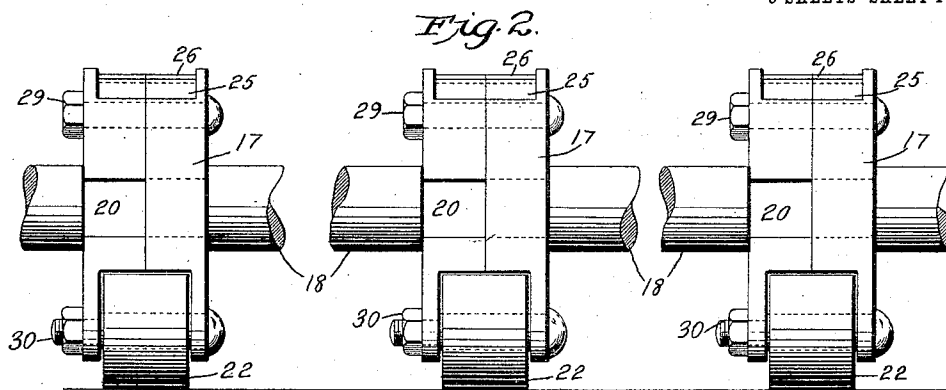
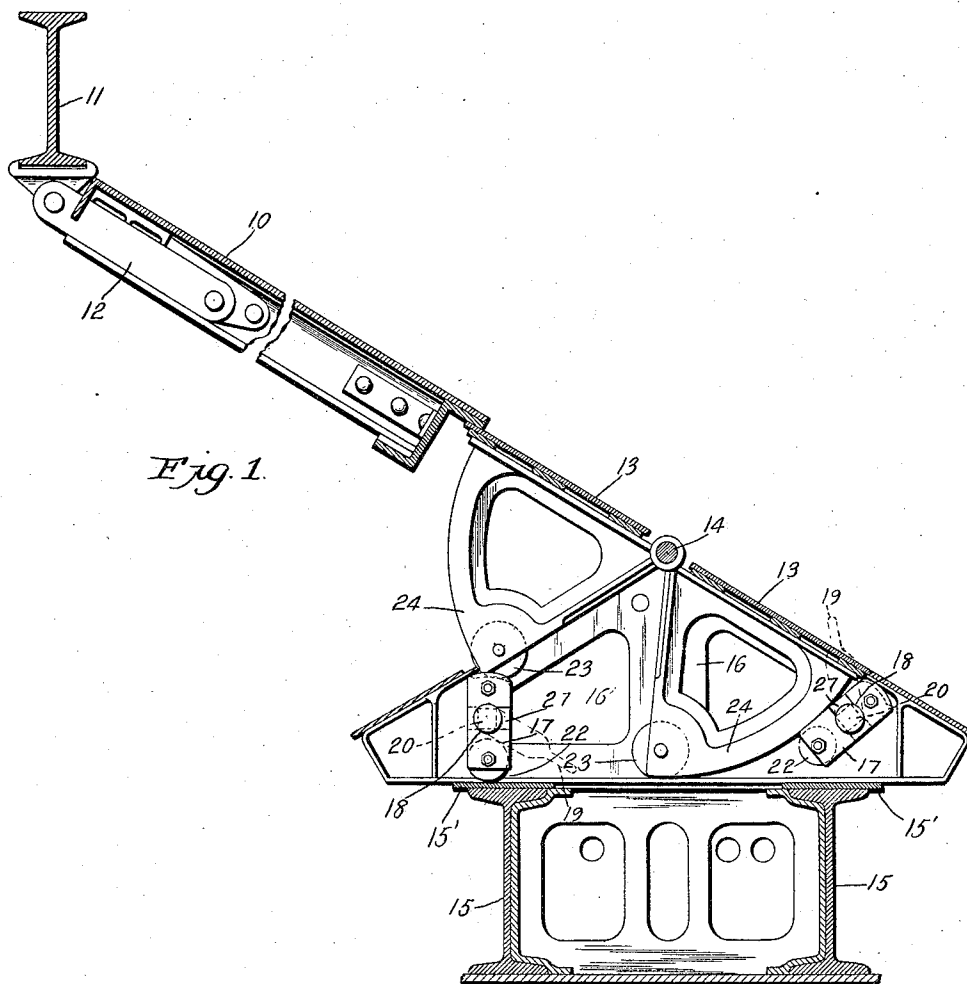


1,066,102.

J. T. GILMAN.
DUMPING VEHICLE.
APPLICATION FILED AUG. 23, 1912.

Patented July 1, 1913.

3 SHEETS—SHEET 1.



WITNESSES

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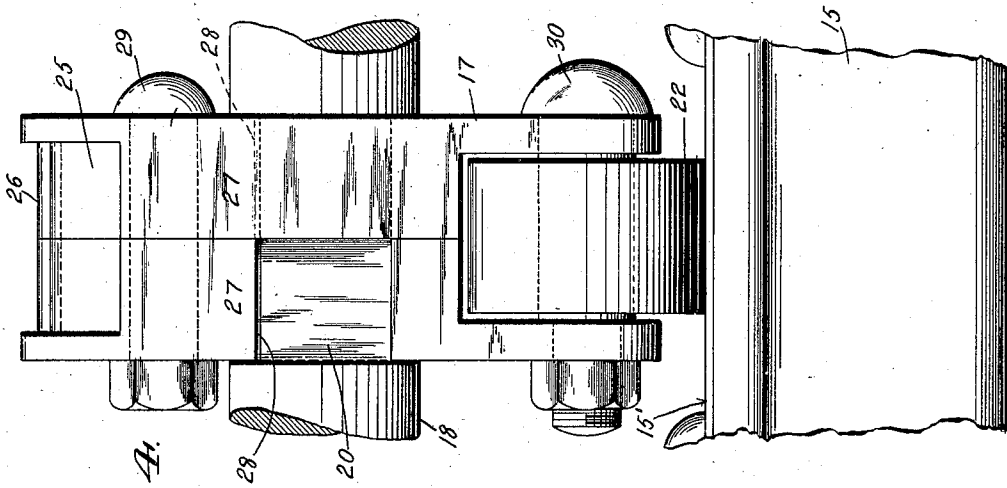


Fig. 4.

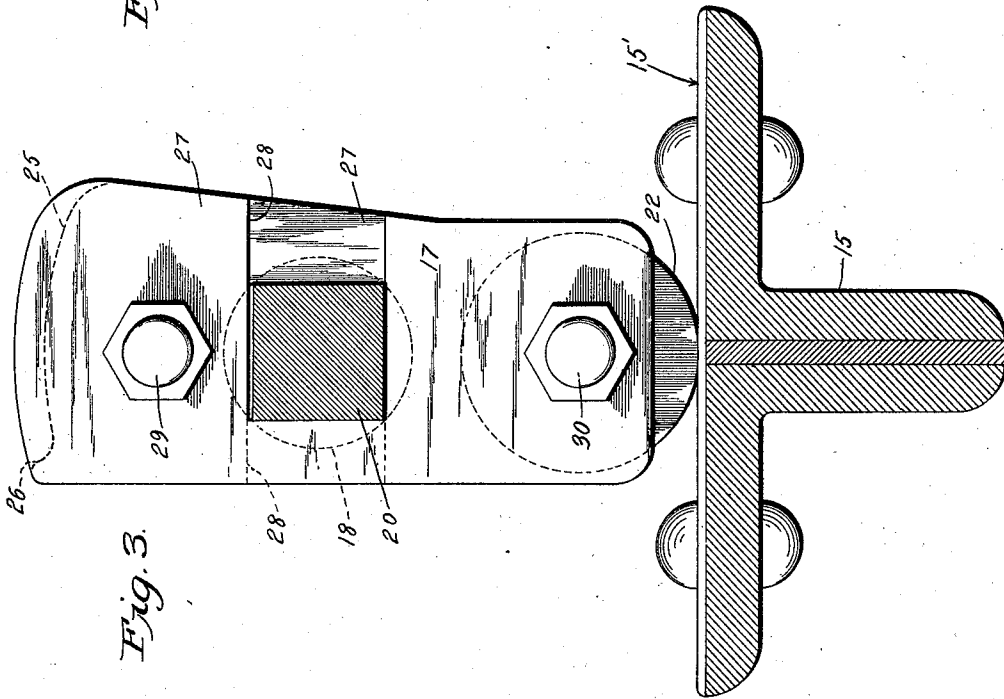


Fig. 3.

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3 SHEETS—SHEET 3.

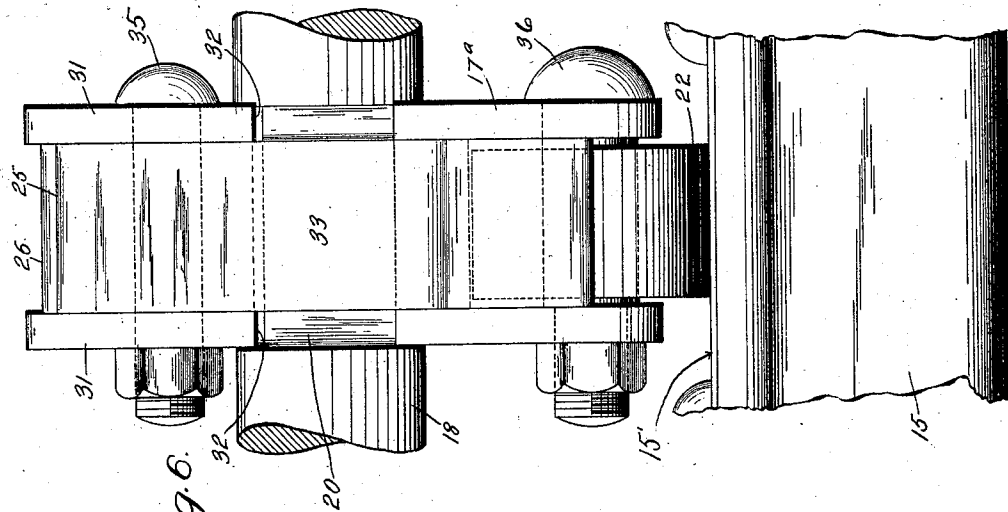


Fig. 6.

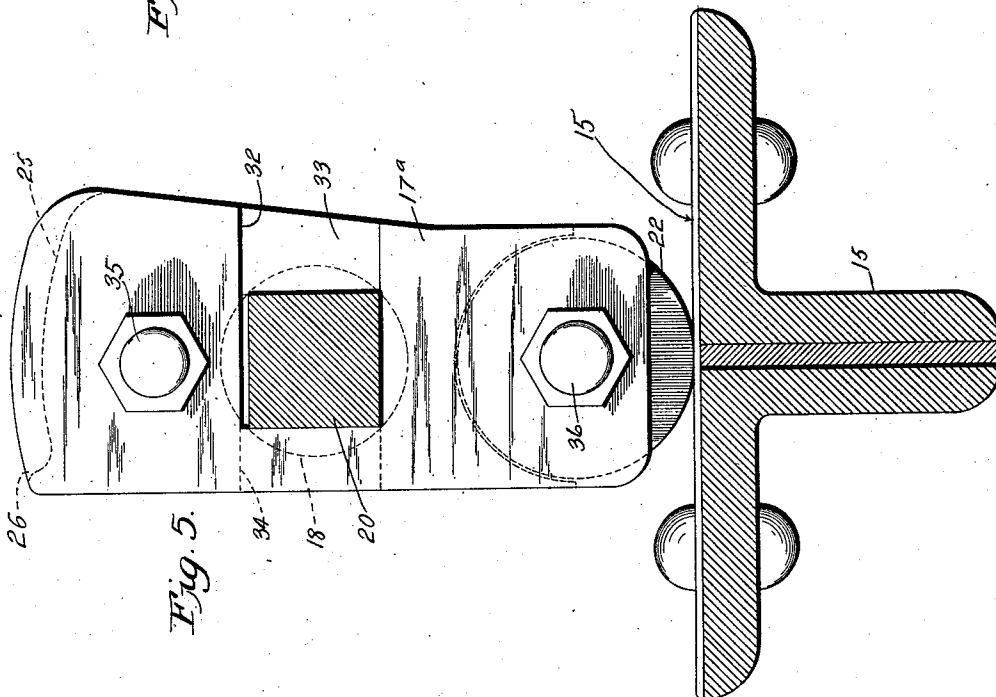


Fig. 5.

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UNITED STATES PATENT OFFICE.

JOSEPH T. GILMAN, OF CHICAGO, ILLINOIS.

DUMPING-VEHICLE.

1,066,102.

Specification of Letters Patent.

Patented July 1, 1913.

Application filed August 23, 1912. Serial No. 716,576.

To all whom it may concern:

Be it known that I, JOSEPH T. GILMAN, a citizen of the United States, residing in the city of Chicago, in the county of Cook and State of Illinois, have invented the following-described new and useful Improvements in Dumping-Vehicles.

The invention relates more especially to dumping cars or vehicles of the well known Goodwin type, and its object is to produce a simple and effective detent mechanism for such cars, which is better adapted to withstand and support the weight of the load and can be operated with less effort and greater reliability.

Further objects include the various features of assemblage and construction of the detents proper and their combination with other parts, as will hereafter be made apparent.

In the accompanying drawings illustrating the invention by means of certain of the preferred embodiments thereof: Figure 1 is a fragmental, vertical sectional view of a car of the Goodwin type embodying the improvements constituting the invention; Fig. 2 is a fragmental side elevation showing several detents arranged on a common operating shaft; Fig. 3 is a side elevation of one of the detents resting on the center sill, which together with the shaft is shown in cross-section; Fig. 4 is an elevation at right angles to Fig. 3; and Figs. 5 and 6 are views similar to Figs. 3 and 4, showing another form of the detent.

Heretofore the detents that supported the center or detent valves in Goodwin cars have been mounted on the longitudinal detent shafts in such manner that the very considerable load imposed on the detents by the valves was transmitted directly to these shafts, which in consequence were apt to lose their alinement and thus become cramped in their bearings and hence difficult of operation. In my co-pending application filed of even date herewith, Serial No. 716,574, I have disclosed and claimed broadly a detent mechanism in which the load is transmitted directly to the center-sill, the releasing shafts being free of the load and constituting operating members only, and the present application relates more especially to another form of such mechanism.

Since the general features of Goodwin cars are well understood, it will not be neces-

sary to describe the customary details of construction further than as shown by Fig. 1. The floor of the cargo receptacle is formed in part of side valves such as 10 hung from side girders 11 by hinge links 12, and the center or detent valves 13 which are hinged on the center shaft 14 and form the support for the side valves when the latter are in the position shown in the figure. The center sill 15, carrying the saddle frames 16 in which the shaft 14 is mounted, forms the base support of the car by which the load is transmitted to the trucks.

In accordance with this invention the detents transmit the load of the center valves directly to the center-sill and are acted on by the detent releasing shafts 18 merely to move them into and out of their load-supporting positions the shafts themselves being free of the load on the detents and hence free to be rotated by ordinary means, such as the levers 19 shown in dotted lines in Fig. 1. The improved detents are in effect, column supports, resting at their lower ends on the center sill 15 and at their upper ends receiving the load imposed by the valves 13. Preferably the shafts 18 pass through the detents intermediate of their ends, the mounting of the detents thereon being such that the shafts operate to turn the detents about their axes without receiving the weight under normal conditions. This form of mounting can be accomplished in various ways and in the present case is effected by squaring the portion of the shaft where the detent is placed, forming the detent with a similar square socket, somewhat larger than the shaft so as to provide enough vertical play to insure that the detents will not bear on top of the shafts instead of on the center sill. The bearing which the detent has on the center-sill may include a roller 22, journaled in its lower extremity and adapted to engage a flat bearing plate 15' secured to the top of the center sill, although the roller can directly engage the top of the center sill if the latter is smooth and flat. The tops of the detents are suitably fashioned with a track groove 25 terminating at the outer end in a stop elevation 26, being thus adapted to support the rollers 23 of the depending struts 24 in the proper load-supporting position.

The detents are preferably made up of two or more complementary pieces which can be placed over the shafts 18 from opposite sides and secured together, the removal or replacement of one or more of the detents thus being simply accomplished without requiring the removal of the shafts. Figs. 1 to 4 illustrate such a two-piece detent, divided in halves on a vertical transverse plane. The two halves 27 are similar but reversed, and have reversely arranged open-ended transverse recesses 28, which when placed together form a square recess receiving the squared portion of the shaft, the vertical dimension of the recesses being somewhat larger than the squared shaft, as above stated, to relieve the shaft of the load and to allow for wear. The halves of the assembled detent are secured together by bolts 29, 30, or other suitable means, and the lower bolt 30 forms the axle of the roller 22, which is thus confined in the bifurcation formed by the offset ends of the sections.

In Figs. 5 and 6, the detent 17^a is made of three pieces. The side pieces 31 are preferably identical, their transverse, open-ended recesses 32 extending in the same direction. The middle piece 33 has a reversely-extending recess 34 and is shorter than the side pieces. Its upper end is appropriately curved to receive the roller 23 of the detent valve, and the side pieces extend above it slightly to form the side flanges of the grooved track. At its lower end the center piece terminates above the roller 22 and is preferably curved to embrace an arc of its periphery. The sections are secured together by bolts 35, 36, the former passing through all the pieces above the shaft, and the latter connecting the side pieces below the shaft and serving as the support for the roller 22.

The operation will be readily understood. To release the valves the detents at one or both sides are tilted about axes intermediate their ends by means of the releasing shafts, so that the upper ends of the detents are moved outward. The detents are restored to supporting position by reverse movement of the shafts, and any suitable or customary locking means may be employed to prevent accidental or undesired rocking of the shafts in the releasing direction. The play between the detents and their shafts may enable the detents to roll on the center sill or base for a greater or less portion of their movement before their lower ends are swung clear of the center sill. Thus, the shafts may be protected from the thrust of the load, not only while the detents hold the valves closed but also while the detents are being turned. The curved edges of the strut members 24 when the center valves are released maintain the detents in an in-

clined position and prevent their accidental or unintentional restoration to upright positions, in which they might obstruct the closing of the valve.

I claim:

1. In a Goodwin type dumping vehicle, the combination of a base support, dumping valves, detents projecting upward from said support to support and release the valves, and releasing shafts directly connected to and engaging said detents and free of the load thereon.

2. In a Goodwin type dumping vehicle, the combination with dumping valves and a bottom support, of detents acting as columns resting on said support and sustaining the load of said valves, and releasing shafts directly connected to and engaging the detents and free of the load thereon.

3. In a valved dumping vehicle, the combination of center dumping valves pivoted at their inner edges, a center sill, column detents supporting said valves and transmitting the load thereof directly to the center sill, and releasing shafts operating directly upon said detents.

4. In a valved dumping vehicle, the combination of valve-supporting detents having openings and releasing shafts passing through the openings in the detents, said openings being enlarged in the direction of load transmission whereby the shafts are free of the load on the detents.

5. In a valved dumping vehicle, the combination with a dumping valve and a support, of a detent resting at one end on the support and sustaining said valve at the other end, said detent being mounted to turn about a fixed axis about midway of its ends to release the valve.

6. In a valved dumping vehicle, the combination with dumping valves and a support, of a releasing shaft, and detents sustaining said valves at one end and transmitting the load thereof to said support at the other end, being mounted intermediate their ends on said shaft so as to be turned thereby to release the valves, said detents having a curved surface at one end to engage and maintain the valve in supported position thereon, and having an anti-friction device at the lower end.

7. In a valved dumping vehicle, the combination with dumping valves and a support, of column detents interposed between said valves and said support and having rollers in contact with the latter, and releasing means for turning said detents about axes intermediate their ends.

8. In a valved dumping vehicle, the combination of dumping valves, a longitudinal valve-releasing shaft, valve-supporting detents each made up of a plurality of complementary pieces having reversely disposed transverse open-ended recesses to-

gether forming an opening receiving the shaft, and means for securing said pieces together.

9. In a valved dumping vehicle, the combination of dumping valves, a longitudinal valve-releasing shaft having squared portions, valve-supporting detents each made up of a plurality of complementary pieces having reversely disposed, transverse, open-ended recesses together forming square openings receiving said squared shaft portions.

10. In a valved dumping vehicle, the combination of side valves, center detent valves supporting said side valves, a center sill support, longitudinal releasing shafts operable at the end of the vehicle, and column detents engaged by said shafts so as to be turned about the axes thereof and resting in load-bearing relation directly on said center-sill support.

11. In a valved dumping vehicle, the combination of dumping valves, a base, valve-supporting detents separate from said

valves and having rolling support on said base, and means for operating the detents outwardly with respect to the free edges of the valves.

12. In a valved dumping vehicle, the combination of dumping valves, a base, valve-releasing shafts, and valve-supporting detents having rolling contact with said base and engaging said shafts with provision for lost motion up and down.

13. In a valved dumping vehicle, the combination of a dumping valve, a base support, a valve-supporting detent between the latter and said valve, and a releasing shaft loosely and directly connected to said detent for moving the same out of a load-supporting relation to said valve.

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

JOSEPH T. GILMAN.

Witnesses:

B. E. SAFFORD,
H. VAN SCOY.