(No Model.) 3 Sheets—Sheet 1.

J. G. HOLCOMBE.

DUMPING CAR OR WAGON.

No. 566,175. Patented Aug. 18, 1896.

FIG. 1.

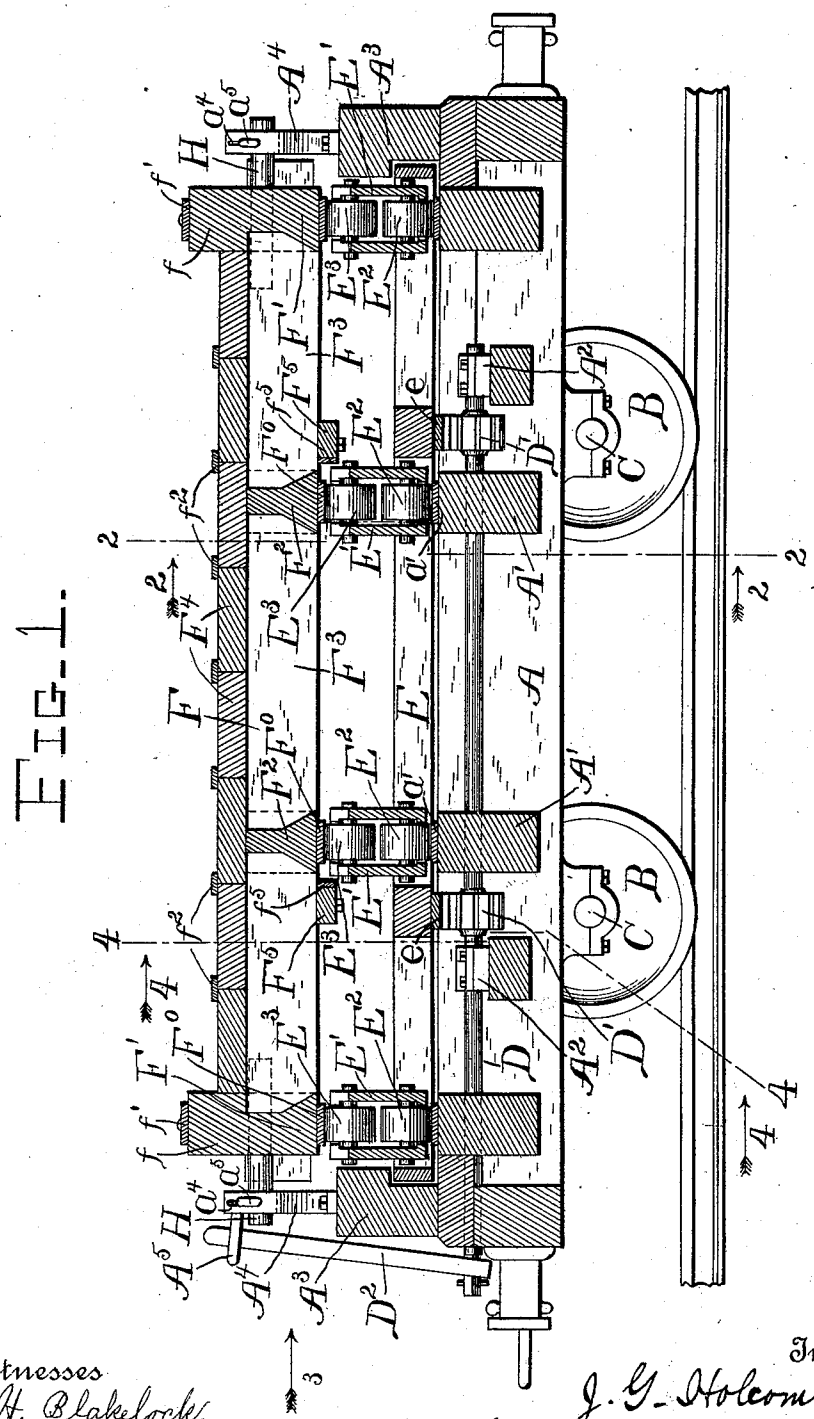

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FIG. 2.

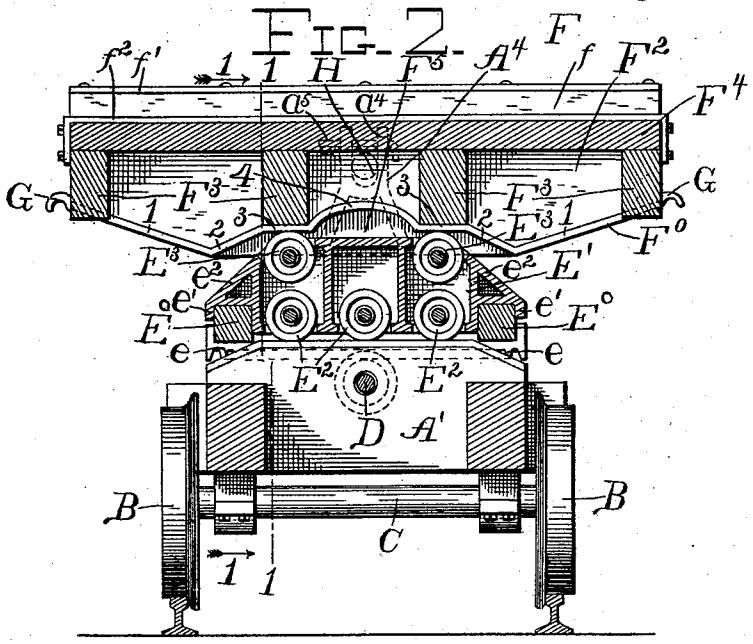

FIG. 3.

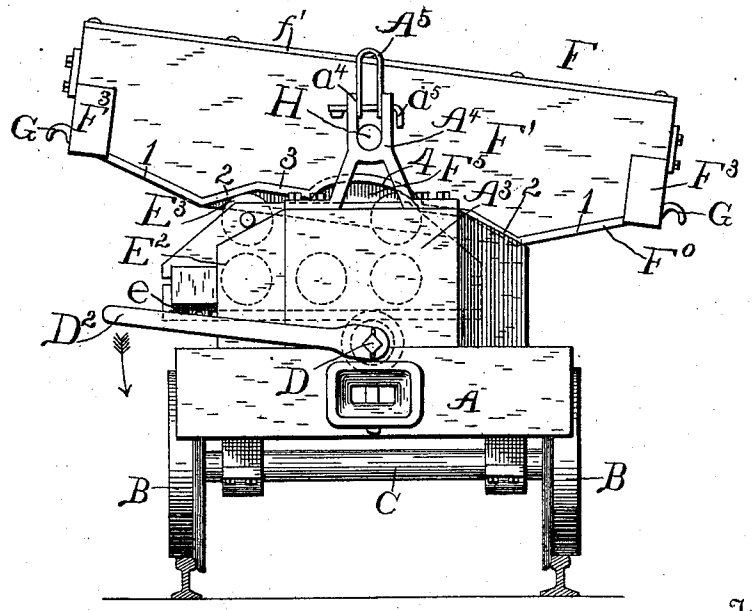

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FIG. 4.

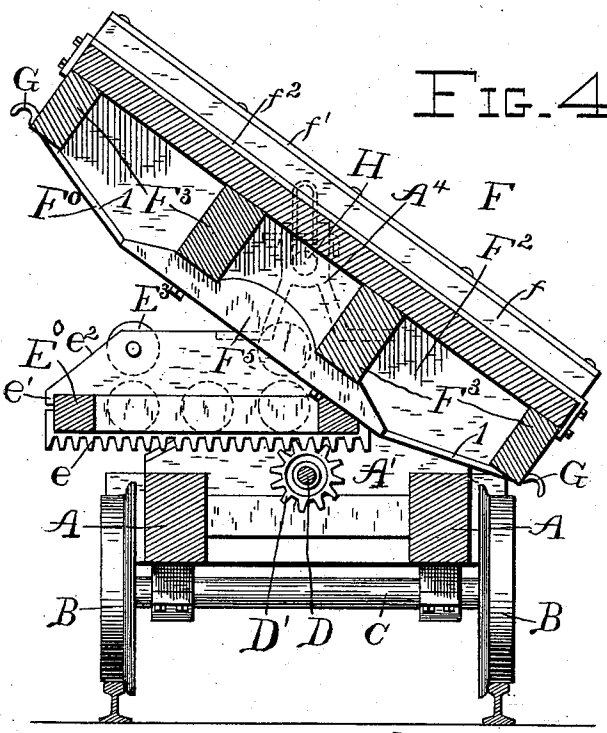
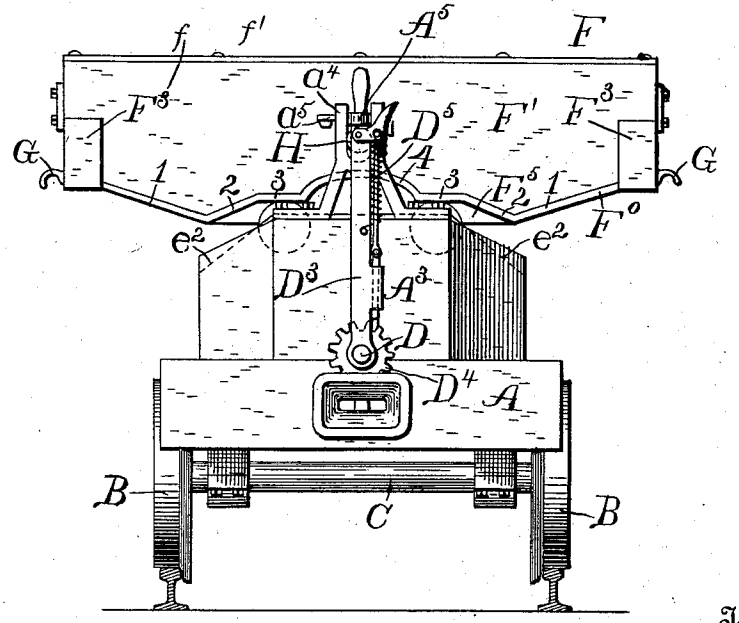


FIG. 5.



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UNITED STATES PATENT OFFICE.

JOSEPH GALES HOLCOMBE, OF NEWPORT, OREGON, ASSIGNOR TO MARY E. HOLCOMBE AND R. A. BENSELL, OF SAME PLACE.

DUMPING CAR OR WAGON.

SPECIFICATION forming part of Letters Patent No. 566,175, dated August 18, 1896.

Application filed May 26, 1896. Serial No. 593,143. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH GALES HOLCOMBE, a citizen of the United States, residing at Newport, in the county of Lincoln and State of Oregon, have invented certain new and useful Improvements in Dumping Cars or Wagons; 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 improvements in dumping cars or wagons intended for use in railroad construction, or for filling in hollows, or for dumping excavated material, or for like purposes.

The said invention will be understood by reference to the accompanying drawings, in which the same parts are indicated by the same letters and numerals throughout the several views.

Figure 1 represents a longitudinal section through the car along the line 1 1 of Fig. 2 and looking in the direction of the arrows 1. Fig. 2 represents a section along the line 2 2 of Fig. 1 and looking in the direction of the arrows 2. Fig. 3 represents an end view as seen from the left of Fig. 1 and looking in the direction of the arrow 3. Fig. 4 represents a section along the line 4 4 of Fig. 1 and looking in the direction of the arrows 4, except that the upper frame or platform of the car is tilted, as in dumping; and Fig. 5 represents an end view of the car, showing a modified form of hand-lever for dumping the car.

A represents the frame of the car-truck, which is provided with cross-timbers A′ and A^2 and the end timbers A^3, above which are mounted yokes A^4 for the pivot-pins of the upper frame or car-platform. This truck is mounted on the wheels B and axles C in the usual way.

D represents a longitudinal shaft carrying one or more pinions D′, meshing in the racks *e* at the base of the intermediate frame E, which frame is provided with a plurality of brackets E′, between which are journaled the antifriction-rollers E^2 and E^3. These rollers E^2 travel on the tracks *a*′ over the cross-pieces A′, while the upper rollers E^3 support the curved tracks F^0, which support the upper frame or platform of the car F. This intermediate frame is provided with overhanging lips *e*′ to engage the side timbers E^0 and with inclined faces e^2 to clear the bottom of the upper frame or platform when the said platform is in the tilted or dumping position.

The upper frame F is provided with cross-timbers F′ and F^2, the latter terminating in ribs *f*, projecting above the main body of the platform and forming ends thereof, as also adding additional strength to the structure. These various cross-pieces are faced on the lower side with metal tracks F^0, which bear on the rollers E^3, as already described.

The platform proper is composed of a plurality of cross timbers or boards F^4, which are preferably strengthened by means of metal bars or ribs f^2, while small bars or ribs *f*′ are placed over the end pieces *f*, but these metallic strips or bars may be omitted or replaced by wooden strips, if desired.

In order to prevent the upper frame F from being moved too far longitudinally in dumping, the cross-pieces F^5 are provided, which pieces are faced with metal plates f^5, adapted to engage on suitable projections on the intermediate frame, such as the boxes or brackets E′. The upper frame F is provided with end pins H, which, when the car is in the normal horizontal position, project between the guide-bars a^4 of the yoke A^4, but do not rest in the Y thereof, thus normally serving merely as lateral guides, as indicated in Figs. 2 and 5.

The bottom of the upper frame F is provided with a plurality of bent ribs F^0, which are inclined downward, as at 1, then upward, as at 2, then horizontally, as at 3, and then finally curved in the center, as at 4. (See Figs. 2 and 3.) These ribs are secured to the cross-timbers F^2 and the longitudinal timbers F^3, as shown in Fig. 2.

In order to turn the shaft D, a hand-lever, such as D^2 (shown in Figs. 1 and 3) or D^3, (shown in Fig. 5,) is provided. The upper end of this lever may be normally held in the link A^5, which is adapted to be raised and dropped over the lever when the latter is in the central or vertical position. This link A^5 is preferably held in place by the movable pin a^5, which pin also serves to hold the ends

of the pins H down in the operation of dumping. If for any cause it should be desired to remove the car-platform or the upper frame, this pin a^5 is removed and the upper frame F removed and suspended by slings engaging the hooks G, which are provided for this purpose.

The car is loaded in the ordinary manner, the parts being in the position shown in Figs. 1, 2, and 5.

In Fig. 5 a modified form of hand-lever is shown, in which the lever D^3 is supplied with a ratchet-and-pawl arrangement, such as D^5, which, being the well-known form of ratchet-and-pawl arrangement, will not be further described. By means of this arrangement the hand-lever D^3 can turn the pinion D^4 and the shaft D through any desired angle, whereas with the lever such as D^2 it becomes necessary to remove the lever after the same has been turned through an angle of somewhat more than ninety degrees. Now if it be desired to tilt the car the lever D^2 or D^3, as the case may be, is turned to the right or left, according to which way it is desired to dump the car. The revolution of the shaft D and pinions D' will move the racks *e* outward, causing the rollers E^3 to pass beneath the tracks F^0. The first motion of these rollers E^3 will be to ride up on the inclines 2, while the opposite rollers will enter into the curved portions 4 of the tracks F^0. This will ease the upper frame down until the pins H rest on the yokes A^4. Then these pins will serve as pivots for the upper frame F. Further motion of the intermediate frame will cause the rollers E^3 to ride still farther up on the inclines 2 until the center of gravity of the frame F is so far disturbed as to tend to rotate freely toward the side that is inclined downward. At this time this tendency of the platform to rotate will assist that of the hand-lever to move the intermediate frame from beneath the upper frame, and as soon as the rollers E^3 pass clear of the tracks F^0 the whole of the upper frame will swing about the pivot-pins H until the inclined faces of the tracks F^0 strike the upper edge of the frame A in the position shown in Fig. 4. After the car is dumped, to restore the parts to the initial position it will be simply necessary to run the intermediate frame back beneath the upper frame, first swinging the platform to the approximately horizontal position, and then lifting the same, as will be readily understood.

It will be seen that in the process of loading and transporting the loaded cars the platform is supported on the rollers E^2 and E^3 and is steadied in place by the pins H against lateral motion on the said rollers, while in the process of dumping the platform and connected parts are lowered to rest on the pivot-pins H, and are then swung about these pivot-pins into the dumping position. In this way, although it is necessary to lift the unloaded platform a short distance in restoring the parts to their initial position, this disadvantage is more than overcome by the weight of the platform and also of the load thereon cooperating in the process of dumping the car.

It will be obvious that various modifications of the herein-described apparatus might be made by any practical mechanic which could be used without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a dumping car or wagon, the combination with a lower frame or truck, an intermediate laterally-movable frame, and an upper frame, pivots and pivot-bearings connecting the said upper and the said lower frames, and means for moving said intermediate frame laterally and thereby tilting said upper frame, substantially as described.

2. In a dumping car or wagon, the combination with a lower frame or car-truck and bearings projecting upward therefrom, an upper frame provided with pivot-pins projecting in the said bearings, and an intermediate frame normally supporting said upper frame, with means for moving said intermediate frame laterally and allowing said upper frame to rest on its pivot-bearings, substantially as described.

3. In a dumping car or wagon, the combination with a lower frame or car-truck, an upper frame provided with pivot-pins projecting into bearings connected to the lower frame, an intermediate frame situated between the two said frames, and normally adapted to take the weight of the upper frame from its pivot-pin, a rack on said intermediate frame, a pinion journaled in the lower frame engaging said rack, and means for rotating said pinion, substantially as described.

4. In a dumping car or wagon, the combination with a lower frame or truck, an intermediate laterally-movable frame, and an upper frame, pivots and pivot-bearings connecting the said upper and the said lower frames, and a rack and pinion for moving said intermediate frame laterally and thereby tilting said upper frame, substantially as described.

5. In a dumping car or wagon, the combination with a lower frame or car-truck and bearings projecting upward therefrom, an upper frame provided with pivot-pins projecting in the said bearings, and an intermediate frame with antifriction-rollers journaled therein normally supporting said upper frame and with similar rollers running on tracks on said lower frame, with means for moving said intermediate frame laterally and allowing said upper frame to rest on its pivot-bearings, substantially as described.

6. In a dumping car or wagon, the combination with a lower frame or car-truck, an upper frame provided with pivot-pins projecting into bearings connected to the lower frame, an intermediate frame situated between the two said frames, with rollers journaled in said intermediate frame bearing on tracks on said upper and lower frames, and

normally adapted to take the weight of the upper frame from its pivot-pins, a rack on said intermediate frame, a pinion journaled in the lower frame engaging said rack, and means for rotating said pinion, substantially as described.

7. In a dumping car or wagon, the combination with a lower frame or truck, an intermediate laterally-movable frame, and an upper frame supporting the platform, pivots and pivot-bearings connecting the said upper and the said lower frames, racks transversely mounted on said intermediate frame, pinions journaled in said lower frame and meshing with said racks, and means for turning said pinions, thereby moving said intermediate frame laterally and tilting said upper frame, substantially as described.

8. In a dumping car or wagon, the combination with a lower frame or car-truck and bearings projecting upward therefrom, an upper frame provided with pivot-pins projecting in the said bearings, and an intermediate frame normally supporting said upper frame, with means for moving said intermediate frame laterally and allowing said upper frame to descend and rest on its pivot-bearings, and means for turning said upper frame about said pivot-pins, substantially as described.

9. In a dumping car or wagon, the combination with a lower frame or car-truck, an upper frame provided with pivot-pins projecting into bearings connected to the lower frame, an intermediate frame situated between two said frames, with rollers journaled in said intermediate frame bearing on tracks on said upper and lower frames, and normally adapted to take the weight of the upper frame from its pivot-pins, racks transversely mounted on said intermediate frame, a shaft journaled in the lower frame engaging said rack, pinions fast on said shaft and meshing in said racks, and means for rotating said shaft, substantially as described.

10. In a dumping car or wagon, the combination with a lower frame or car-truck, an upper frame provided with pivot-pins projecting into bearings connected to the lower frame, an intermediate frame situated between the two said frames, with rollers journaled in said intermediate frame bearing on bent inclined tracks on said upper frame, and straight tracks on said lower frame, and normally adapted to take the weight of the upper frame from its pivot-pin, a rack on said intermediate frame, a pinion journaled in the lower frame engaging said rack, and means for rotating said pinion, substantially as described.

11. In a dumping car or wagon, the combination with a lower frame or car-truck, an upper frame provided with pivot-pins projecting into bearings connected to the lower frame, an intermediate frame situated between the two said frames, with two tiers of rollers journaled in said intermediate frame and bearing respectively on bent inclined tracks on said upper frame and straight tracks on said lower frame, and normally adapted to take the weight of the upper frame from its pivot-pins, but to ease said upper frame down to rest on its pivot-pins when said intermediate frame is moved laterally, racks on said intermediate frame, pinions journaled in the lower frame engaging said rack, and means for rotating said pinions, substantially as described.

12. In a dumping car or wagon, the combination with a lower frame or car-truck, an upper frame provided with pivot-pins projecting into bearings connected to the lower frame, an intermediate frame situated between two said frames, with two tiers of rollers journaled in said intermediate frame bearing respectively on bent inclined tracks on said upper frame and straight tracks on said lower frame, and normally adapted to take the weight of the upper frame from its pivot-pins, but to ease said upper frame down to rest on its pivot-pins when said intermediate frame is moved laterally, racks transversely mounted on said intermediate frame, a shaft journaled in the lower frame engaging said rack, pinions fast on said shaft and meshing in said racks, and a hand-lever with ratchet-and-pawl attachment for rotating said shaft, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH GALES HOLCOMBE.

Witnesses:
P. D. HEALY,
JNO. BUCKLEY.