

No. 829,667.

PATENTED AUG. 28, 1906.

F. PETELER.
DUMPING CAR.

APPLICATION FILED OCT. 6, 1905.

3 SHEETS—SHEET 1.

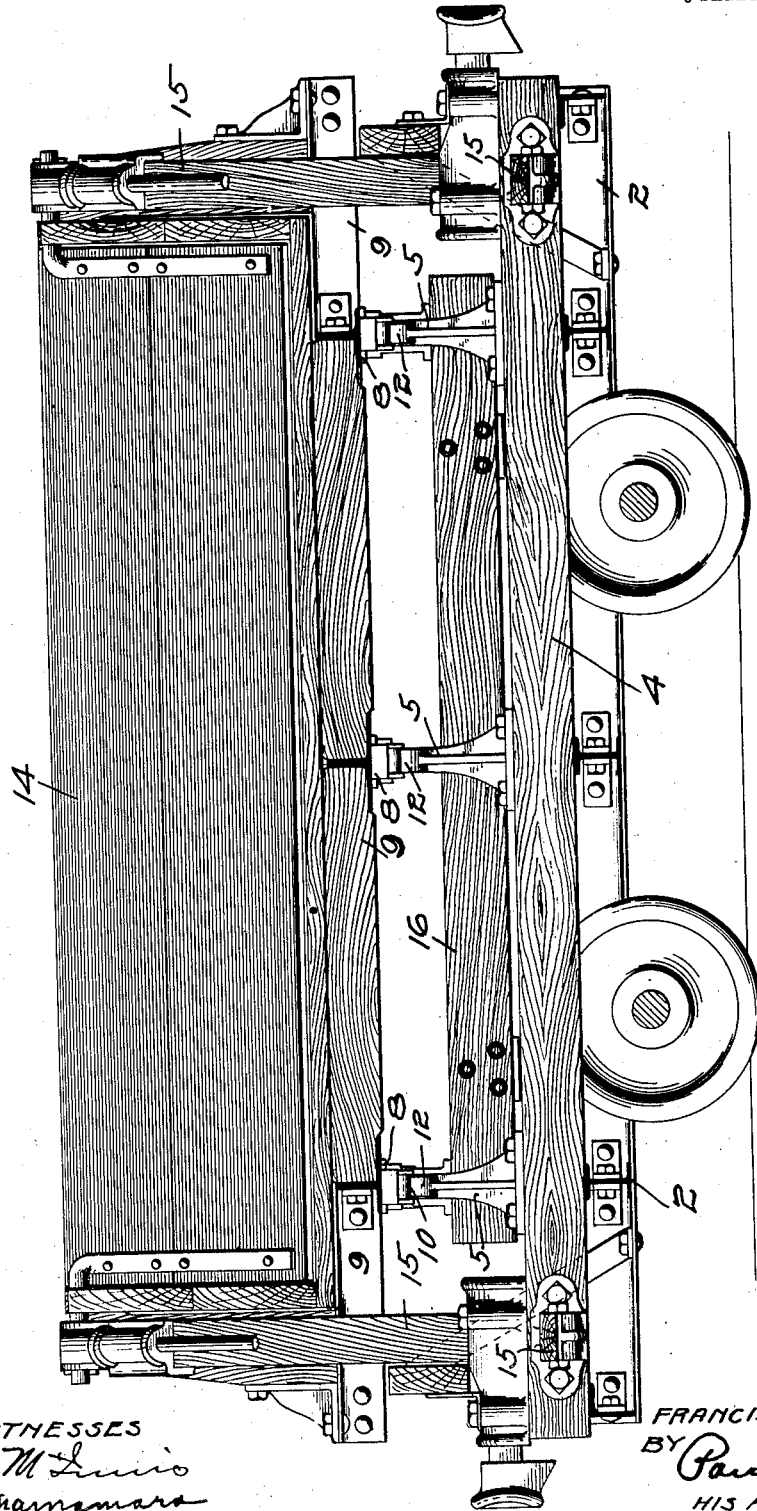


FIG. 1.

WITNESSES
M. M. Lewis
C. Mazzamara

INVENTOR
FRANCIS PETELER
BY *Paul & Paul*
HIS ATTORNEYS

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3 SHEETS—SHEET 2.

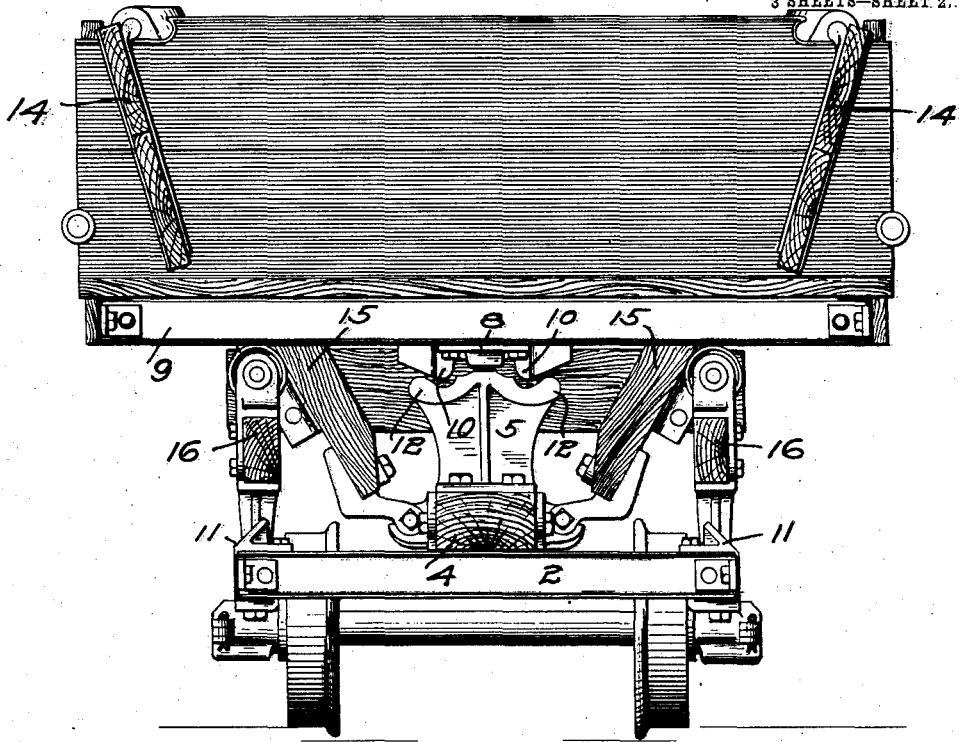


FIG. 2.

FIG. 4.

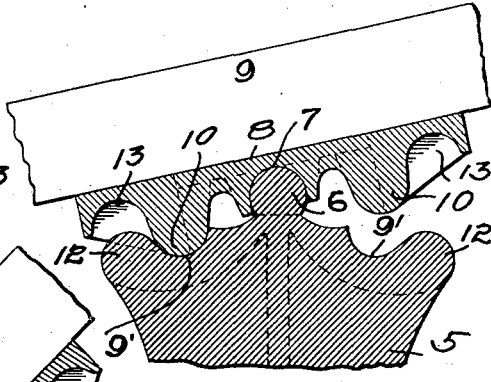
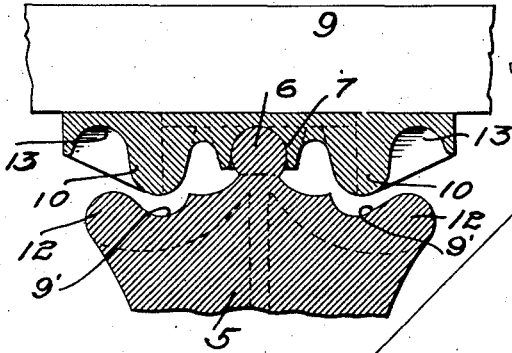
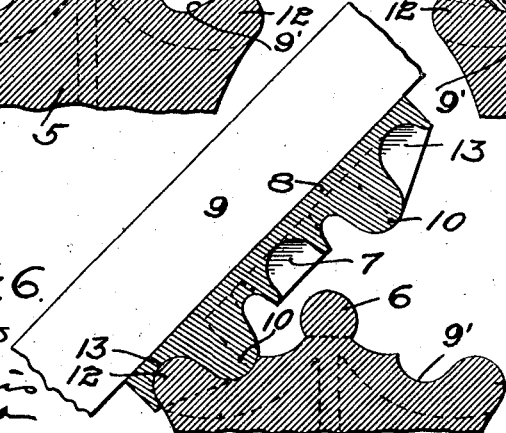


FIG. 5.

FIG. 6.



WITNESSES
M. M. ...
E. ...

INVENTOR
 FRANCIS PETELER
 BY
Paul ...
 HIS ATTORNEYS

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3 SHEETS—SHEET 3.

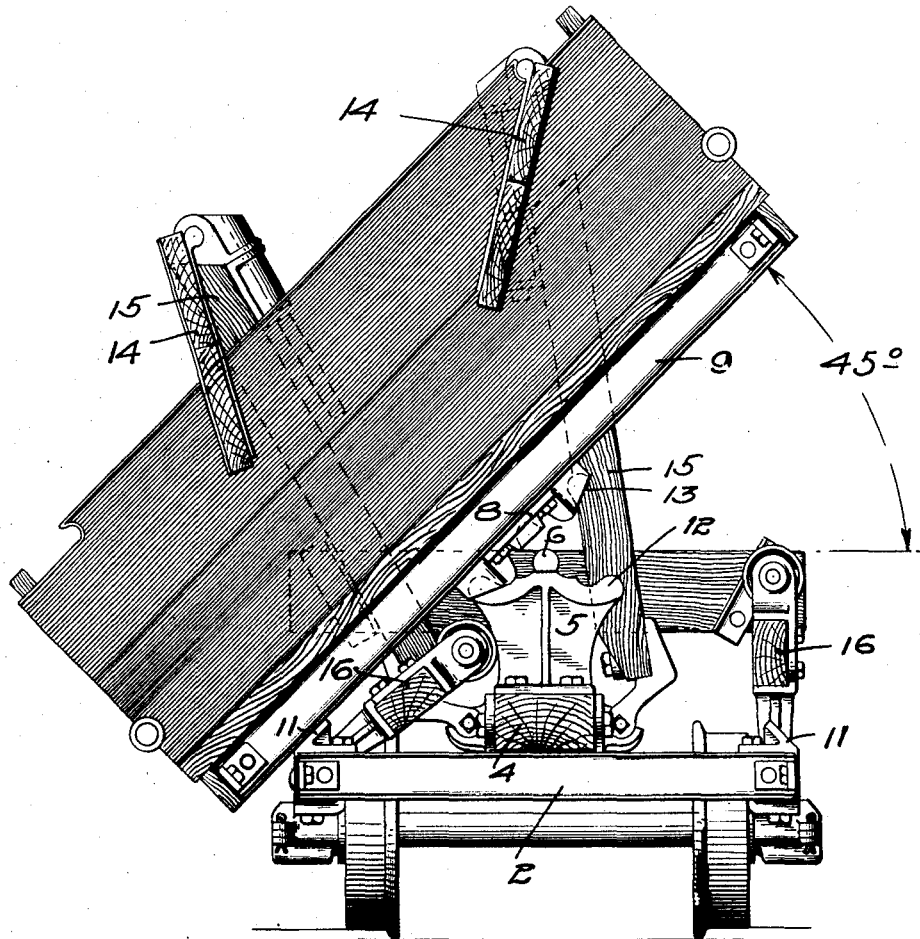


FIG. 3.

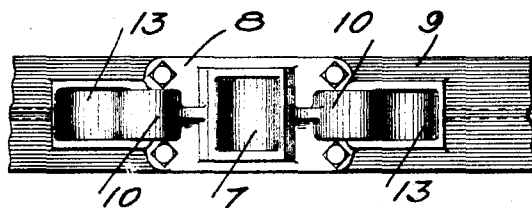


FIG. 7.

WITNESSES
M. M. Lewis
C. Mammara

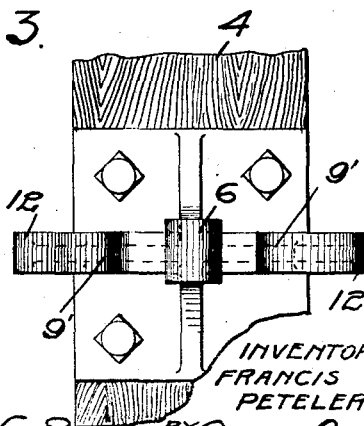


FIG. 8.

INVENTOR
FRANCIS
PETELER
BY *Paul Paul*
HIS ATTORNEYS

UNITED STATES PATENT OFFICE.

FRANCIS PETELER, OF MINNEAPOLIS, MINNESOTA.

DUMPING-CAR.

No. 829,667.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed October 6, 1905. Serial No. 281,566.

To all whom it may concern:

Be it known that I, FRANCIS PETELER, of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Dumping-Cars, of which the following is a specification.

My invention relates to portable dumping-cars, and is designed as an improvement over the car shown and described in Letters Patent of the United States issued to me May 19, 1874, No. 151,156.

The primary object of my invention is to provide a pivot-bearing for the car-body on the truck-frame which will permit easier dumping of the car and will allow it to automatically return to its normal horizontal position after dumping, thereby economizing in both time and labor.

A further object is to provide a bearing which will allow the car-body to be tilted to a greater angle in dumping than is ordinarily obtained in dumping-cars of this type, thus insuring the rapid and complete discharge of the load.

The invention consists generally in providing a bearing wherein the pivotal point on which the car swings in dumping is temporarily changed from the center of the car to a point at one side thereof or eccentric thereto during the latter part of the travel of the car-body to its tilted position, whereby the weight of the upper side of the car-body and the door in some sizes of cars can be utilized to return it to its normal horizontal position.

Further, the invention consists in raising the pivotal point of the bearing to a position nearer the level of the load, to the end that the initial tilting movement of the car-body will be made easier.

Further, the invention consists in providing a bearing which will allow the car-body to be tilted to an angle of forty-five degrees or more, thereby insuring the quick and complete discharge of its load.

Further, the invention consists in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a longitudinal vertical section of a portable dumping-car with my invention applied thereto. Fig. 2 is a transverse vertical sectional view of the same, showing the car-body in its normal horizontal position. Fig. 3 is a similar view showing the car-body in its tilted or

dumping position. Figs. 4, 5, and 6 are detail sectional views of the bearing or car-body on the truck-frame, illustrating the normal position and the partial and complete tilting positions assumed by the movable portion of the bearing during the act of dumping the car. Fig. 7 is a plan view of the plate or casting which is secured to the under side of the car-body, and Fig. 8 is a plan view of the casting forming the other portion of the bearing and mounted upon the truck-frame.

In the drawings, 2 represents a truck-frame of the construction usually employed by me provided with a timber 4 extending longitudinally along the middle line of the frame. Upon this timber the upright castings or standards 5 are mounted, there being one in the middle and one at each end of the car. In larger cars this number may be increased. These standards, as well as the other portion or section of the bearing carried by the car-body, are duplicates of one another, and consequently a description of one will suffice for all. The parts of the bearings are reversed in position from that shown in my 1874 patent, though a similar principle is employed.

Upon the upper end of the standard and centrally arranged with respect thereto is a pivot 6, adapted to enter a socket 7, provided in a plate 8, which is secured to the under side of the car-body 9 and extends transversely thereof, as shown in Figs. 2 and 3. These parts when fitted together form a rocker-bearing, which supports the car-body in its horizontal position and during its initial tilting movement and allows it to be tilted to either side and discharge its contents, the weight of the car-body holding the parts of the bearing together. It has been found, however, that where the bearing or pivotal point of the car-body is arranged centrally with respect thereto considerable effort is required to lift the car preparatory to dumping and to swing it back to its horizontal position after dumping, and in very large cars as many as five or six men may be required to dump the car and return it empty to its normal horizontal position. Considerable time, as well as labor, is thereby lost in the operation of the car. To obviate this objection and provide for quick dumping and the automatic return of the car-body to its normal horizontal position, I provide sockets 9 in the upper end of the standard 5, upon each side of the center thereof, cooperating

with pivots 10 on the plate 8 on each side of the socket 7. These pivots 10 are normally out of contact with the sockets 9 when the car is horizontal; but when tilted to a certain pre-determined angle, preferably from twelve to fifteen degrees, the pivot 10 on that side of the car over which the load is discharged will enter its socket, while the central pivot 6 will temporarily pass out of engagement with its socket, transferring the pivotal or rocking bearing-point from the center of the truck-frame and the car-body to a lower point and one that is eccentric with respect to the center line of the car, the difference of level of the pivots and the degree of eccentricity of the latter one being determined by proper calculation to obtain the desired dumping angle and speed of movement. The momentum of the car-body and its load will cause a continued tilting of the car-body for a distance of about twelve degrees after its pivot 10 enters the socket 9, when a pivot 12 on the extreme end of the standard 5 will enter a cup-shaped socket 13 in the end of the plate 8 and furnish an additional or supplementary eccentric rocking bearing for the car-body to the end of its tilting movement or until it engages the stops 11, provided on the truck-frame. At this point the car-body will have assumed an angle of forty-five degrees (the position shown in Fig. 6) or a greater one, if preferred, and the load will be quickly and completely discharged. During the latter part of the tilting movement the area of the eccentric bearing will be practically doubled to insure a substantial support for the car-body, and at the same time the double or reverse curve of the eccentric bearing will lock the parts together and positively prevent accidental separation of the car-body from the truck during the operation of dumping. As soon as the car is freed from its load the preponderance of weight on the upper side of its temporary eccentric bearing will cause the car-body to tip back onto its center-bearing, and its momentum as it changes its pivotal point from the side to the center, aided by the door in certain sizes of cars, will cause it to swing on its center-bearing back to its normal horizontal position.

In some types of car, where the car-body is relieved of the weight of the door on the side toward which the load is dumped, I am able to utilize such weight on the opposite side to aid in returning the car-body to its normal position. This is illustrated in the drawings where the door 14, provided on each side of the car, is normally supported on the sides of the car, but is arranged to be temporarily supported upon hinged posts or standards 15 when the car is tilted, the invention forming the subject-matter of Patent No. 706,254, issued to me August 5, 1902. As fully set forth in this patent, when the car is tilted the door on that side toward

which the load is discharged will be supported by the pivoted standards and the car relieved entirely of its weight, while the door on the opposite or upper side of the car will remain supported by the sides of the car and aid in returning it to its horizontal position. To prevent the car from swinging beyond its horizontal position after dumping, I provide the hinged frames 16, which are fully shown and described in my Patent No. 706,254, above referred to. By the use of this combined central and eccentric bearing the return of the car-body to its horizontal position after dumping will be automatic. The center-bearing is raised to a point directly beneath the level of the load, and the initial tilting movement of the car will be rendered correspondingly easier, and when it has tilted a predetermined distance the bearing will be automatically transferred from the center to a point at one side thereof, and the momentum of the car-body and its load will carry the tilting movement onward over this eccentric bearing until the body contacts with the fixed stop on the truck-frame beneath. When this occurs the car-body will have assumed the desired angle and its load will be instantly and completely discharged. During this time the car-body will be entirely supported off its center, and at the beginning of its return movement to its horizontal position a large portion of the body, owing to its eccentrically-arranged support, will be above the level of its bearing and the preponderance of weight will be sufficient to return the car-body to its horizontal position without the aid of the operator. As soon as the center pivot enters its socket on the return movement of the car-body, the pivotal point will be transferred back to the center again and the car-body will swing down through its own momentum and weight, aided by the door in some cars, to its normal position, when the loading and dumping operation can be repeated.

I claim as my invention—

1. A dumping-car having central and eccentrically-disposed pivot-bearings located beneath the car-body and on which the body successively turns in dumping the load, said bearings comprising a member having centrally and eccentrically disposed pivots and another member having centrally and end disposed sockets formed with side walls to receive the correspondingly-disposed pivots and provided with pivots located between the central and end disposed sockets to bear against the first-mentioned member between its pivots, substantially as described.

2. A dumping-car having central and eccentric pivot-bearings, comprising a fixed and a movable plate formed with corresponding rocking pivots and sockets, the outer sockets on the movable plate having their outer end walls overhanging the pivots fit-

ting in said sockets so as to bear in locking engagement with the outer face of said pivots, substantially as described.

3. A dumping-car provided with central and eccentrically-arranged pivot-bearings on which the car-body successively turns in dumping the load, said bearings and body being so disposed in relation to each other that when the body is tilted the preponderance of weight thereof to one side of the bearing will cause the body to automatically return to its normal position after dumping.

4. A dumping-car having a central pivot-bearing located beneath the car-body whereon the car-body is normally supported, and an eccentric pivot-bearing upon which the car-body is supported and turned during the intermediate and latter part of its tilting movement, said central and eccentrically-disposed bearings being so located in relation to each other that the centrally-disposed bearing supports the body until the body bears upon the eccentrically-disposed bearing, and said eccentric bearing having a double or reverse curve to lock the body thereon, substantially as described.

5. A dumping-car provided with centrally and eccentrically arranged pivot-bearings on which the car-body successively turns in dumping the load, said bearing being so disposed with relation to the body that when the body is tilted the preponderance of weight thereof to one side of the bearing will cause the body to automatically return to its normal position after dumping, and said central pivot-bearing being beneath and close to the bottom of the load whereby the initial tilting movement of the car-body will be made easier, substantially as described.

6. A dumping-car having a central pivot-bearing located beneath the car-body and whereon the car-body is normally supported in a horizontal position, an eccentrically-arranged pivot-bearing whereon the car-body

is automatically supported during the intermediate and latter part of its tilting movement, and said car-body having doors normally carried by said car-body, and means for temporarily supporting the door on the side toward which the car-body is tilted to discharge its load, and the preponderance of weight of the car-body on the other side aided by the door on that side being above said eccentric pivot when the car-body is in its tilted position, whereby it will automatically return to its normal horizontal position when the dumping operation is completed, substantially as described.

7. The combination with a truck-frame, of standards centrally mounted thereon and provided with centrally-arranged pivots and with eccentrically-arranged sockets and pivots upon each side of said central pivot and below the level of the same, a car-body, plates secured transversely to the under side thereof and having centrally-arranged sockets to receive said central pivots and normally supporting the car-body in a horizontal position, and said plates being also provided at each end with pivots and sockets to cooperate with the sockets and pivots on said standards and whereon the car-body is supported and turned during the intermediate and latter part of its tilting movement, and said central sockets passing out of contact with their pivots during the latter part of the tilting movement of said car-body, and said eccentric sockets and pivots having double or reverse curves whereby their bearing area will be increased and the parts will be locked together during the tilting movement, substantially as described.

In witness whereof I have hereunto set my hand this 3d day of October, 1905.

FRANCIS PETELER.

Witnesses:

RICHARD PAUL,
C. MACNAMARA.