

No. 834,091.

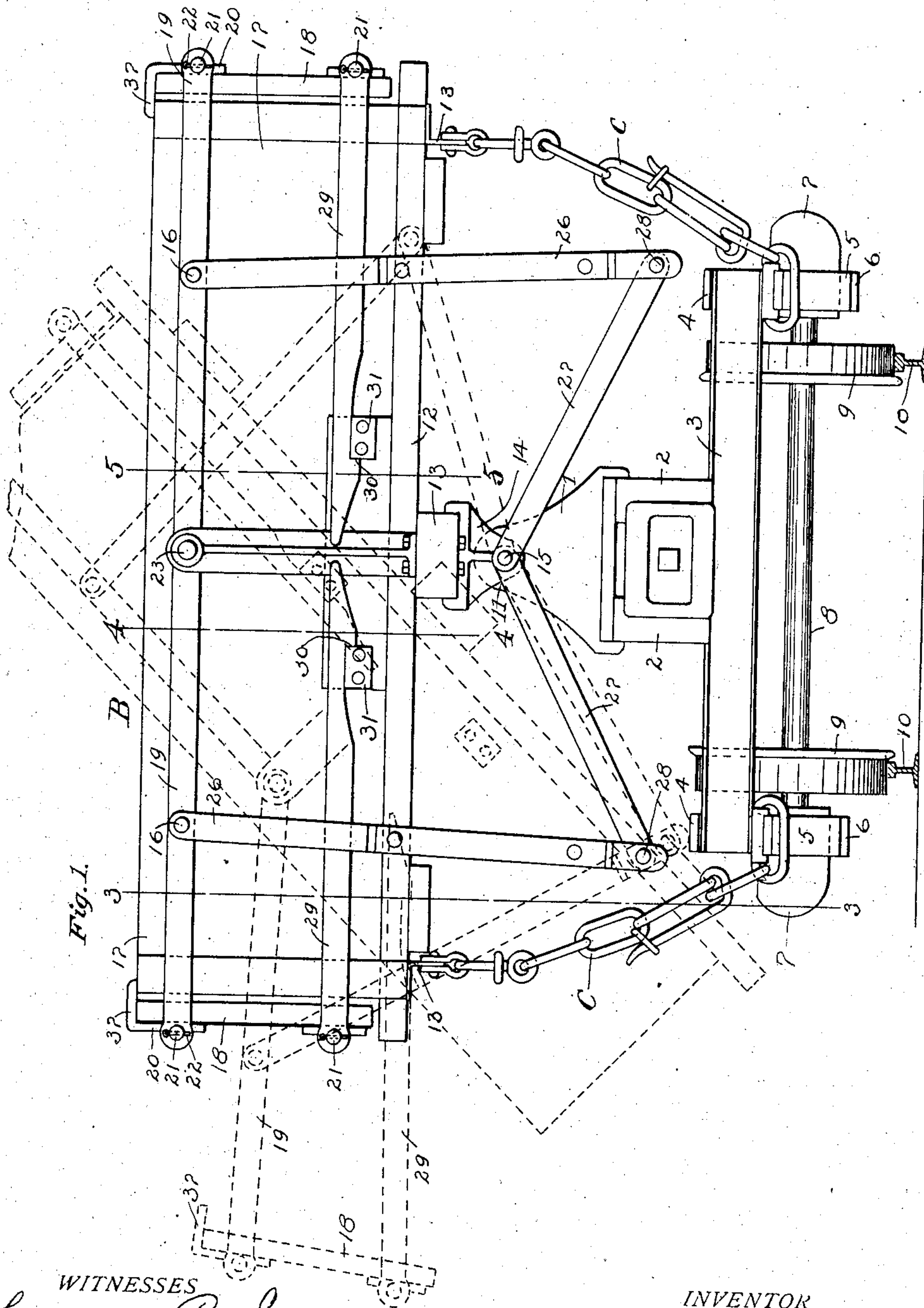
PATENTED OCT. 23, 1906.

W. W. WALLACE.

DUMPING CAR.

APPLICATION FILED FEB. 26, 1906.

3 SHEETS—SHEET 1.



WITNESSES  
Carrie R. Ivy  
M. E. Parmelee

INVENTOR  
William W. Wallace  
By Cyrus K. Ehr  
Attorney

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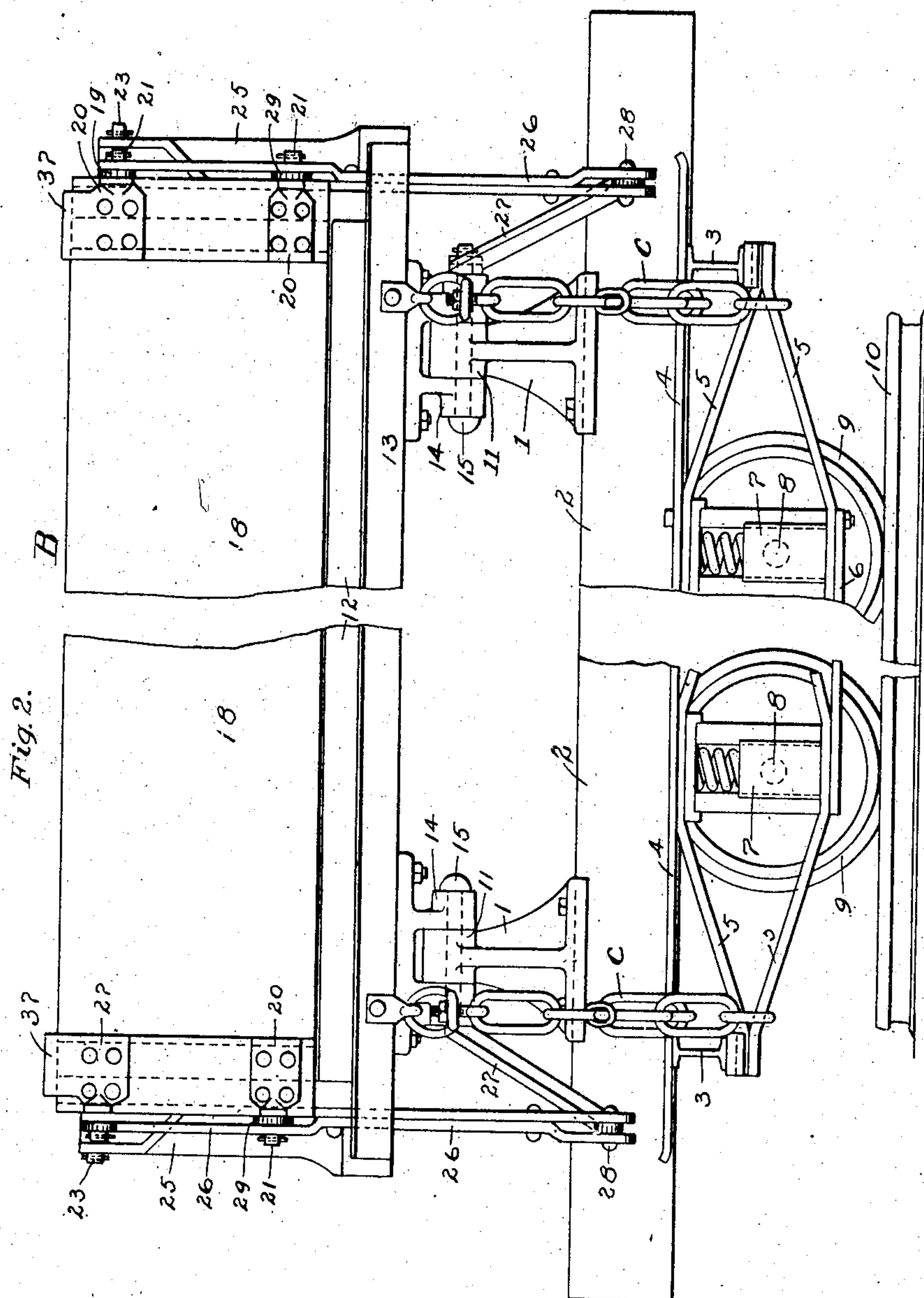
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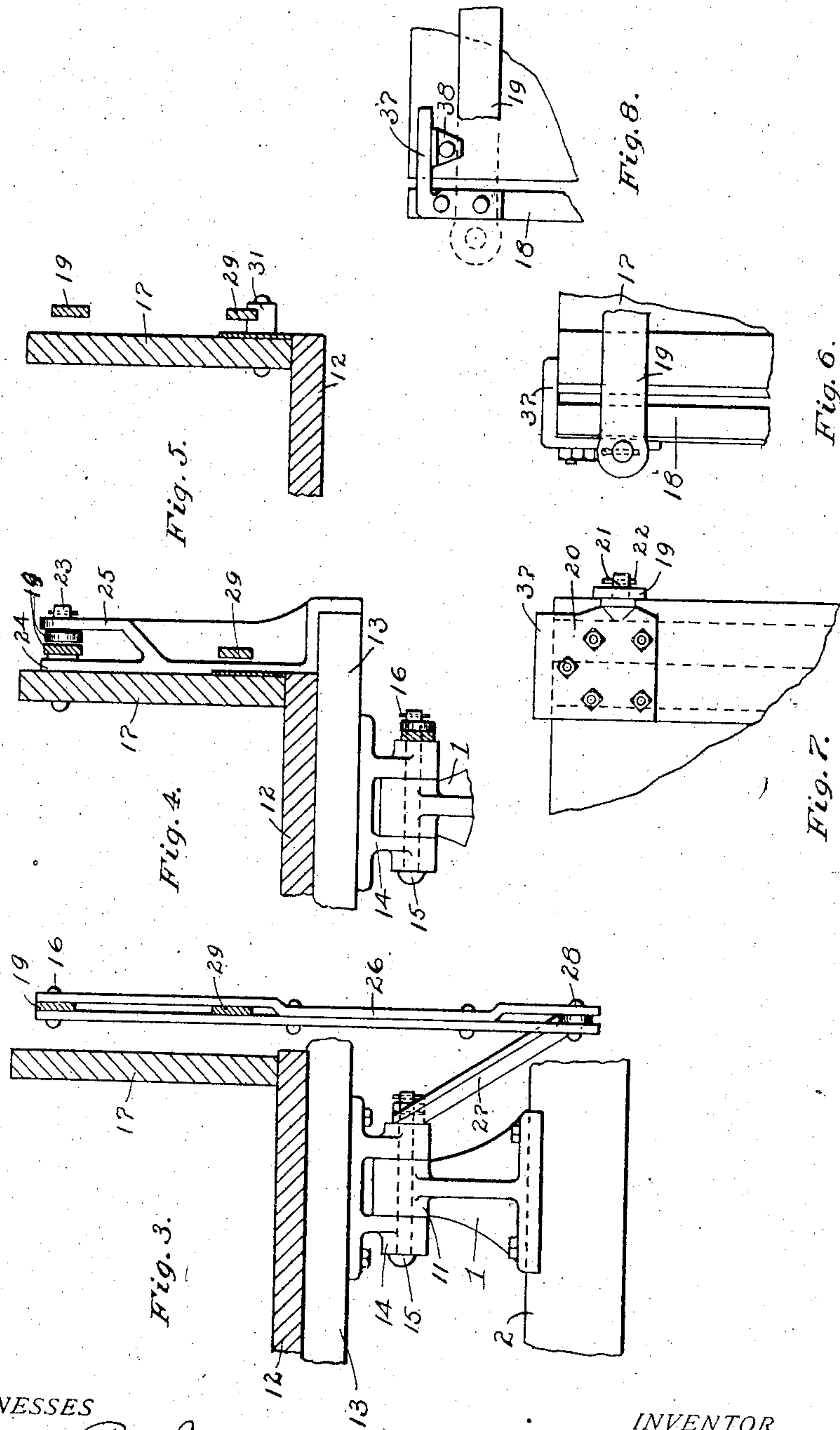
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# UNITED STATES PATENT OFFICE.

WILLIAM W. WALLACE, OF KNOXVILLE, TENNESSEE.

## DUMPING-CAR.

No. 834,091.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed February 26, 1906. Serial No. 302,918.

*To all whom it may concern:*

Be it known that I, WILLIAM W. WALLACE, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Improvement in Dumping-Cars, of which the following is a specification, reference being had to the accompanying drawings.

My improvement relates particularly to dumping-cars comprising a body or box adapted to be tilted laterally and having a door at each side to be opened for the lateral discharge of the load.

The object of the invention is to produce mechanism for automatically shifting either of the doors into the open and closed positions.

The improvement is applicable to the dumping-car made the subject-matter of Letters Patent of the United States No. 781,577, granted to me January 31, 1905. In the car described by said patent the door at the lower side of the tilted car is relatively elevated and suspended at its upper corners from two bars, while the lower edge of the door is free to swing outward away from the car-body to permit the ready passage of the load of material from the car-body, a locking-bar being applied to each lower corner of said door and to the end of the car in proper relation to lock said door after the latter has been closed.

The object of the present improvement is to modify the mechanism for locking the lower portion of the door after it has been brought into the closed position.

This application also illustrates and describes mechanism for positively swinging the lower portion of the door against the car-body while the door descends through the lower portion of its up-and-down range of movement. Said mechanism is a portion of the subject-matter of another application for Letters Patent for dumping-cars executed by me of even date herewith.

In the accompanying drawings, Figure 1 is an end elevation of a car embodying my improvement, the right-hand portion being broken away. Fig. 2 is a side elevation of the structure shown in Fig. 1. Fig. 3 is a section on the line 3 3 of Fig. 1 looking to the right. Fig. 4 is a section on the line 4 4 of Fig. 1 looking to the right. Fig. 5 is a sec-

tion on the line 5 5 of Fig. 1 looking to the right. Figs. 6 and 7 are enlarged detail views of one of the upper corners of the car-body. Fig. 8 is a detail view of a modification.

Referring to said drawings, 1 1 1 are upright bearing-blocks arranged in a horizontal line extending lengthwise over the middle longitudinal line of the truck. Said bearing-blocks rest upon longitudinal beams 2 2, and said beams are supported upon cross-beams 3 3. To the outer ends of said cross-beams are secured longitudinal plates 4, 5, 5, and 6, and said plates support axle-boxes 7, which receive the ends of the axles 8, and said axles are surrounded by wheels 9, resting on the rails 10. Said bearing-blocks 1 have horizontal bearings 11, arranged in the same horizontal line. The car-body B is supported pivotally in said bearings, so that said body may tilt toward either side of the truck. Along the bottom 12 of the car-body is a sill 13, parallel to the length of the car and midway between its sides. Above each bearing-block 1 a bearing-block 14 is applied to the lower face of said sill 13. Said block is recessed transversely to receive the upper portion of the adjacent bearing-block 1, and a bolt 15 extends horizontally through the bearings of said two bearing-blocks and is secured in any suitable manner, as by means of a key or cotter 16 extending through the free end of the bolt adjacent the bearing-block 14. The body B comprises the relatively stationary floor or bottom 12, the relatively stationary end walls 17, and the shiftable walls or doors 18. As the doors are preferably duplicates, only one need be described in detail, and as the mechanism at one end of each door is a duplicate of the mechanism at the other end of the door the mechanism at only one end need be described in detail. Obviously the car may have only one door. Each door is supported by a bar 19, hinged to the door near the upper corner of the latter. To form said hinge, the drawings show ears 20, applied to the outer face of the door adjacent to said bar and having journals 21, extending through said bar, and cotter-pins 22, extending through said journals outside of said bar. The bars 19 have their inner ends hinged to the car-body to permit movement in a plane parallel to the end wall of the



car. For convenience and economy in construction I have shown in the drawings the ends of said bars overlapping and secured by a single bolt 23, said bolt passing loosely through said bars and preferably immovably through the adjacent end wall 17, the filling-block 24 interposed between said bars and said wall, and the upright brace-plate 25 extending over said bars outside of the latter.

Between the ends of each bar 19 a lifting member 26 is hinged by its upper end to the bar 19 by a horizontal bolt 16 and extends thence downward to a point a little above the end of the horizontal plate 4, where it is hinged to one end of a link 27 by a horizontal bolt 28. The opposite end of said link 27 loosely surrounds the outer end of the adjacent bolt 15, which extends through the adjacent bearing-blocks 1 and 14. From the foregoing description it will be seen that said lifting member 26 controls the adjacent bar 19. When the car-body is in the horizontal position, the lower end of each lifting member is a little above the adjacent horizontal plate 4, and each such member is suspended from the adjacent bar 19, and the latter is supported by the hinge-bolt 23 and the adjacent door, the latter resting upon the car-body, as will be hereinafter described. When the car-body is moved from the horizontal into the tilted position, as shown by the dotted lines in Fig. 1 of the drawings, the lower end of the lifting member 26 at the side of the car-body which is lowered soon rests upon the adjacent plate 4 and is thereby prevented from descending farther. Hence as the side of the car descends farther the adjacent bar 19 and the adjacent door 18 are held against further downward movement, excepting the limited downward movement due to the lowering of the upper end of said lifting member by the outward turning of said member upon its lower end in response to the lateral or outward movement of said bar 19 by the lateral movement of the hinge-bolt 23, to which the inner end of said bar is secured. Chains C, attached to each side of the car-body and the adjacent portions of the car-truck, serve to hold the car-body in the horizontal position. When the load is to be dumped, the chains opposite the discharge side of the car are released. To the lower corner of the door is secured another car 20, also having a journal 21, and said journal extends through a bar 29, which is normally approximately parallel to the bar 19.

The upper portion of the lifting member 26 is preferably forked, the arms of said fork standing at opposite sides of the bars 19 and 29. By being thus placed into said forks said bar 29 is guided in its approximately longitudinal movements for the opening and closing of the door. The lower edge of the free or inner end of said bar 29 has a shoulder 30 directed outward and below said bar when

the latter is in its normal position, and in front of said shoulder is a suitable stop 31, applied immovably to the end of the car-body. By means of said stop and said shoulder said bar is immovably held and said door is firmly locked in the closed position; but when that side of the car-body is lowered, as already described, the adjacent lifting member 26 relatively lifts the adjacent bar 19, whereby the door is lifted, and at the same time said bar 29 is engaged in the lower portion of the fork of said lifting member 26, and thereby lifted far enough to disengage the shoulder 30 from the stop 31 and render said bar 29 free to move bodily outward by the outward pressure of the material in the car against the adjacent door. Such outward movement of said bar may continue until the shoulder 30 bears against the lifting member 26. The bar 29 may be operated manually for releasing the lower portion of the door when the car-body is in the horizontal position.

When the car is in the tilted position and the door raised, as described, the lower portion of the door is free to swing in either direction. Inasmuch as the upper ears 20 are applied to the outer face of the door, the door has a tendency to tilt, the lower edge going outward. When the car has returned to the horizontal position, the door descends by its weight. To cause such downward movement to force the lower portion of the door to swing inward, I extend an arm 37 inward from the upper portion of the door in proper position to bear downward upon a relatively fixed portion of the car. In the form shown in Figs. 1, 6, and 7 of the drawings said arm is integral with the upper ear 20 and extends over a portion of the upper edge of the adjacent end wall of the car-body, so that when the door descends said arm bears upon said end wall and forces the door to turn upon the upper journals 21. In Fig. 8 said arm 37 extends over a portion of the outer face of the adjacent end wall and normally bears downward upon a stud or stop 38, extending horizontally outward from said end wall. When this construction is used, the bar 19 must stand outward far enough to clear the stop 38. It will be observed that said arms 37 will thus force the lower portion of the door into its normal position, and thereby push the bar 29 inward far enough to cause it to pass over the stop 31 far enough to bring the shoulder 30 beyond the stop 31 and then fall by gravity and engage said shoulder with said stop.

I claim as my invention—

1. The combination with a truck and a tiltable car-body mounted upon said truck and comprising a movable door, of bars, 19, hinged by their outer ends to the upper portion of the door and by their inner ends to the car-body, bars, 29, hinged by one end to



the lower portion of the door and having near the other end a shoulder directed toward the door, stationary means for engaging said shoulder when the door is in the closed position, and mechanism for lifting said bars, 19, and said bars, 29, when the adjacent side of the car-body descends, substantially as described.

2. The combination with a truck and a tiltable car-body mounted upon said truck and comprising a movable door, of bars, 19, hinged by their outer ends to the upper portion of the door and by their inner ends to the car-body, bars, 29, hinged by one end to the lower portion of the door and having near the other end a shoulder directed toward the door, stationary means for engaging said shoulder when the door is in the closed position, and lifting members joined to the bars, 19, and loosely engaging said bars, 29, substantially as described.

3. The combination with a truck and a tiltable car-body mounted upon said truck and comprising a movable door, of bars, 19, hinged by their outer ends to the upper portion of the door and by their inner ends to the car-body, bars, 29, hinged by one end to the lower portion of the door and having near the other end a shoulder directed toward the door, stationary means for engaging said shoulder when the door is in the closed position, and forked lifting members joined to said bars, 19, and loosely surrounding said bars, 29, substantially as described.

4. The combination with a truck and a tiltable car-body mounted upon said truck and comprising a movable door, of bars, 19, hinged by their outer ends to the upper portion of the door and by their inner ends to the car-body, bars, 29, hinged by one end to the lower portion of the door and having near the other end a shoulder directed toward the door, stationary means for engaging said shoulder when the door is in the closed position, mechanism for lifting said bars, 19, and said bars, 29, when the adjacent side of the car-body descends, and mechanism for forcing the lower portion of the door toward the car-body while the door descends through the lower portion of its up-and-down range of movement, substantially as described.

5. The combination with a truck and a tiltable car-body mounted upon said truck and comprising a movable door, of bars, 19, hinged by their outer ends to the upper portion of the door and by their inner ends to the car-body, bars, 29, hinged by one end to the lower portion of the door and having near the other end a shoulder directed toward the door, stationary means for engaging said shoulder when the door is in the closed position, lifting members joined to the bars, 19, and loosely engaging said bars, 29, and mechanism for forcing the lower portion of the door toward the car-body while the door de-

scends through the lower portion of its up-and-down range of movement, substantially as described.

6. The combination with a truck and a tiltable car-body mounted upon said truck and comprising a movable door, of bars, 19, hinged by their outer ends to the upper portion of the door and by their inner ends to the car-body, bars, 29, hinged by one end to the lower portion of the door and having near the other end a shoulder directed toward the door, stationary means for engaging said shoulder when the door is in the closed position, forked lifting members joined to said bars, 19, and loosely surrounding said bars, 29, and mechanism for forcing the lower portion of the door toward the car-body while the door descends through the lower portion of its up-and-down range of movement, substantially as described.

7. The combination with a truck and a tiltable car-body mounted upon said truck and comprising a movable door, of bars, 19, hinged by their outer ends to the upper portion of the door and by their inner ends to the car-body, bars, 29, hinged by one end to the lower portion of the door and having near the other end a shoulder directed toward the door, stationary means for engaging said shoulder when the door is in the closed position, mechanism for lifting said bars, 19, and said bars, 29, when the adjacent side of the car-body descends, and arms, 37, applied to the upper portion of the door and extending laterally in proper position to bear upon a relatively stationary portion of said body when the door is in its normal position, substantially as described.

8. The combination with a truck and a tiltable car-body mounted upon said truck and comprising a movable door, of bars, 19, hinged by their outer ends to the upper portion of the door and by their inner ends to the car-body, bars, 29, hinged by one end to the lower portion of the door and having near the other end a shoulder directed toward the door, stationary means for engaging said shoulder when the door is in the closed position, lifting members joined to the bars, 19, and loosely engaging said bars, 29, and arms, 37, applied to the upper portion of the door and extending laterally in proper position to bear upon a relatively stationary portion of said body when the door is in its normal position, substantially as described.

9. The combination with a truck and a tiltable car-body mounted upon said truck and comprising a movable door, of bars, 19, hinged by their outer ends to the upper portion of the door and by their inner ends to the car-body, bars, 29, hinged by one end to the lower portion of the door and having near the other end a shoulder directed toward the door, stationary means for engaging said shoulder when the door is in the closed posi-



tion, forked lifting members joined to said bars, 19, and loosely surrounding said bars, 29, and arms, 37, applied to the upper portion of the door and extending laterally in  
5 proper position to bear upon a relatively stationary portion of said body when the door is in its normal position, substantially as described.

In testimony whereof I have signed my name, in presence of two witnesses, this 23d day of February, in the year 1906.

WILLIAM W. WALLACE.

Witnesses:

R. B. STOUT,  
CYRUS KEHR.