

(No Model.)

5 Sheets—Sheet 1.

G. E. BLAINE.

DUMPING CAR.

No. 366,917.

Patented July 19, 1887.

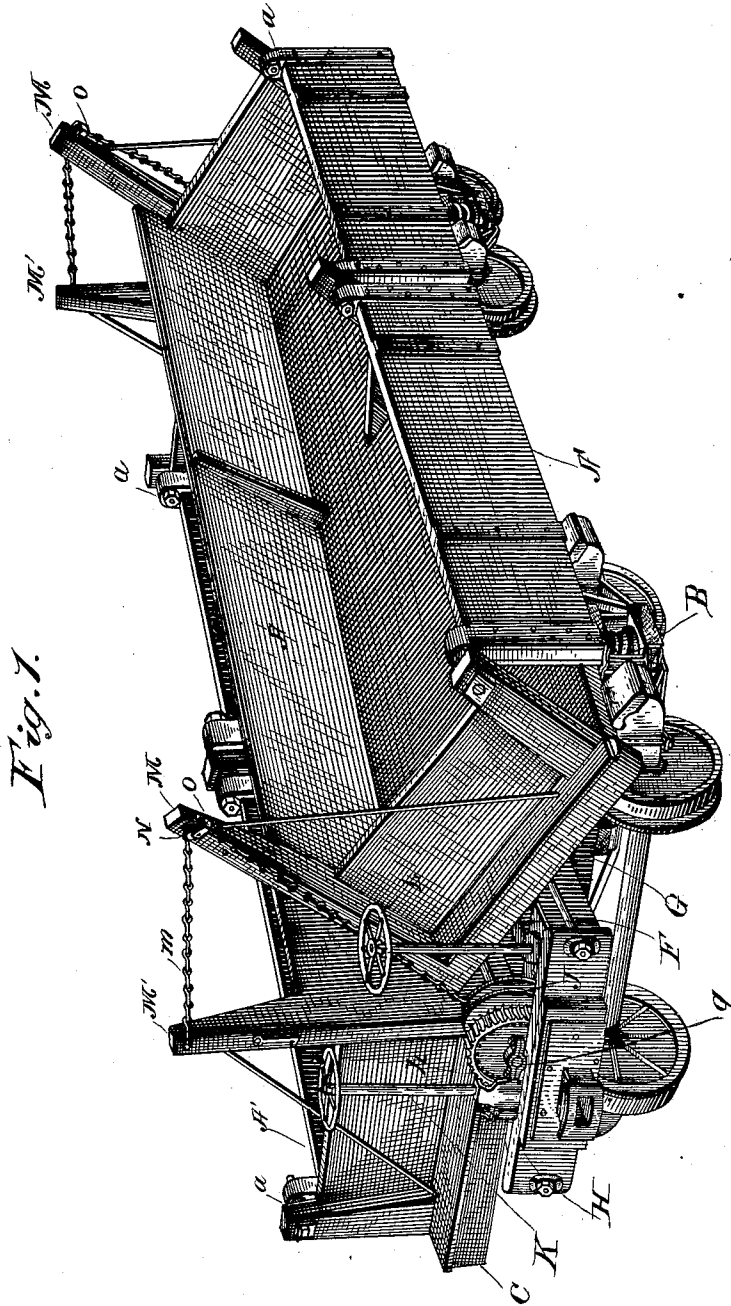


Fig. 1.

WITNESSES

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By Attorney

(No Model.)

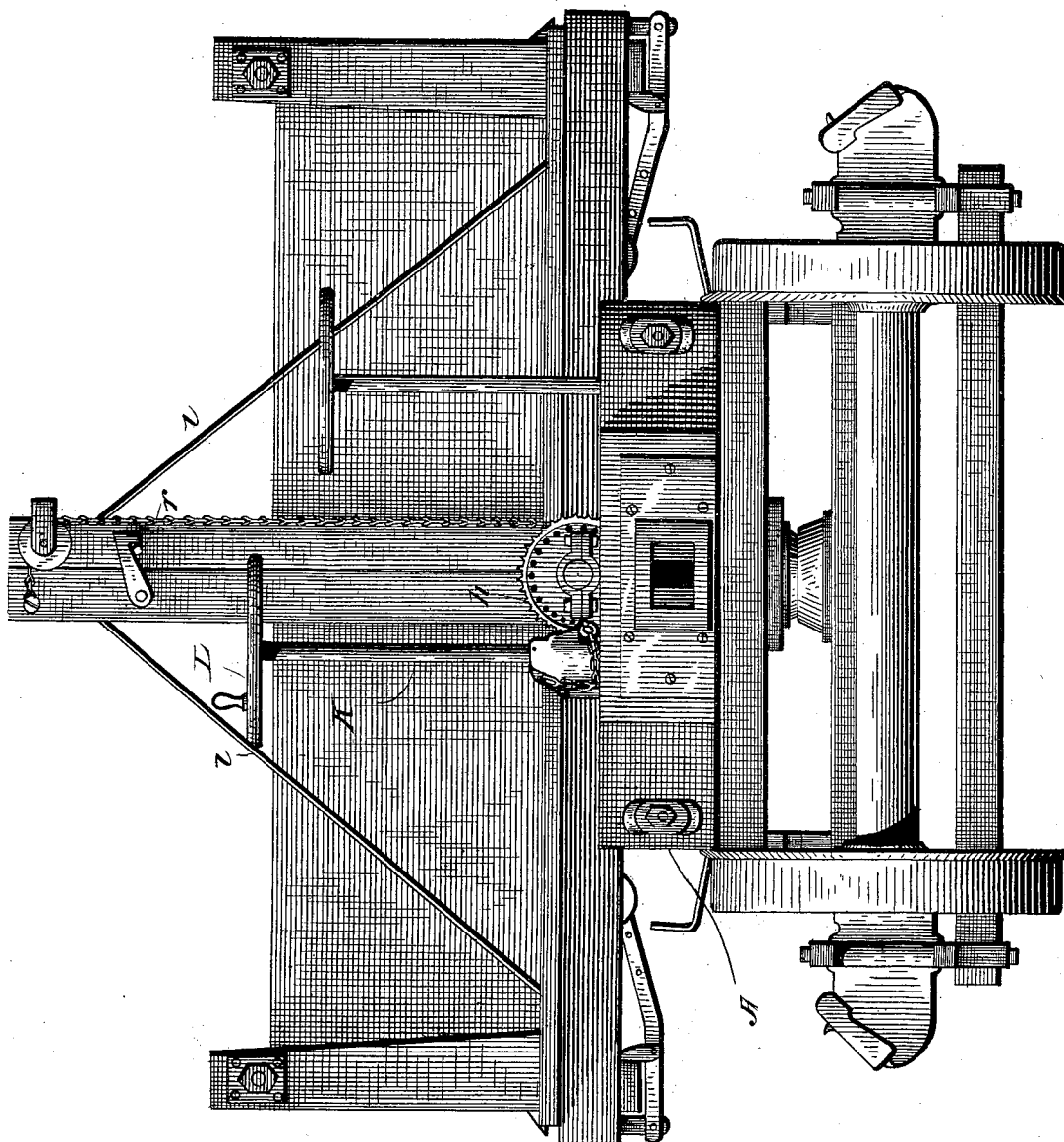
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G. E. BLAINE.

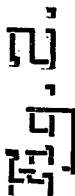
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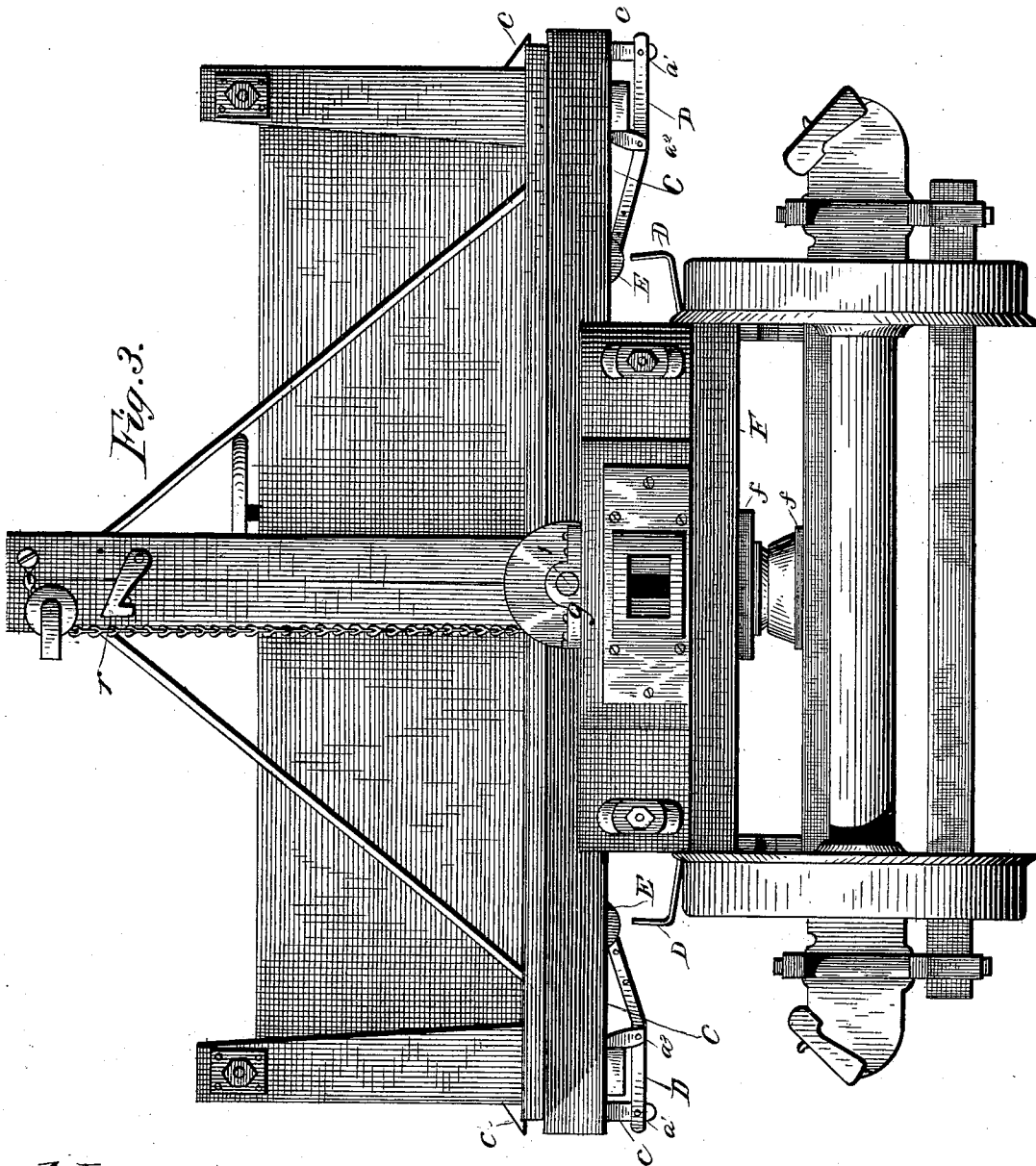
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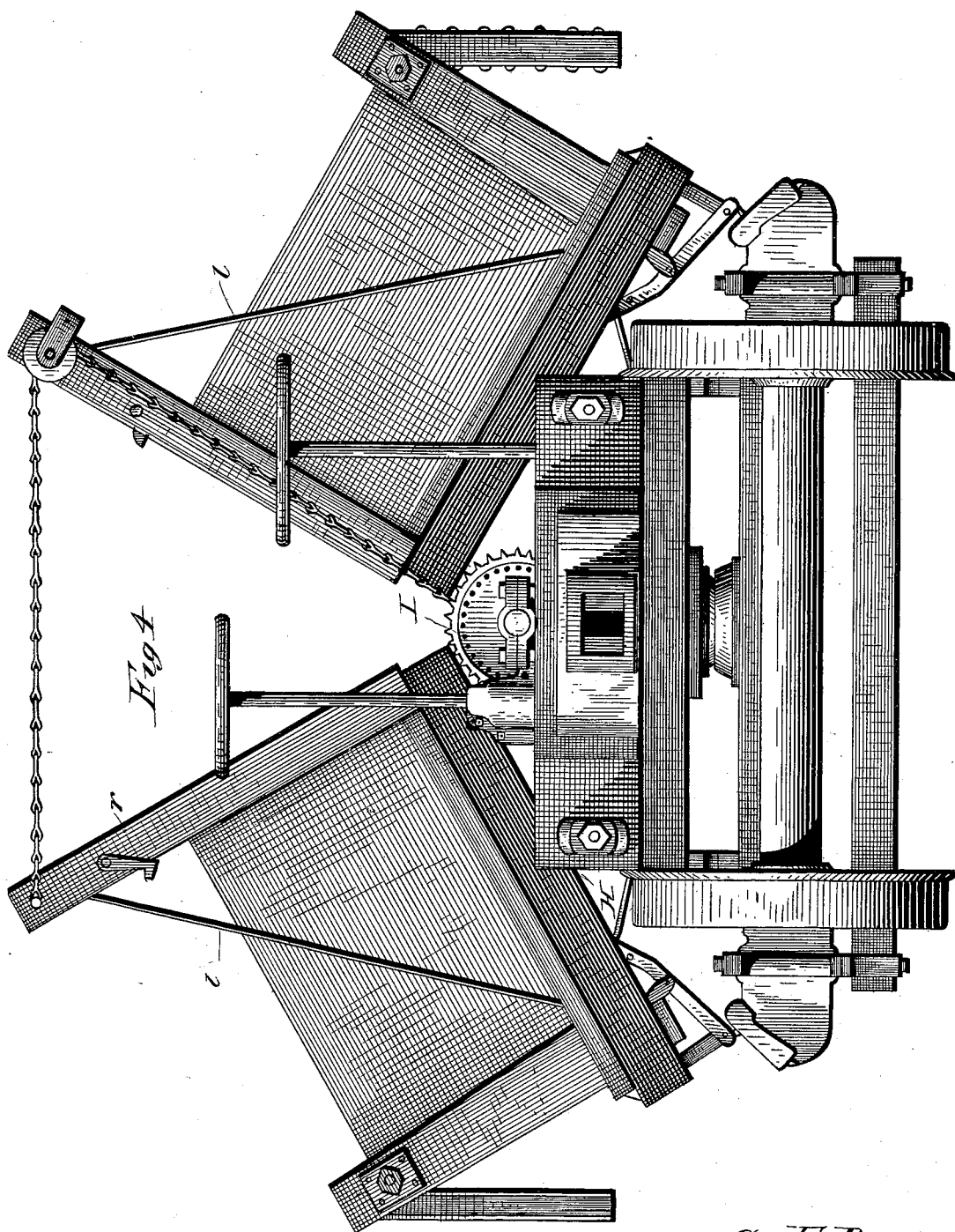
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WITNESSES

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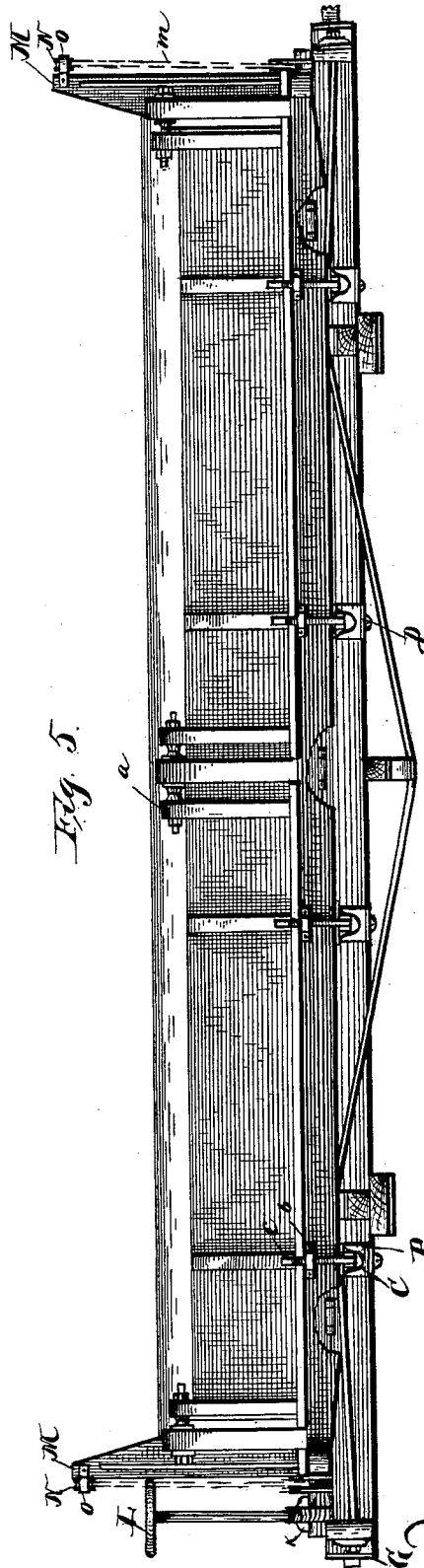
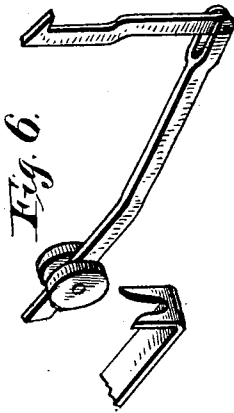
5 Sheets—Sheet 5.

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Patented July 19, 1887.



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UNITED STATES PATENT OFFICE.

GEORGE E. BLAINE, OF DAYTON, OHIO.

DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 366,917, dated July 19, 1887.

Application filed December 16, 1885. Renewed June 17, 1887. Serial No. 241,619. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. BLAINE, of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Dumping Cars; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to dumping-cars, and has for its object to provide an improved construction of the car, whereby it can be loaded with the same or different contents, which will be entirely separate from each other, and to also provide an improved mechanism for dumping the two contents on opposite sides of the track, which will be performed in a rapid and effectual manner, with a minimum expenditure of power, a saving in time, and a certainty of correct action, the parts being so arranged and combined as to be entirely under the control of the operator at any and all times, and can be corrected, reversed, or altered at any desired period.

To accomplish the above-mentioned objects I have constructed, arranged, and combined the parts and mechanism herein shown, and of which my invention consists, all of which will be fully and accurately described hereinafter, and specifically pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view of my improved dumping-car. Fig. 2 is an end elevation showing said car in an upright position when loaded and not tilted, and also illustrating the end having the operating or dumping mechanism. Fig. 3 is an end elevation of the other end of the car. Fig. 4 is an end view of the car when dumped. Fig. 5 is a side elevation of the car-body, showing the manner of hinging it to the draw-frame and the bifurcated arms P P. Fig. 6 is an enlarged detail view showing the latch.

Like letters of reference indicate corresponding parts in all the figures.

Referring to the drawings, A represents the body of the car having hinged sides A', mounted

at their tops on hinges *a*, of ordinary construction, which permit the doors to swing freely when not controlled by mechanism, to be hereinafter described.

B are the side beams or sills of the body, and C the end beams. The remaining portion of the body, except as hereinafter described, is of ordinary construction. On the side beams, B, are clips, (not shown,) which serve as guides for vertical latch-bars *c*, of which there are two for each hinged side or flap, and they serve to prevent said doors from tilting or swinging outward, except at the desired time. At their lower extremities these latch-bars are pivoted in the forked ends *a'* of the levers D, and said levers are pivoted on hangers *a*, depending from the sills B, and are provided with sliding weights E on their inner ends, which normally serve to hold the latch-bars in their highest position.

The lower or draw frame is composed of the longitudinal reach-bars F F and bolsters F' F', and to this frame are attached the bumpers *d*, and the ends of this frame extend sufficiently beyond the car-body to form a platform, upon which the operator stands.

Projecting through the bolsters is the king-bolt, (not shown,) by means of which the body is connected with the truck, twin pivot-plates or bearing-guides *f f'* being secured, respectively, to the bolster and the cross-beam G of the truck.

On the ends of the reach-bars F F are suitably bolted and secured the two cross-beams H, upon each of which are placed the journal-bearings for the main operating-shaft I, which extends from platform to platform. Upon each end of this shaft is mounted the gear or worm wheel *h*, which is held rigidly on shaft and securely in place by the bearings *g* and *i*, one of which is not shown. Immediately behind and adjacent to the bearings is arranged the double flange-wheels J, rigidly secured to said shaft at each end. The worm-wheel *h* on end of said shaft is engaged by worm-wheel *j*, (not shown,) mounted on the upright shaft K, which is journaled in a bearing, *k*, secured on the platform of the car, said bearing serving as a boxing for the small worm-wheel *j*. The upright shaft terminates in the hand-wheel L,

by which it is turned and the whole mechanism operated.

The body of car A. is divided longitudinally into two separate compartments, which are designed to carry the same or different contents, and can be operated independently of each other, as will be hereinafter described. The inner edges of the sills of each half-car are hinged to the draw-frame of the truck, and are provided with the upright standards M M' at each end, said standards being substantially braced by rods *e e*, secured to the sills and standards. These standards, taken in connection with the worm-wheel mechanism and shaft, serve to dump the car in the following manner:

When the hand-wheel L is turned, the worm-wheel *j* engages the gear-wheel *h*, which is rigidly secured to said shaft. This motion revolves the shaft I, and consequently the double flange-wheels J. Now, to the hub of this flange-wheel is secured the one end of the chains *m*, the other ends passing over the pulleys N, secured in studs *o* on the ends of the standards M, and are fastened in any suitable manner to standards M, as shown. Thus the operator having rotated the shaft I, it causes the chains to be unwound from around the double flange-wheels J—that is, if the car is to be dumped—and thus by weight of its load the car gradually is allowed to obey the force of gravity, as only one side is hinged to the draw-frame, because, as will be evident, as the wheel J allows the chain to be released, nothing prevents the car from obeying the law of gravity. When the body of the car A reaches a certain incline, it causes the latchet *c* to remove automatically out of the way of the hinged flaps A A' on the side of the car at the proper time to allow the load to slide off. When the car-body begins to tilt, the latchets are automatically removed by the weighted levers and the auxiliary devices hereinbefore described, but which I do not claim, as they form part of the subject-matter of a previous application; but instead of using the arc-shaped bolsters, as heretofore, to prevent the car from going over too far, I employ the bifurcated horizontally-extending bars P, upon which the levers rest when the car has reached its tilting limit. When the half-cars are in upright position, they can be secured together tightly by means of the stay hooks or fingers R R, pivoted on standards M', and the pins or catches *r* on standards *m*, as shown in Fig. 1. When the car has been unloaded, the operator can, by reversion of the hand-wheel, wind the chains *m* back around the flange-wheels, and thus return the car-body to its normal or upright position on its track and ready to be again loaded.

My improved dumping-car is particularly designed to be used in the construction of railroads, and the transportation and dumping of rock, dirt, and so forth, which are used for ballast and filling purposes for the sides of the roads.

There are many obvious advantages which accrue from the car being longitudinally divided into two half-cars and provided with the dumping mechanism, a few of which are hereinafter enumerated.

Heretofore when dumping-cars were used for the above-mentioned purposes the load dumped on the side of the track was so large, owing to the size of the car, that there was an additional expense incurred by the builders for shoveling and distributing the earth, rock, &c., proportionately along the track, as the load accumulated in one vast heap, and thus required to be distributed, whereas with my construction, which makes the load the same in bulk, it is so divided that it can be unloaded upon both sides of the track at the same time in proper quantity, which will obviate the necessity of any distribution whatever.

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

1. The combination of the half-sections having hinged flaps or sides with the chains *m*, the flange-wheels, the worm-wheels, and the shaft, as described.
2. The combination of the car-body divided longitudinally in two parts with hangings, standards, hinged flaps, the chains, flange-wheels, worm-wheels, and shafts, as set forth.
3. The combination of the car-body longitudinally divided into two sections or compartments, each section being hinged or pivoted centrally to the reach-bars of the draw-frame, and having hinged flaps or sides, with the automatically-operated latches, the bifurcated arms, and dumping mechanism, as described.
4. The car-body longitudinally divided in two compartments or half-cars, and having hinged flaps or sides, with the automatically-operated latches and the bifurcated arms P, as set forth.
5. The combination, in a longitudinally-divided dump-car adapted to dump each side of the track, of the dumping gear mechanism, the vertical central standards, chains *m*, and the locking-hook *r*, as described.

In testimony that I claim the foregoing as my own I hereto affix my signature in presence of two witnesses.

GEORGE E. BLAINE.

Witnesses:

O. E. DUFFY,
WAYNE KRATZER.