No. 610,218. Patented Sept. 6, 1898.

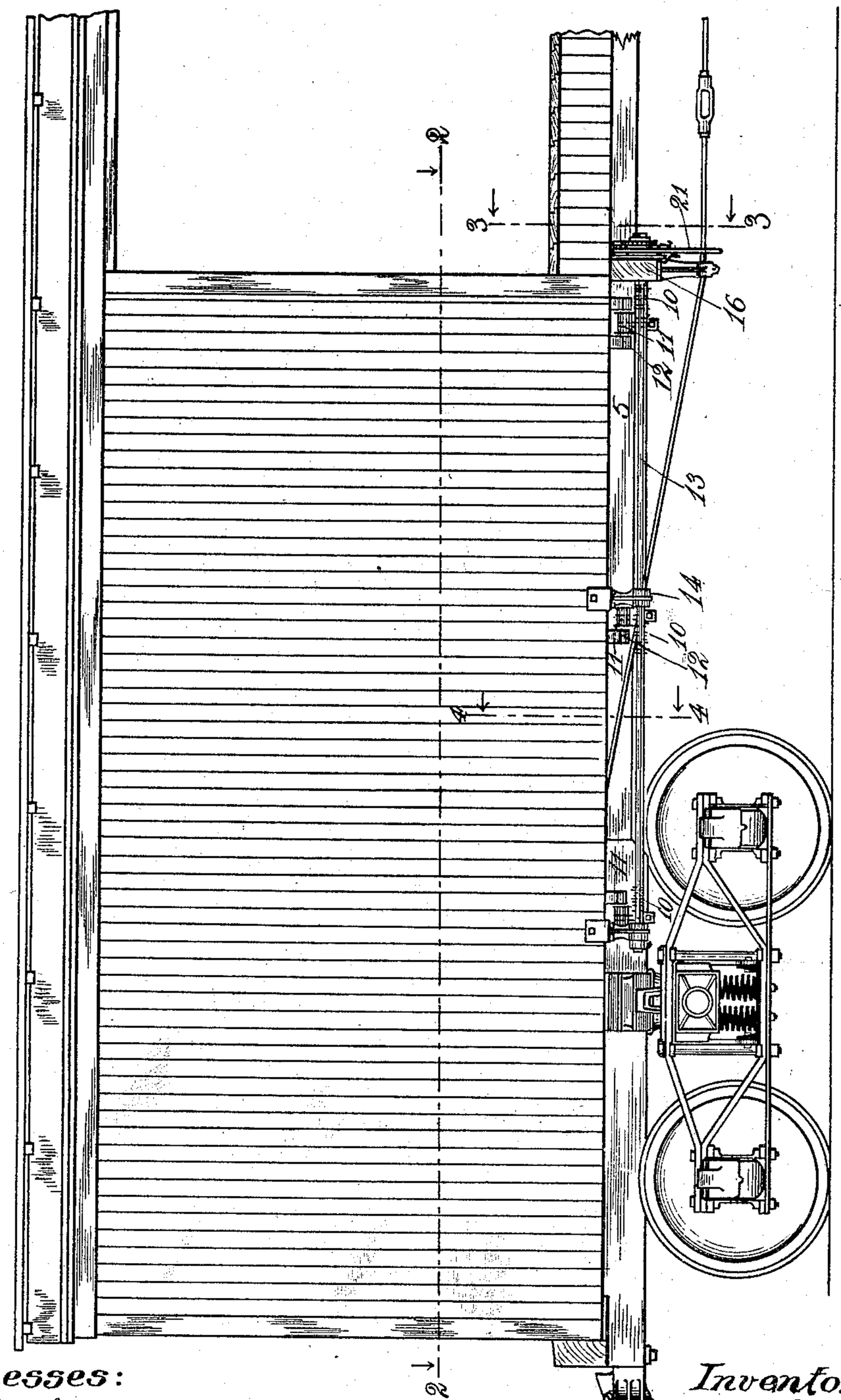
H. C. WILLIAMSON & H. PRIES.

DUMPING CAR.

(Application filed Mar. 23, 1898.)

(No Model.) 6 Sheets—Sheet 1.

Fig. 1.



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(No Model.) 6 Sheets—Sheet 2.

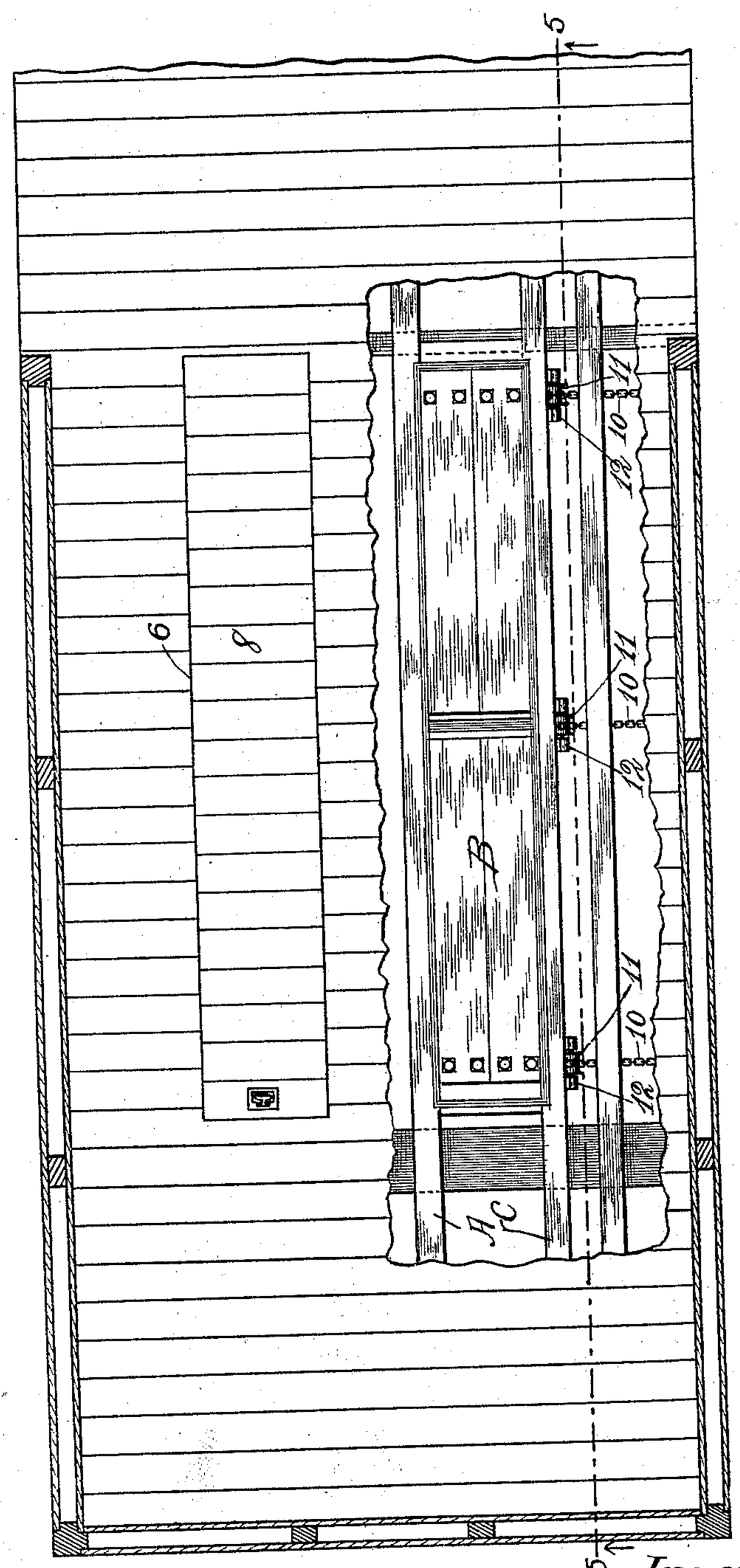

Fig. 2.

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(No Model.) 6 Sheets—Sheet 3.

Fig. 3.

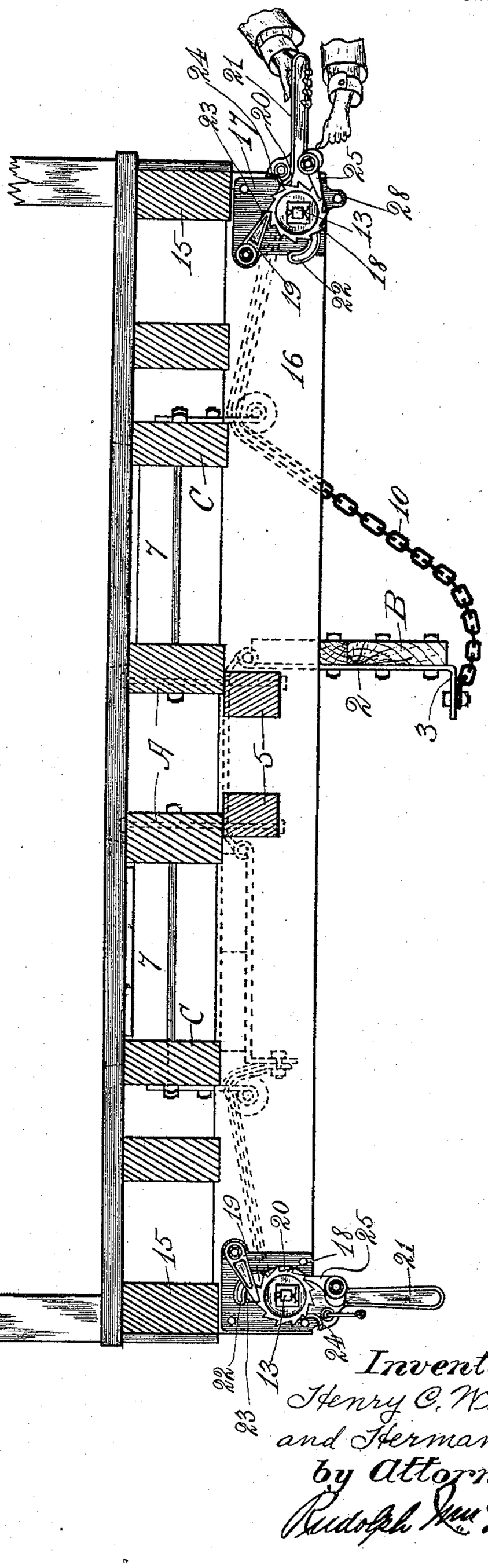
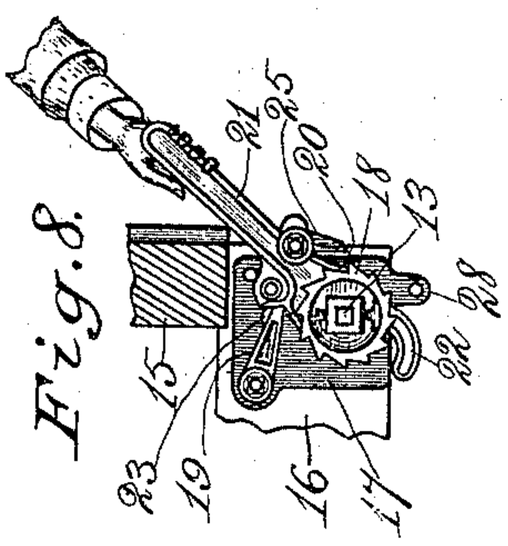


Fig. 8.



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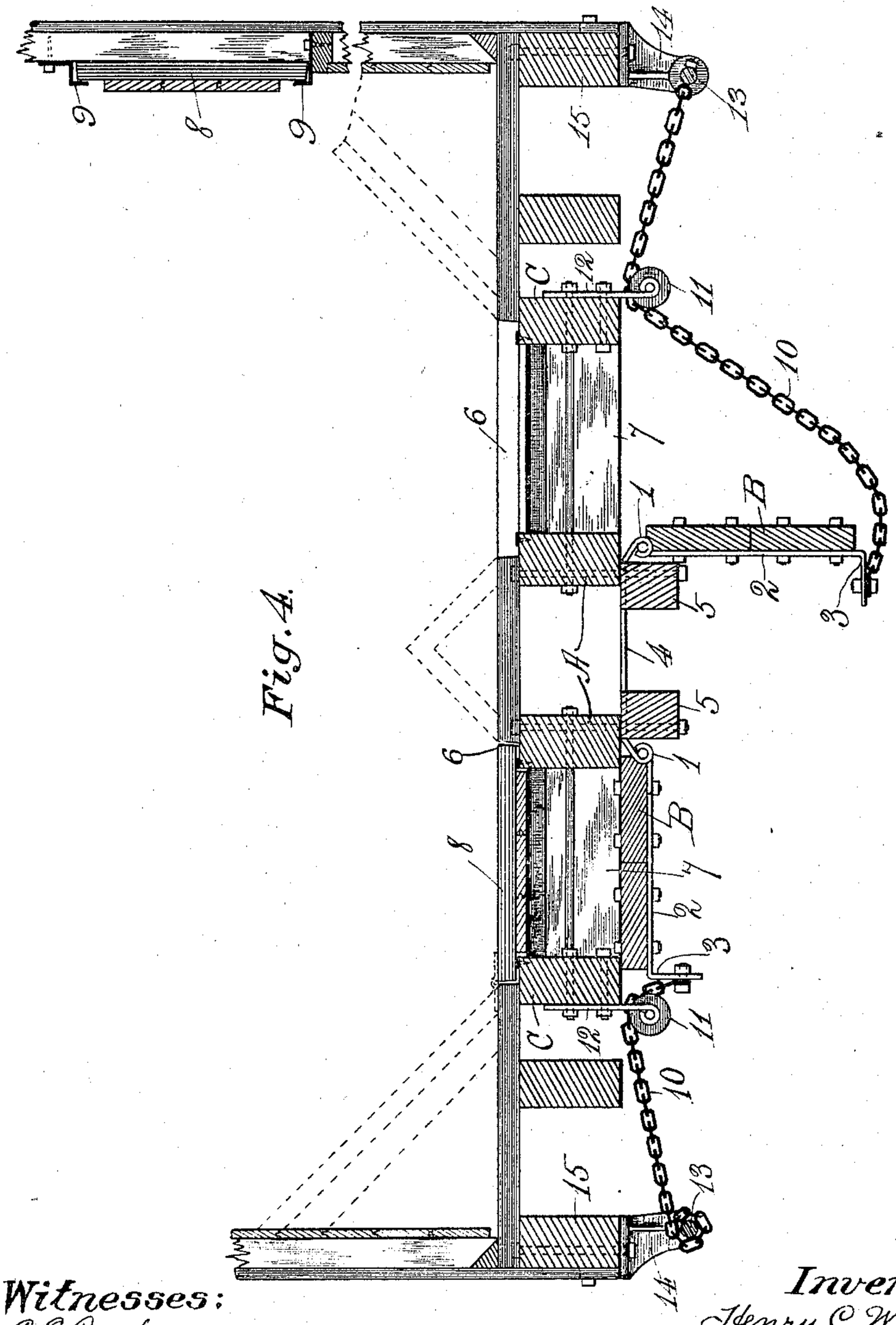
(No Model.) 6 Sheets—Sheet 4.

Fig. 4.



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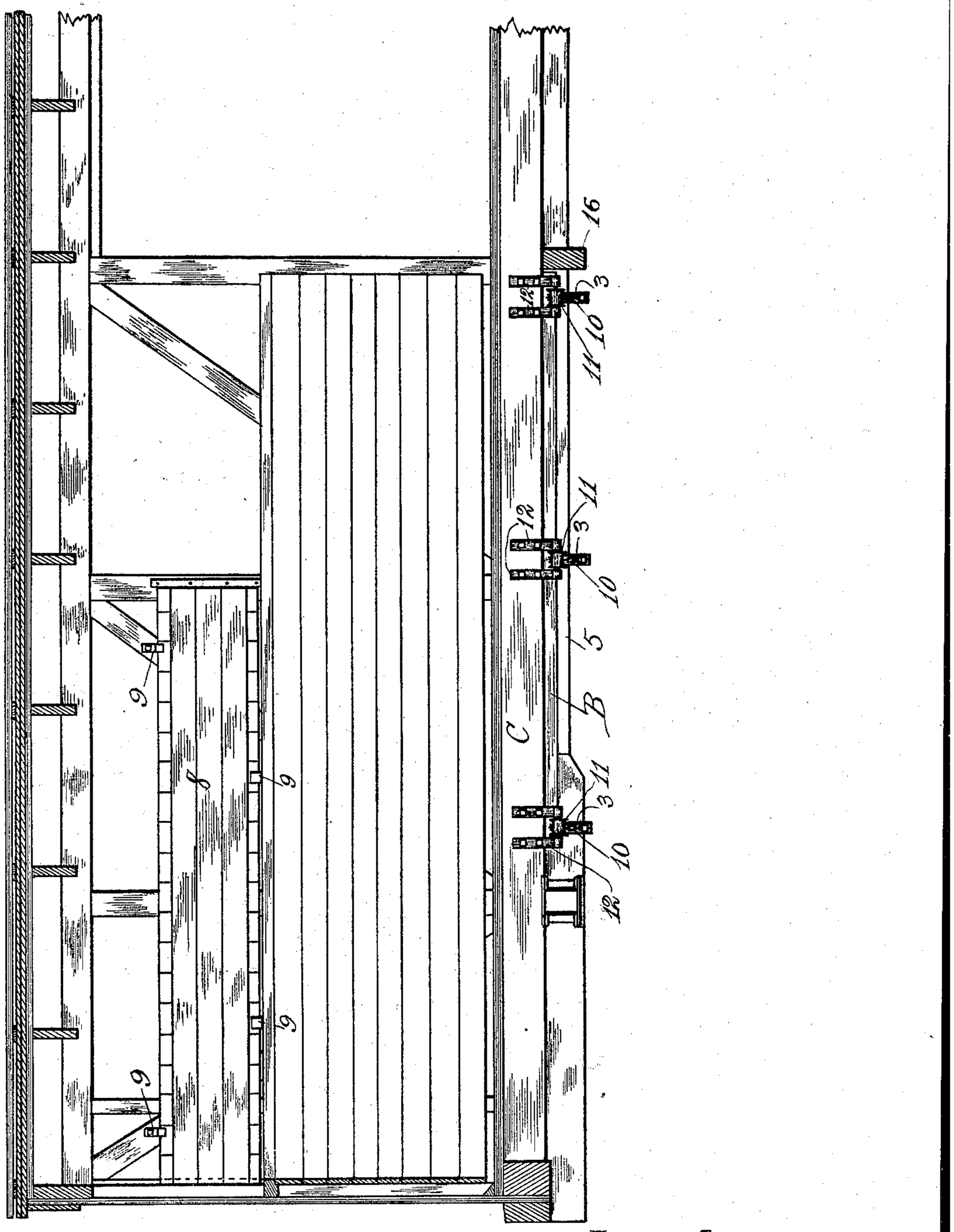
DUMPING CAR.

(Application filed Mar. 23, 1898.)

(No Model.) 6 Sheets—Sheet 5.

Fig. 5.



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DUMPING CAR.

(Application filed Mar. 23, 1898.)

(No Model.) 6 Sheets—Sheet 6.

Fig. 6.

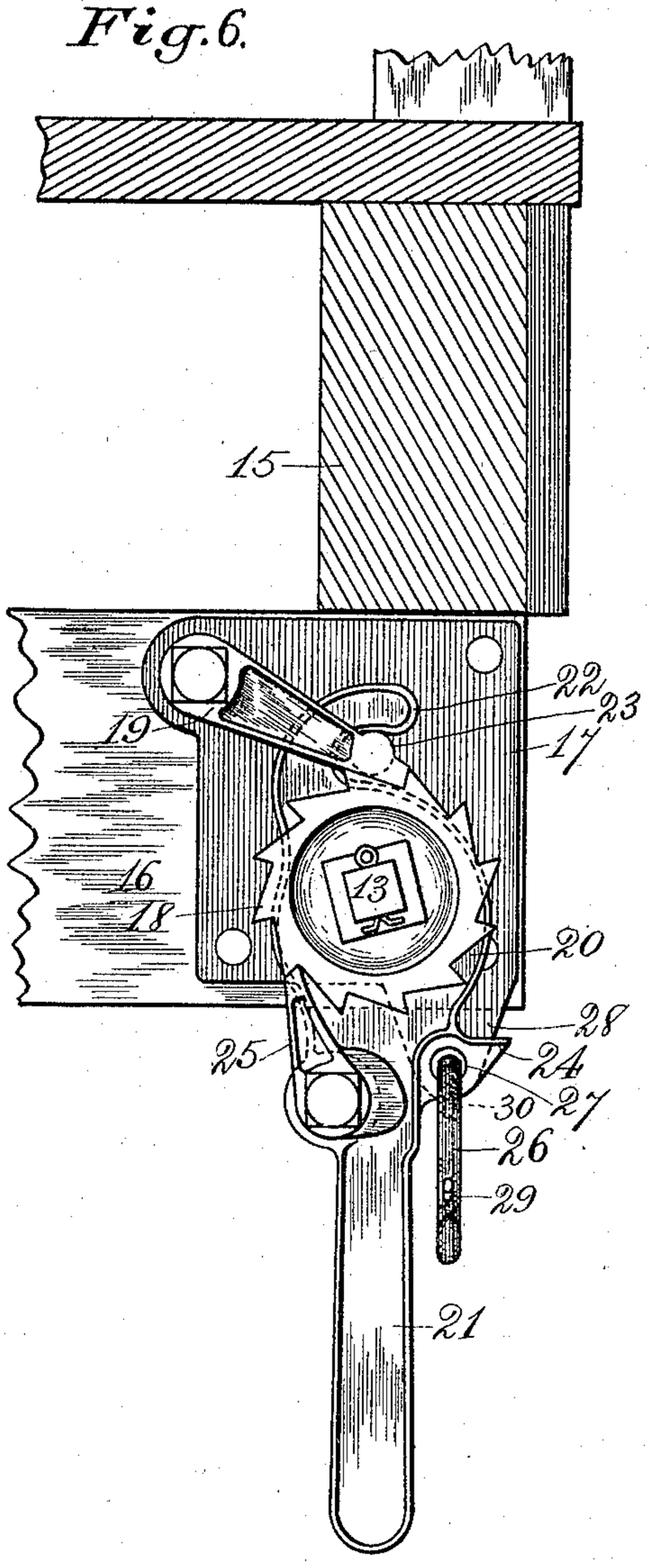
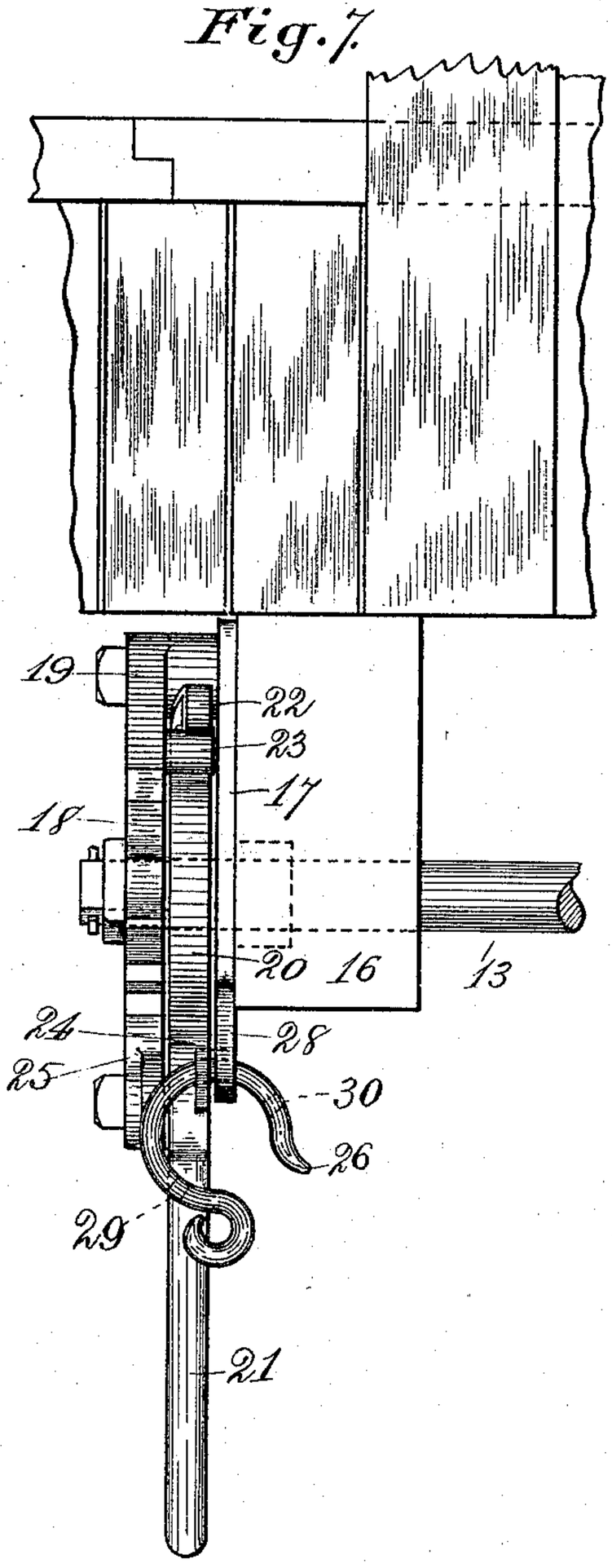


Fig. 7.



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UNITED STATES PATENT OFFICE.

HENRY C. WILLIAMSON AND HERMAN PRIES, OF MICHIGAN CITY, INDIANA.

DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 610,218, dated September 6, 1898.

Application filed March 23, 1898. Serial No. 674,878. (No model.)

To all whom it may concern:

Be it known that we, HENRY C. WILLIAMSON and HERMAN PRIES, citizens of the United States, residing at Michigan City, in the county of La Porte and State of Indiana, 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 a novel construction in a dumping-car of the class known as "bottom-dump" cars, the object being to provide a car of this character of very simple and durable construction and efficient operation; and it consists in the features of construction and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings, illustrating our invention, Figure 1 is a partial side elevation of a dumping-car constructed in accordance with our invention. Fig. 2 is a plan section of same on the line 2 2 of Fig. 1. Fig. 3 is a transverse section on the line 3 3 of Fig. 1. Fig. 4 is another transverse section of same on the line 4 4 of Fig. 1. Fig. 5 is a longitudinal section on the line 5 5 of Fig. 2. Figs. 6 and 7 are detail views in elevation of the devices for operating the dumping members of the car. Fig. 8 is a detail view of said operating devices, showing same in position to dump the contents of the car.

To the center sills A of a car we hinge gates B, which are adapted when closed to lie in close contact with adjacent portions of the lower faces of the sills A and C. The strap-hinges 1, by means of which said gates B are hinged, have one strap 2 each, which traverses said gate B and projects beyond the outer edge of the same, as at 3, said projecting portion 3 being bent about perpendicular to said strap 2 and extending outwardly from the adjacent face of said gate. The strap 4 is preferably common to two of said hinges and is secured to the lower faces of said center sills A and gained into the upper faces of the draft-beams 5, secured to the lower faces of said center sills A. Said strap 4 is bent downwardly at its ends, so as to bring the pivots down to points adjacent the lower faces of said gates B, so that when said gates are closed said pivots will be located practically in vertical alinement with the inner edges of said gates B and relieve the said ends of said straps 4 of the greater portion of the strain which they would otherwise be subjected to. In this manner we are enabled to use lighter material for said hinges without weakening the device. Openings 6 are made in the floor of the car above said gates B, through which the contents of the car are adapted to pass and partially rest upon said gates B. Cross-pieces 7 are mounted between said center sills A at the ends of the gates B to prevent the contents of the car from escaping at said ends of said gates. On the upper faces and adjacent the edges of said center sills A and said cross-pieces 7 iron straps are secured to protect the corners of said parts. Said openings 6 are adapted to be closed by means of hatches or trap-doors 8 when said car is not used as a dumping-car. Said gates B may be hinged or loose, as desired, and if the latter when not in use are hung between hooks 9 at the sides of the car, which are pivotally mounted thereon for obvious reasons. In dotted lines in Fig. 4 we have shown how said car could be converted into a hopper-bottomed car which would be advantageous for dumping purposes. Secured at one of their ends to said projecting portions 3 of said hinges are chains 10, passing over pulleys 11, mounted in hangers 12, secured to the outer faces of the sills C and secured at their other ends to shafts 13, journaled in hangers 14, secured to the lower faces of the side sills 15. Obviously by turning said shafts 13, so as to cause said chains 10 to wind themselves upon the same, said gates B will be raised, and by releasing said shaft to turn freely said gates will fall by gravity. At one end said shafts pass through a cross-beam 16, secured to the sills, on one side of which plates 17 are mounted, through which said shafts 13 pass. Ratchet-wheels 18 are rigidly mounted upon the projecting ends of said shafts 13, which are adapted to be normally engaged by pawls 19, pivotally mounted on said plates and held against turning in the

direction to release said gates. Pivotally mounted upon each of said shafts 13 between said ratchets 18 and plates 17 is an eccentric 20, provided with an operating-lever 21 and with a curved projection or arm 22 opposite said lever 21. Said eccentric 20 is so arranged that adjacent said lever 21 it has greater radius than said ratchet-wheel 18 and adjacent said arm 22 less radius. Said eccentric is adapted to engage a projection 23 on the end of said pawl 19, so that by turning said eccentric to the position shown in Fig. 8 said pawl 19 will be thrown out of engagement with said ratchet, thereby releasing the latter, and thus the shaft 13, thereby permitting the gates B to drop. Said projection 23 on said pawl is adapted to abut against a projection 24 on said eccentric 20 when out of engagement with said pawl 19, thus limiting the movement of said eccentric in one direction. To turn said shaft 13 to raise said gate B, said eccentric 20 is turned to the position shown in Fig. 3 on the right and a pawl 25 on the lever 21 brought into engagement with said ratchet-wheel 18 by pressing on said pawl with the thumb, springs being avoided as much as possible in car construction. In this position of said eccentric 20 said pawl 19 is in engagement with said ratchet 18, and by depressing said lever said ratchet will be turned and held in its new position by said pawl 19. The lever 21 is then again brought to the position shown in Fig. 3 and again depressed, this movement being continued until the gates B are up and tightly pressed into engagement with said sills A and cross-pieces 7. When said gates have been closed and the chains drawn taut, the eccentric is turned to the position shown in Figs. 6 and 7, the pawl 25, if necessary, being released to permit the movement and thrown into engagement again. In this position the projection 23 on the pawl 19 is engaged by the curved arm 22 of said eccentric to prevent said pawl from being forced out of engagement with said ratchet-wheel. In this position said parts are locked by means of a hook 26, passing through a perforation 27 in the projection 24 of said eccentric and through a perforation in a downwardly-extending projection 28 of said plate 17, said hook being provided with openings 29 and 30 for the passage of a seal-wire by means of which said parts are sealed in their locked positions.

This device, it will be noted, is extremely simple and efficient, requires no fine machine-finishing, and is easily operated by any unskilled laborer. It is also applicable for other devices than dumping-cars, as will be obvious.

We claim as our invention—

1. In a dumping-car, the combination with a gate hinged below the car-body and adapted to swing downwardly, and an outwardly-extending projection on the outer edge of said gate, of a chain secured at one end to said projection and passing over a pulley adjacent to said projection and higher than the point of connection of the chain therewith, a shaft mounted in bearings adjacent the side of the car-body and connected with said chain at its other end, and devices for turning said shaft, comprising a ratchet-wheel at one end of same, a pawl engaging said ratchet, a lever carrying devices adapted to engage said pawl to release said ratchet, and a pawl on said lever adapted to engage said ratchet to turn the same, substantially as described.

2. In a dumping-car, the combination with a shaft and dumping devices connected therewith and adapted to be operated therefrom, of means for operating said shaft, comprising a ratchet-wheel on one end of same, a pawl pivoted to a rigid portion of the car adapted to normally rest in engagement with said ratchet, a lever pivoted adjacent said ratchet and carrying devices for throwing said pawl out of engagement to release said ratchet, and a pawl on said lever adapted to coöperate with said first-named pawl to turn said ratchet, substantially as described.

3. In a dumping-car, the combination with a shaft and dumping devices connected therewith and adapted to be operated therefrom, of means for operating said shaft, comprising a ratchet-wheel on one end of same, a pawl pivoted to a rigid portion of the car adapted to normally rest in engagement with said ratchet, a lever pivoted adjacent said ratchet and carrying devices for throwing said pawl out of engagement to release said ratchet, a pawl on said lever adapted to coöperate with said first-named pawl to turn said ratchet, and means on said lever for locking said first-named pawl in engagement with said ratchet, substantially as described.

4. In a dumping-car, the combination with a shaft and dumping devices connected therewith and adapted to be operated therefrom, of means for operating said shaft, comprising a ratchet-wheel on one end of same, a pawl pivoted to a rigid portion of the car adapted to normally rest in engagement with said ratchet, a lever pivoted adjacent said ratchet and carrying devices for throwing said pawl out of engagement to release said ratchet, a pawl on said lever adapted to coöperate with said first-named pawl to turn said ratchet, and an arm on said lever adapted to engage said first-named pawl to lock the same in engagement with said ratchet, substantially as described.

5. In a dumping-car, the combination with a shaft and dumping devices connected therewith and adapted to be operated therefrom, means for operating said shaft comprising a ratchet-wheel on one end of said shaft, a pawl pivoted to a rigid portion of the car adjacent said ratchet and adapted to normally rest in engagement therewith, a projection on said pawl, an eccentric pivoted adjacent said ratchet and adapted to engage said pawl to throw the same out of engagement with said ratchet to release said shaft and dumping devices, a curved arm on said eccentric adapted to form a hook to engage said projection on

said pawl to lock same into engagement with said ratchet, a hand-lever on said eccentric, and a pawl on said hand-lever adapted to be thrown into engagement with said ratchet to turn said shaft, substantially as described.

6. In a dumping-car, the combination with a shaft and dumping devices connected therewith and adapted to be operated therefrom, of means for operating said shaft comprising a ratchet-wheel on one end of said shaft, a pawl pivoted to a rigid portion of the car adjacent said ratchet and adapted to normally rest in engagement therewith, a projection on said pawl, an eccentric pivoted adjacent said ratchet and adapted to engage said pawl to throw the same out of engagement with said ratchet to release said shaft and dumping devices, a curved arm on said eccentric adapted to form a hook to engage said projection on said pawl to lock same into engagement with said ratchet, a hand-lever on said eccentric, a pawl on said hand-lever adapted to be thrown into engagement with said ratchet to turn said shaft, and means for locking said hand-lever and said first-named pawl against movement, substantially as described.

7. In a dumping-car, the combination with a shaft and dumping devices connected therewith and adapted to be operated therefrom, of means for operating said shaft comprising a ratchet-wheel on one end of said shaft, a pawl pivoted to a rigid portion of the car adjacent said ratchet and adapted to normally rest in engagement therewith, a projection on said pawl, an eccentric pivoted on said shaft adjacent said ratchet and adapted to engage said pawl to throw the same out of engagement with said ratchet to release said shaft and dumping devices, a curved arm on said eccentric adapted to form a hook to engage said projection on said pawl to lock same into engagement with said ratchet, a hand-lever on said eccentric, and a pawl on said hand-lever adapted to be thrown into engagement with said ratchet to turn said shaft, substantially as described.

8. In a dumping-car, a shaft connected with and adapted to operate dumping devices, a ratchet at one end of said shaft, a plate mounted on a rigid portion of the car adjacent said ratchet through which said shaft passes, a pawl pivotally mounted on said plate and adapted to normally rest in engagement with said ratchet, an eccentric pivotally mounted on said shaft adjacent said ratchet and adapted to engage said pawl to throw the same out of engagement with said ratchet to release said shaft and dumping devices, a curved arm on said eccentric adapted to form a hook to engage said projection on said pawl to lock same into engagement with said ratchet, a hand-lever on said eccentric, a pawl on said hand-lever adapted to be thrown into engagement with said ratchet to turn the same, a perforated projection on said hand-lever, a perforated projection on said plate, and a hook provided with seal-wire perforations adapted to pass through said perforations in said projections on said hand-lever and plate when said hand-lever reaches the lower limit of its movement, whereby said shaft and first-named pawl are locked against movement, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

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HERMAN PRIES.

Witnesses:
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C. T. COMPTON.