

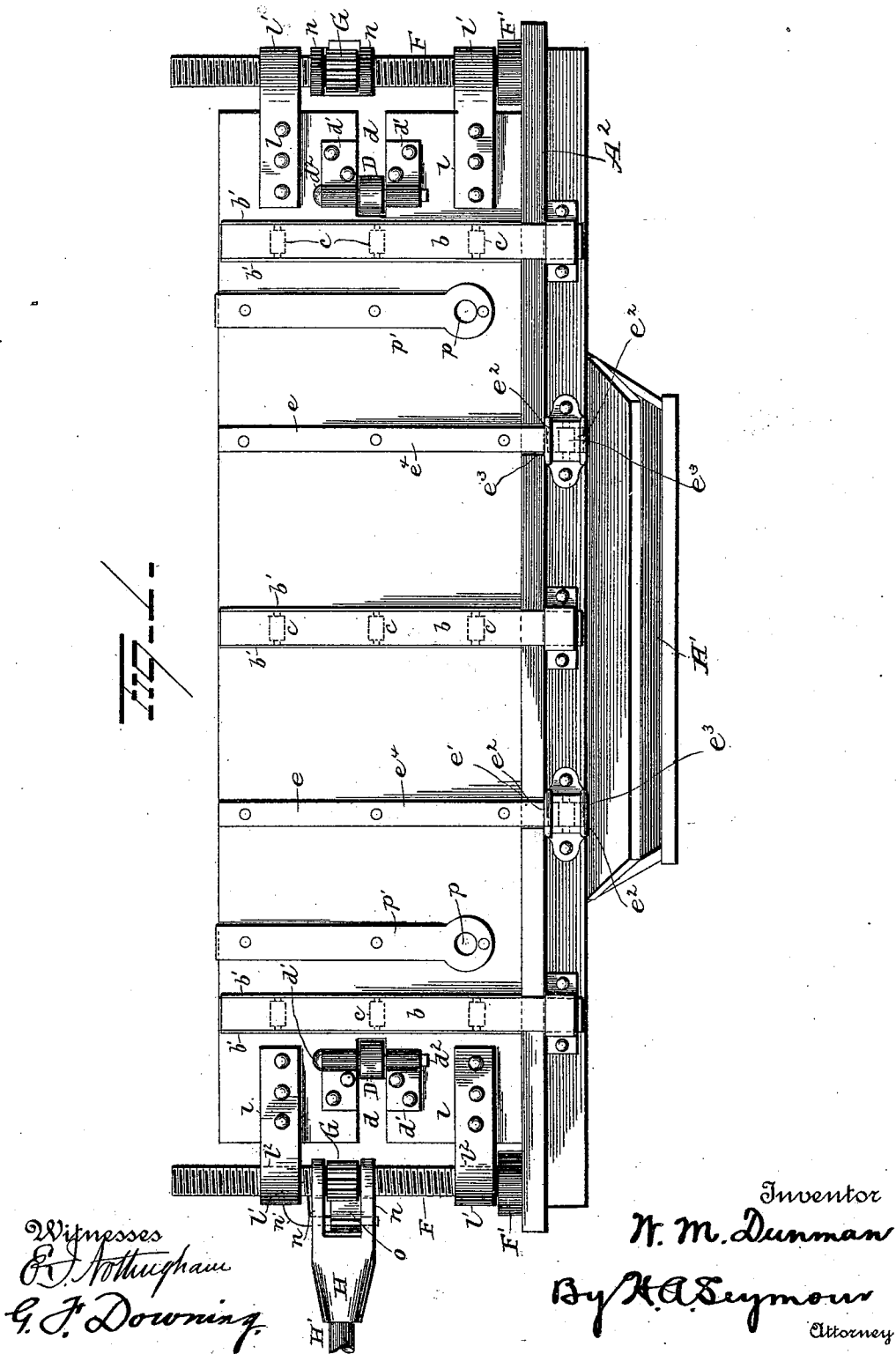
(No Model.)

4 Sheets—Sheet 1.

W. M. DUNMAN.
DUMPING CAR.

No. 544,249.

Patented Aug. 6, 1895.



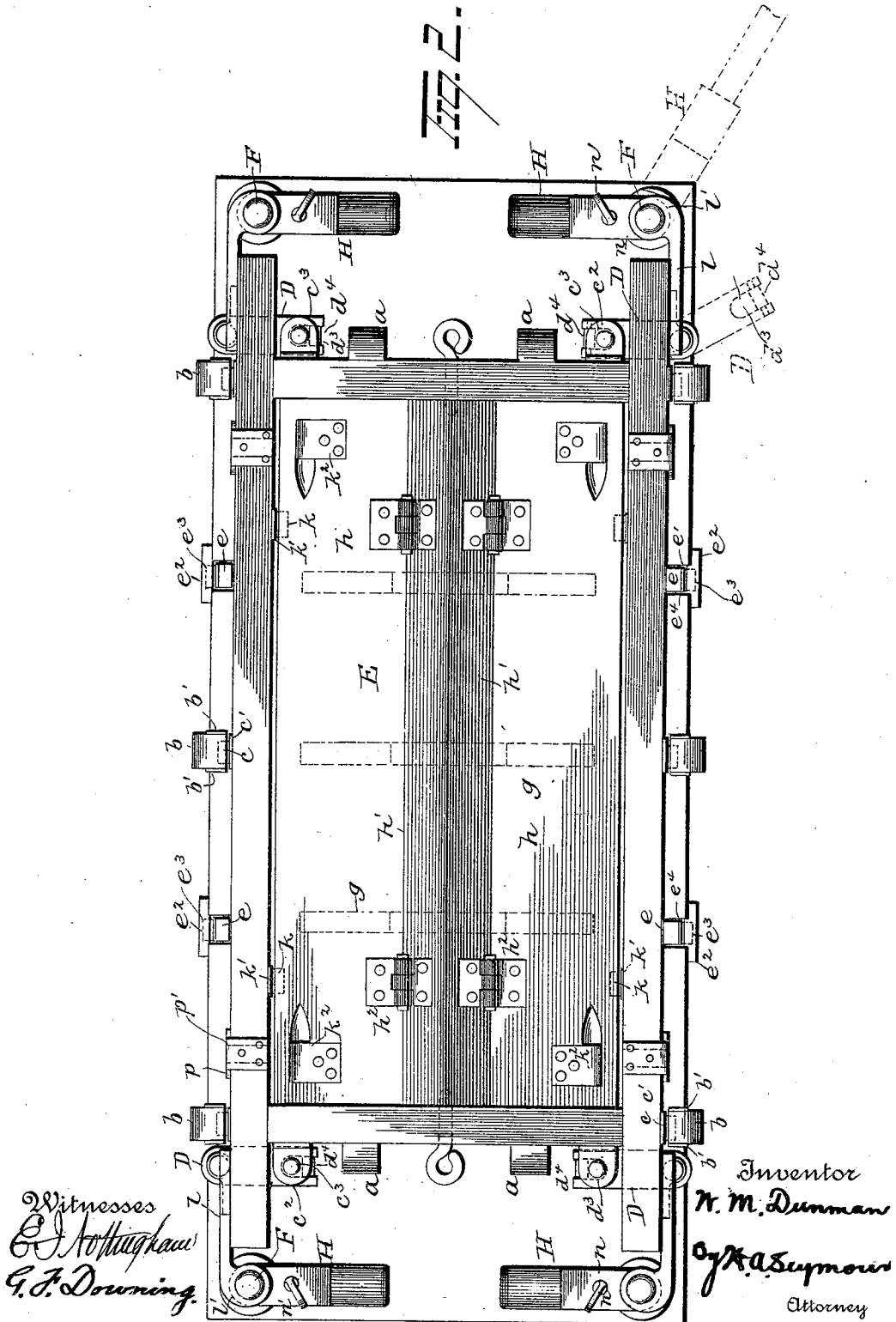
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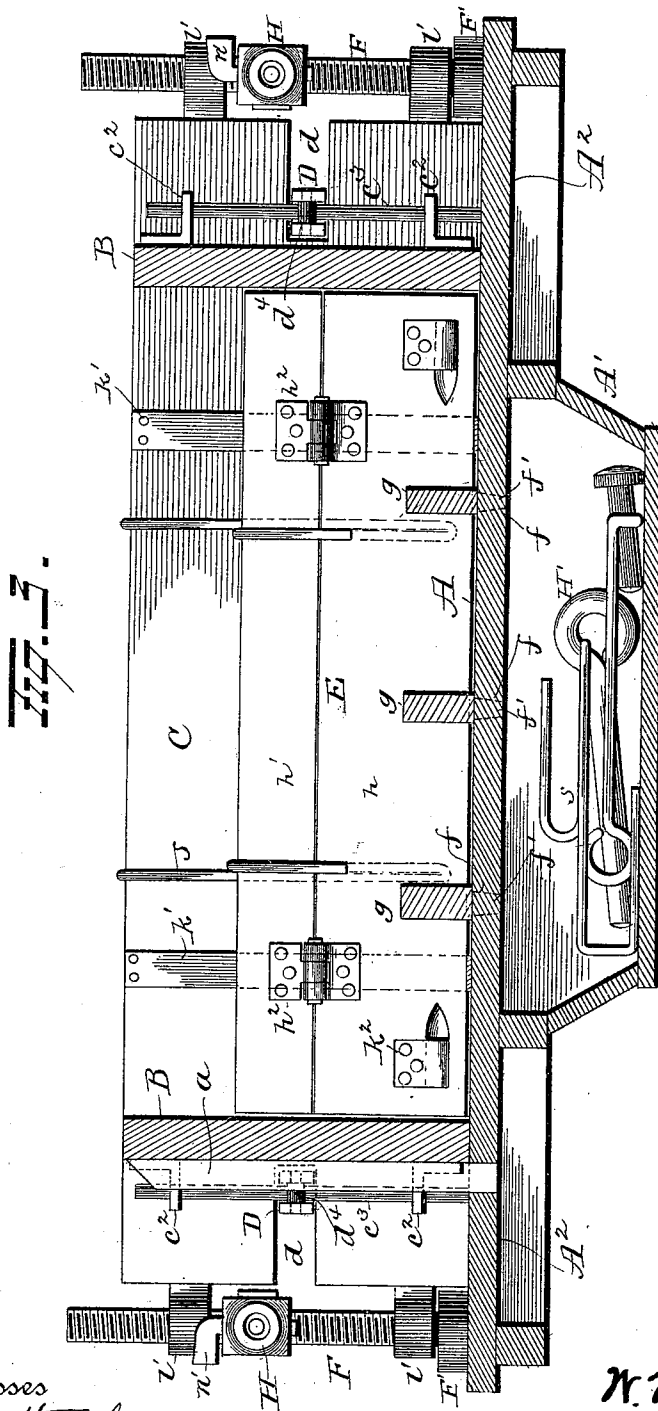
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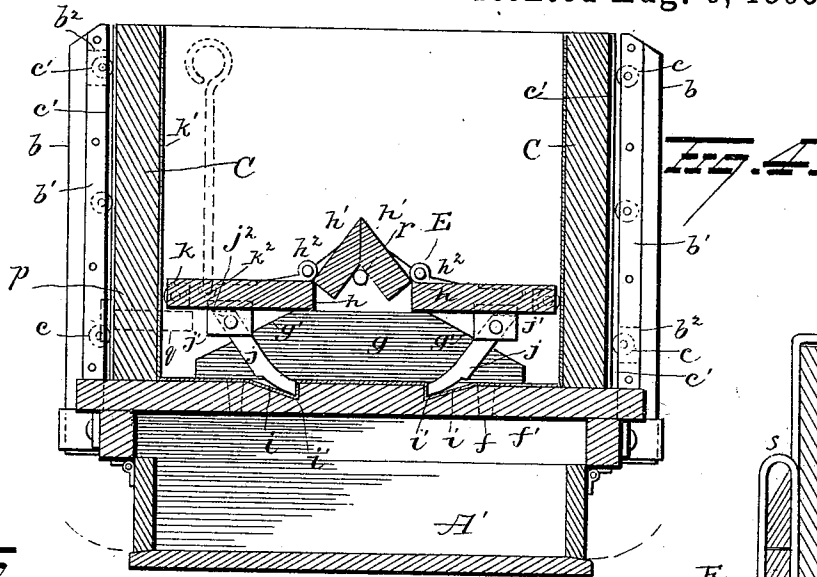


Fig. 4.

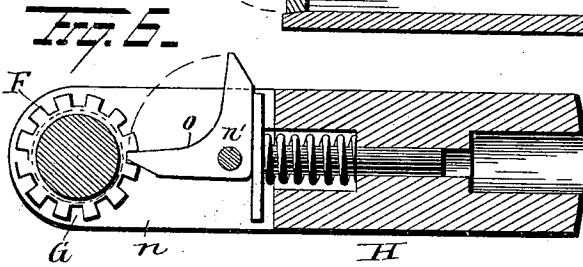


Fig. 6.

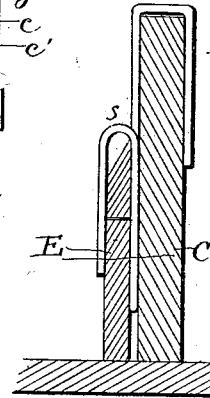


Fig. 7.

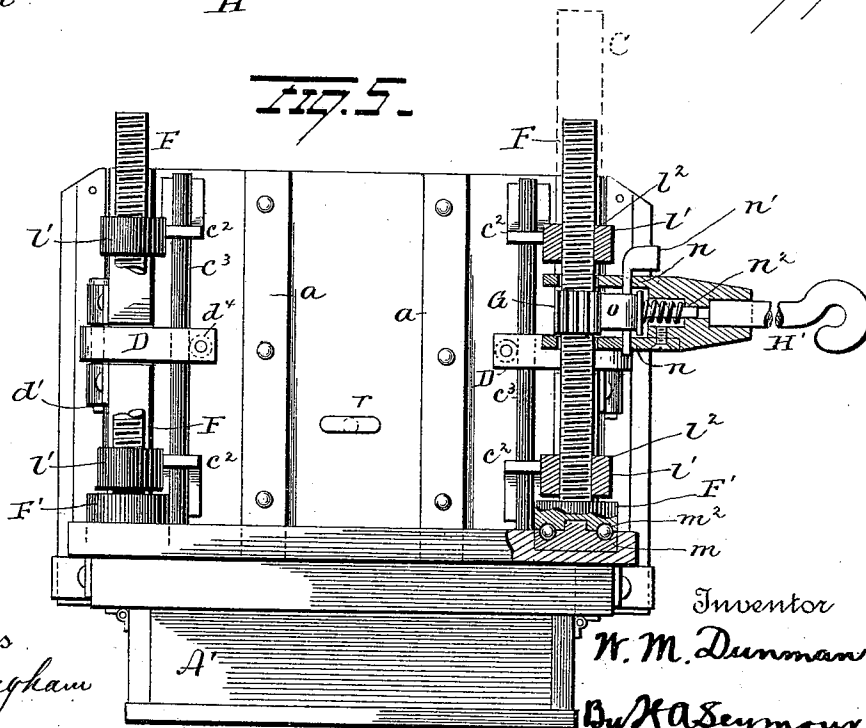


Fig. 5.

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UNITED STATES PATENT OFFICE.

WILLIAM M. DUNMAN, OF RUSK, TEXAS.

DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 544,249, dated August 6, 1895.

Application filed April 4, 1895. Serial No. 544,447. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. DUNMAN, a resident of Rusk, in the county of Cherokee and State of Texas, have invented certain new and useful Improvements in Dumping-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.

My invention relates to an improvement in cars, and more particularly to dumping-cars, one object of the invention being to produce a dumping-car which can be operated by two men to discharge its contents with a comparatively small amount of exertion on the part of the operators.

A further object is to so construct a car that it can be employed for conveying gravel, &c., which can be readily and quickly dumped or discharged therefrom, and to so construct the car that it can be readily adapted for carrying large freight of any description.

A further object is to so construct a car that its contents can be discharged at one or both sides thereof, as desired.

A further object is to provide means whereby to cause the contents of a car to be discharged automatically when the side of the car is raised.

A further object is to provide simple and efficient means for raising and lowering the sides of the car.

A further object is to provide a car having movable sides with means whereby to reduce the friction to a minimum when said sides are raised or lowered.

A further object is to provide a dumping-car with simple means whereby to reduce the friction of all the movable parts of the car.

A further object is to produce a dumping-car which shall be simple in construction, cheap to manufacture, easy to manipulate, and which shall be effectual in all respects in the performance of its functions.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side view. Fig. 2 is a plan view. Fig. 3 is

a longitudinal sectional view showing the false bottom removed and supported parallel with the inner face of the side of the car. Fig. 4 is a cross-section of the car with the false bottom in place. Fig. 5 is an end view. Figs. 6 and 7 are detail views.

A represents the car-bottom, which will be mounted on axles in any suitable manner and preferably provided on its under side with a boot A' for the reception of certain contrivances and other devices which it may be desired to place therein when not in use.

The ends B B of the car are provided with bars a, which project somewhat below the lower edges of said end pieces and enter sockets made in the car-bottom A. The sides C C, which project at both ends beyond the ends B B of the car, are supported in their vertical position by means of standards b b b, secured to the car-bottom, and by the ends B. Each standard b is provided with bracing plates or strips b', and in the inner faces of said standards sockets are made for the reception of steel bearing-plates b², in which latter small rollers c are mounted and adapted to roll on iron or steel strips c', secured to the sides C, whereby to reduce friction when the sides are raised or lowered. Perforated arms c² are secured to the ends B of the car, and through said arms rods or bolts c³ are passed, said rods or bolts bearing at their lower ends on the platforms A² of the car.

The ends of the sides C C of the car are made with slots d, and at opposite sides of each slot d brackets d' are secured for the reception of a pin d², which pivotally connects a swinging latch D to said brackets. The latches D, which are adapted to swing through the slots d and become disposed parallel with the outer faces of the ends B of the car, are made at their free ends with slots d³ for the accommodation of the rods or bolts c³. Each swinging latch D is provided, at or near the outer end of the slot d³ therein, with a roller d⁴, adapted to roll on the rods or bolts c³, and thus reduce friction between said latches and rods or bolts when the sides C C are raised or lowered.

Bars or standards e are secured to the outer faces of the sides C C of the car, and projecting below the lower edges thereof pass through notches e' in the car-bottom and through

brackets e^2 secured to the latter. In each bracket e^2 two (more or less) rollers e^3 are mounted and adapted to roll on metallic strips e^4 , secured to the bars or standards e , and serve to assist in reducing friction when the sides C C are raised or lowered.

The car-bottom A is provided with sockets f for the reception of pins f' , projecting from the lower edges of a series of (three, more or less) brackets g , each bracket being made with two beveled edges $g' g'$, inclining toward the sides C C of the car. On the brackets g a sectional false bottom E is located. The false bottom E comprises two parts $h h$, and to each part h a narrow section h' is connected, preferably by means of strap-hinges h^2 .

The car-bottom A is provided with a series of notches i , preferably lined with metal i' . Feet j are pivotally connected between ears j' , secured to the under faces of the sections h of the false bottom, each foot being made with a shoulder or beveled upper end j^2 (shown in dotted lines, Fig. 4) to limit its pivotal movement and to cause said feet, when the portions h of the false bottom are raised to a horizontal position, to enter the notches or recesses i . When the false bottom is in its normal or horizontal position, as shown in Fig. 4, ready to receive and support the gravel or other material to be loaded into the car, the portions h will be disposed in a horizontal position and supported by the feet j and by the sides of the car-body, the feet resting at an angle, so that when the side of the car-body is raised the weight on the false bottom causes the section thereof thus released to fall or slide outwardly under the side which has been elevated until it comes to a rest on the inclined surfaces g' of the parts g . The narrow hinged strips h' , (which are beveled on their free edges,) when the parts are in their normal position, meet in the center, each holding the other in position and forming a sort of V-shaped projection in the center of the car—viz., centrally between the sides thereof. Each section h of the false bottom is provided at its outer edge with rollers k , adapted to roll on metallic strips k' , secured to the sides C of the car, whereby to assist in reducing friction when the sides are raised or lowered and to prevent the engagement of the false bottom with the sides of the car, which engagement, were it permitted, might mar the said sides C C.

When the false bottom E is first placed in the car the portions $h h$ thereof will lie on the inclined faces or edges of the brackets g and will afterward be raised to a horizontal position, as above explained, by means of suitable hooks, which latter are made to engage metallic eyes k^2 , secured to said sections h of the false bottom E.

Before explaining the action of the false bottom to discharge the load when the sides are raised I will describe the means employed for raising and lowering said sides.

At the respective ends of each side C of the

car two arms l are secured and project therefrom, said arms being made at their free ends with bosses l' , having screw-threaded perforations l^2 for the accommodation of a vertical screw F. Each screw F has secured to its lower end a round bearing-block F', which has its seat in a socket m , made in the platform of the car. In each socket m a metallic plate m' is placed, and between each metallic plate m' and the bearing-blocks on the screws F antifriction balls or rollers m^2 are located, whereby to reduce friction when said screws are turned. Between the ends of each screw F teeth are made to produce a ratchet-wheel G. The arms $n n$ of a lever H are loosely connected with each screw F above and below the ratchet-wheel G, and between said arms $n n$ a double dog o is pivotally connected, said dog having an arm n' by which to turn it to cause one or the other edge thereof to engage the ratchet-wheel, according to the direction in which the sides of the car are to be moved, up or down. Each dog will be retained in proper mesh with its respective ratchet-wheel by means of a spring n^2 . Each lever H is made in its end with a socket for the reception of an arm H' to be grasped by the operator. The false bottom having been placed in the car, as above described, and the car having been loaded with gravel or other loose material, and it being desired to discharge the contents of the car, the levers or jacks at both ends of one side of the car will be operated to cause that side of the car to be raised. This operation will be continued until the side of the car shall have been raised just above the edge of one of the sections h of the false bottom. This leaves one section of the bottom and the load thereon supported solely on the inwardly-inclined feet, and as the preponderance of weight is then on the unsupported side of the section of the bottom the latter slides outwardly and comes to a rest in an inclined position with its outer side edge adjacent to or in contact with the standards b , thus permitting a part of the contents of the car to flow out between the lower edge of the side of the car and the bottom thereof. The remainder of the contents will then be discharged at the other side of the car by raising the other side C in the same manner as above explained.

Each side C of the car is provided with two (more or less) perforations p at points below the normal position of the false bottom, said perforations being preferably faced with metallic plates p' bolted to the outer face of the sides of the car and preferably extending to the top edges thereof.

When it is desired to discharge the entire contents of the car at one side thereof, pins q (shown in dotted lines, Fig. 4) are passed through the perforations p in the side C at the opposite side of the car from which the gravel or other material is to be discharged. The side C of the car having the pins therein will now be raised by means of the jacks

hereinbefore described and the pins *q* will engage one section *h* of the false bottom. This operation will be continued until the said section *h* of the false bottom shall have been elevated to the desired extent. The other side of the car will now be raised by means of the jacks at that side until the other section *h* of the false bottom drops, as has been previously explained. The hinged sections *h'*, as previously explained, form when in their normal positions a central inverted-V-shaped ridge, each section supporting the other in its inclined position. Hence it follows that when one section *h*, with its hinged section *h'*, falls outwardly the hinged portion *h'* of the other section falls in the same direction, thus destroying the central ridge and forming a practically straight bottom, inclined from one side of the car to the other.

It may be desired to support the narrow sections *h'* of the false bottom while the car is being loaded, and for this purpose pins *r* may be inserted through perforations in the ends of the car, the free ends of said pins being disposed under said narrow sections *h'*. When the car shall have been loaded, these pins may be removed, the load or weight on the sections *h'* being sufficient to hold them in their inclined positions.

Should it be desired to employ the car for conveying large articles or other heavy freight which could not be discharged in the manner above explained and with which the false bottom would be useless, the latter can be removed and placed parallel with the inner faces of the sides *C*, where they will be held by means of clamps *s*, said clamps comprising two hooks, one to receive the sides *C* and the other to receive the false bottom. The feet on the false bottom and the ears or brackets which support them will be removed and placed in the boot *A'*, as will also the plates or brackets *g*. The car will then be in condition to receive any large freight which it may be desired to place therein.

My improvements are very simple in construction, comparatively cheap to manufacture, simple and easy of application, and effectual in all respects in the performance of their functions.

It is evident that my improvements are equally well adapted to large cars, push-cars, wagons, carts, and even to grain-elevators or any apparatus in which dumping or discharging devices are employed.

Numerous slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope, and hence I do not wish to limit myself to the precise details of construction herein set forth; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a car or other vehicle having a movable side continuous from

end to end, of jacks located at the ends of the side for moving said side, substantially as set forth.

2. The combination with a car or other vehicle having a vertically movable side continuous from end to end of the car, of jacks located at the ends of the side and constructed and adapted to be operated for raising and lowering said side, substantially as set forth.

3. The combination with a car or other vehicle having a vertically movable side, of a movable false bottom constructed and adapted to operate automatically to discharge the contents of the car when the side is raised, substantially as set forth.

4. The combination with a car or other vehicle having its sides movable vertically, of a false bottom constructed and adapted to discharge the contents of the car when one side thereof is raised, and means for elevating a portion of said false bottom when the other side of the car is raised, whereby to cause the entire contents of the car to be discharged at one side of the car, substantially as set forth.

5. The combination with a car or other vehicle having vertically movable sides, of a sectional false bottom constructed and adapted to discharge the contents of the car when one side of the car is raised, and pins projecting through the opposite side of the car and under a section of the false bottom, whereby when the latter side is raised a portion of the false bottom will be raised by the engagement of said pins therewith and cause the entire contents of the car to be discharged at one side of the car, substantially as set forth.

6. The combination with a dumping car, of brackets located on the upper face of the bottom thereof, a false bottom on said brackets, said false bottom comprising two parts, each part being made in sections hinged together, and pivoted feet on said false bottom having a bearing on the car bottom, substantially as set forth.

7. The combination with a dumping car, of brackets located on the car bottom, a false bottom located over said brackets, said false bottom comprising two wide sections and a narrow section hinged to each wide section, said narrow sections being adapted to bear against each other and form a projecting ridge from one end of the car to the other centrally between the sides thereof, and feet on said wide sections having their bearings in sockets in the car bottom, substantially as set forth.

8. The combination with a dumping car, of a series of brackets located therein, each bracket having two beveled edges inclining toward the sides of the car, a sectional false bottom over said brackets, feet for normally supporting portions of said false bottom in horizontal position, and means for raising the side of the car, substantially as set forth.

9. The combination with a car or other vehicle having vertically movable sides, of a false bottom in said car, and rollers mounted

in the outer edges of said false bottom and adapted to roll on the sides of the car when the latter are raised, substantially as set forth.

10. The combination with a car or other vehicle having vertically movable sides, of plates secured to the inner faces of said sides, a false bottom in said car or vehicle, and rollers mounted in the outer edges of said false bottom and adapted to roll on said plates, substantially as set forth.

11. The combination with a car or other vehicle having vertically movable sides and jacks connected therewith for moving them, of removable brackets in said car or vehicle and a removable false bottom over said brackets, substantially as set forth.

12. The combination with a car or other vehicle, of a removable false bottom composed of two sections, and each section composed of two hinged sections, of brackets or hooks for supporting the sections of said false bottom parallel with the sides of the car when not in use, substantially as set forth.

13. In a car, the combination with the bottom thereof, of movable sides, each side being continuous from end to end of the car, jacks for elevating said sides, standards secured to said bottom and projecting upwardly parallel with said sides, and rollers mounted in said standards and adapted to roll on the sides, substantially as set forth.

14. The combination with a car having movable sides, each side being continuous from end to end of the car, and jacks for moving said sides vertically, of standards secured to the car bottom and projecting upwardly parallel with said sides, plates secured to the outer face of said sides and rollers mounted in said standards and adapted to roll on said plates, substantially as set forth.

15. The combination with a car bottom and movable sides, of brackets secured to said bottom, bars or standards secured to the sides and adapted to project through said brackets, and rollers mounted in said brackets and adapted to roll on said bars or standards, substantially as set forth.

16. The combination with a car bottom and movable sides, of brackets secured to said bottom, bars or standards secured to said sides and projecting through said standards, plates secured to said bars or standards and rollers mounted in said brackets and adapted to roll on said plates, substantially as set forth.

17. The combination with a car bottom and its ends, of movable sides, rods or bolts connected with said ends, and swinging latches

connected to said sides and adapted at their free ends to receive said rods, substantially as set forth.

18. The combination with a car bottom and ends, of movable sides, rods connected with said ends, swinging latches connected with said sides and having slots at their free ends for the reception of said rods, and rollers mounted in said slots adapted to roll on said rods, substantially as set forth.

19. The combination with a car or other vehicle having vertically movable sides, of screws located at the respective ends of said sides and connected therewith, ratchet wheels on said screws, a lever connected with each screw and a dog carried by each lever and adapted to engage the ratchet wheel on the latter, substantially as set forth.

20. The combination with a car or other vehicle having movable sides, of screws located at the respective ends of said sides, arms having screwthreaded perforations for the passage of said screws, secured to the ends of said sides, a ratchet wheel on each screw, a lever connected with each screw and reversible spring-actuated dogs carried by said levers and adapted to engage said ratchet wheels, substantially as set forth.

21. The combination with a car having vertically movable sides, of screws connected with the respective ends of each side, a bearing block at the lower end of each screw revolvably mounted in the car bottom, a ratchet wheel on each screw, a lever connected with each screw and a dog carried by each lever and adapted to engage said ratchet wheel, substantially as set forth.

22. The combination with a car having vertically movable sides, of arms projecting from the ends of said sides and having screwthreaded perforations, screws passing through said perforated arms, a revoluble block secured to the lower end of each screw adapted to enter a socket in the car bottom, antifriction balls under said blocks, a ratchet wheel on each screw, a lever connected with each screw and a dog in each lever adapted to engage said ratchet wheel, substantially as set forth.

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

W. M. DUNMAN.

Witnesses:

H. C. LAWRENCE,
F. KAVANAUGH.