pivoted in a bracket 49 secured to the outer face of the end of the car body. This hand lever 48 swings loosely on 10 the hub 50 of a ratchet wheel 51, fixed on a square shaft 52 mounted in a pair of sleeves 53, 54, journaled in the bracket 49. A reversible pawl 55, carried by the hand lever 48, coöperates with the teeth of the ratchet 15 wheel 51, these teeth being double faced, permitting the pawl to be thrown to engage the wheel to move it in either direction.

A crank-arm 56, fixed upon the shaft 52, is connected by means of a link 57 with a crank- 20 arm 58 fixed upon the shaft 43. The various crank-arms of the door-controlling mechanism are so proportioned that a single movement of the hand lever 48 will open or close the door.

25 I claim as my invention—

1. In a car, the combination with a central girder and body bolsters, of side sills each comprising a beam resting on the bolsters, and a superposed beam forming a part 30 of the side wall of the body of the car.

2. In a car, the combination with a central girder and body bolsters, of floor sills resting on the bolsters, Z-beams resting on the ends of the bolsters and having their up- 35 per flanges directed inward, a floor resting on the floor sills and extending under the upper flanges of the Z-beams, and tie-rods uniting the Z-beams.

3. In a car, the combination with a cen- 40 tral girder and body bolsters, of floor sills resting on the bolsters, Z-beams resting on the ends of the bolsters and having their upper flanges directed inward, a floor resting on the floor sills and extending under the upper 45 flanges of the Z-beams, and channel beams resting on the Z-beams.

4. In a car, the combination with a cen- 50 tral girder and body bolsters, of floor sills resting on the bolsters, Z-beams resting on the ends of the bolsters and having their upper flanges directed inward, a floor resting on the floor sills and extending under the upper

flanges of the Z-beams, and channel beams resting on the Z-beams and having their flanges inclined inward. 55

5. In a car, the combination with a central girder and body bolsters, of floor sills resting on the bolsters, Z-beams resting on the ends of the bolsters and having their upper flanges directed inward, a floor resting 60 on the floor sills and extending under the upper flanges of the Z-beams, and metal beams resting on the Z-beams.

6. In a car, the combination with a central girder and body bolsters, of side sills 65 each comprising a beam resting on the bolsters, a superposed beam forming a part of the side wall of the body of the car, and a floor having downwardly-opening doors.

7. In a car, in combination, a frame, and a 70 floor, downwardly-opening doors in the floor, such doors comprising a pair of recessed hinge members, cross-bars resting in the recesses of the hinge members, and a floor secured to the cross-bars. 75

8. In a car, in combination, a frame and a floor, downwardly-opening doors in the floor, such doors comprising a pair of recessed hinge members having downwardly and forwardly-inclined cam faces, a crank shaft hav- 80 ing arms engaging the cam faces, cross-bars resting in the recesses of the hinge members, and a floor secured to the cross-bars the parts being so positioned as to be centered with reference to the pressure of the door when 85 the latter is closed.

9. In a car, in combination, a frame and a floor, downwardly-opening doors in the floor, such doors comprising a pair of recessed hinge members having downwardly and forwardly-inclined cam faces, a crank shaft hav- 90 ing arms engaging the cam faces, cross-bars resting in the recesses of the hinge members, a floor secured to the cross-bars the parts being so positioned as to be centered with reference to the pressure of the door when the latter is closed, and a hand lever having a reversible pawl and ratchet connection with the crank shaft. 95

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