Dec. 20, 1932. A. STARK 1,891,458

DUMP BODY

Filed May 2, 1932 3 Sheets-Sheet 1

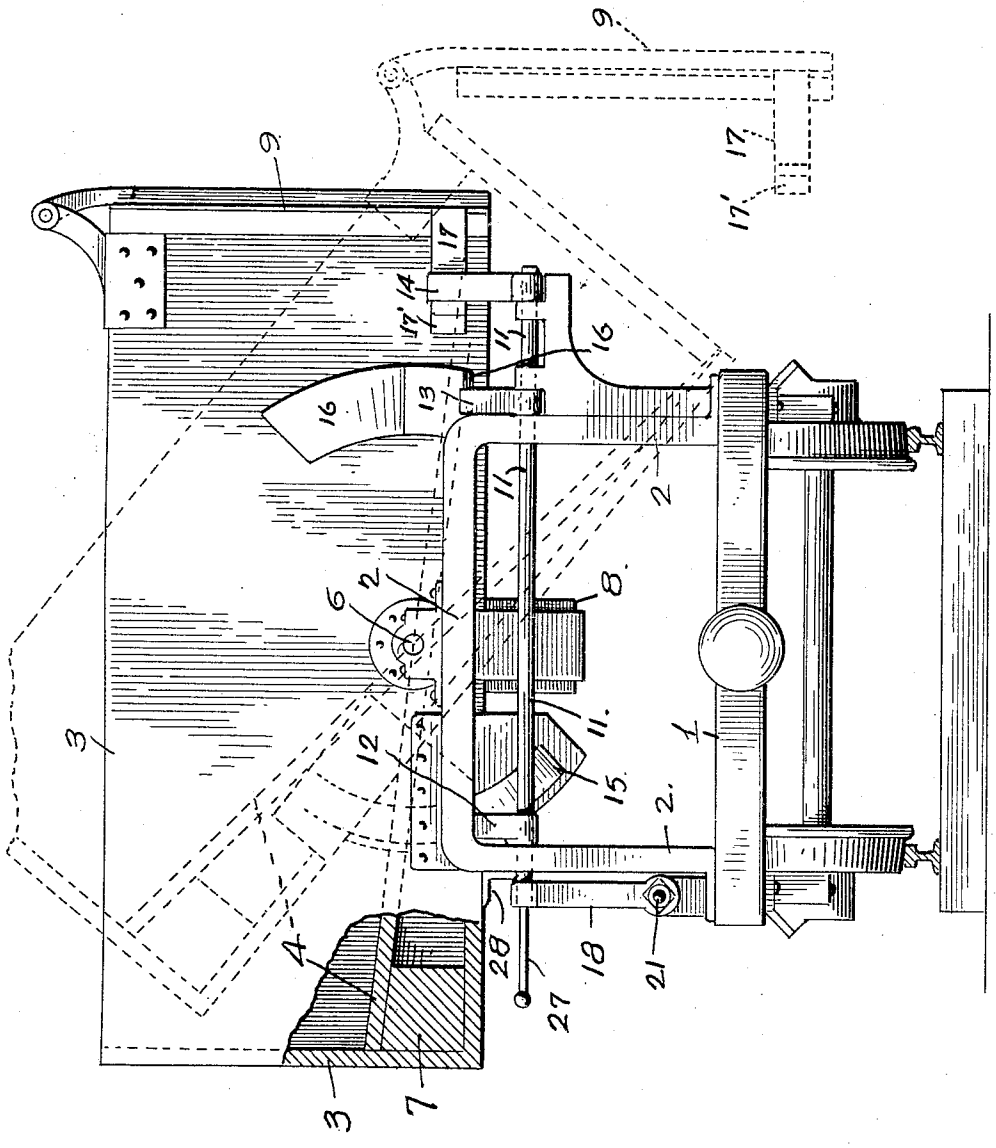



Fig. 1.

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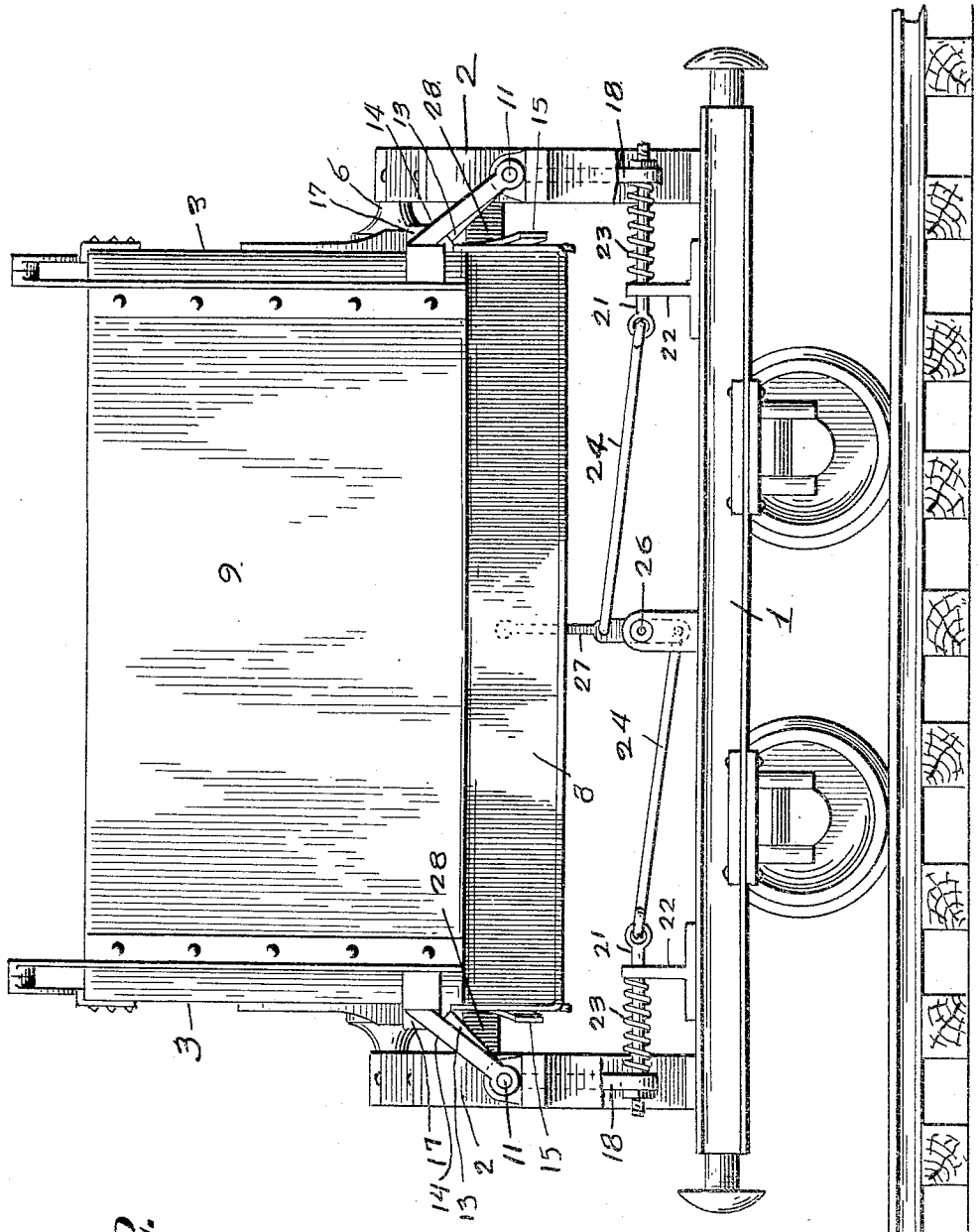



Fig. 2.

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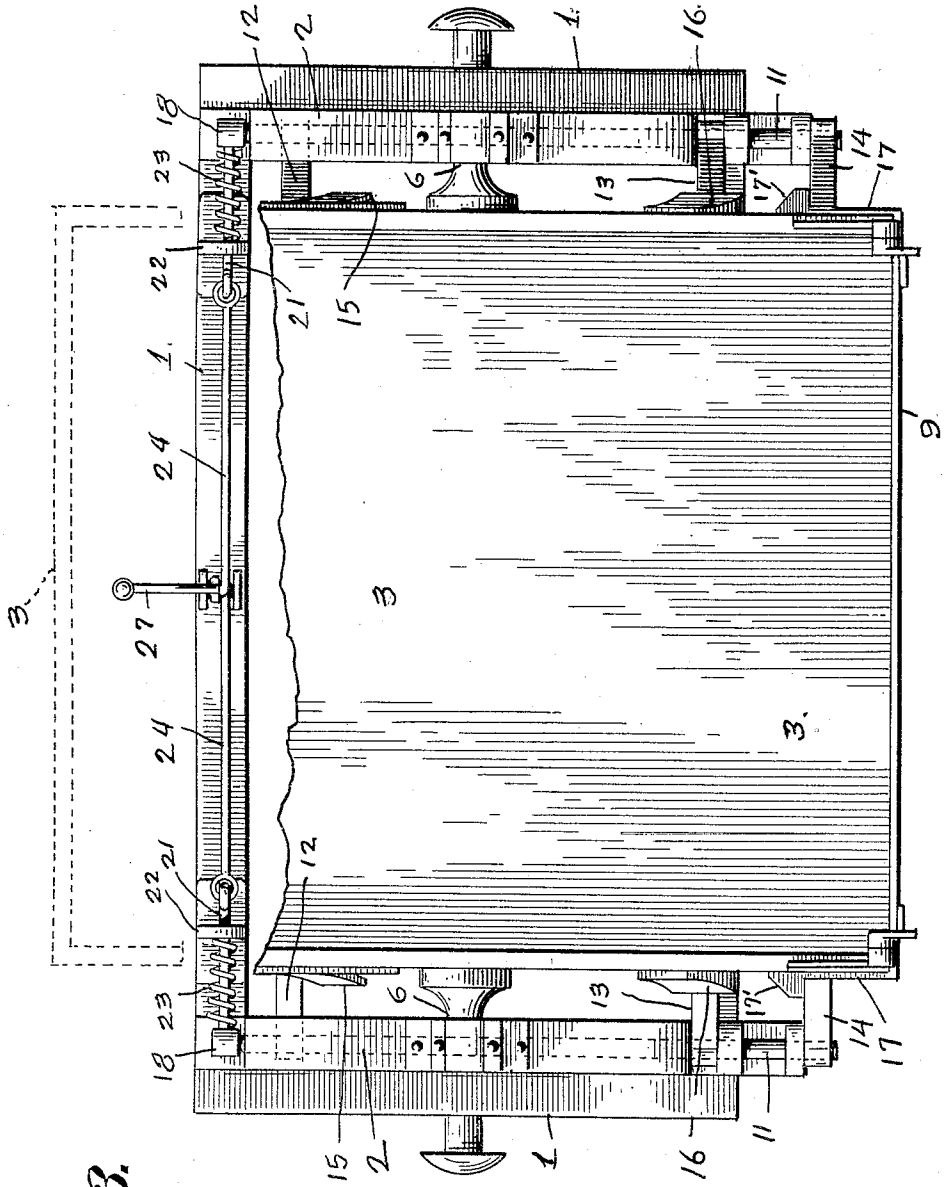



Fig. 3.

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Patented Dec. 20, 1932 1,891,458

# UNITED STATES PATENT OFFICE

ALEXIS STARK, OF SAN FRANCISCO, CALIFORNIA

## DUMP-BODY

Application filed May 2, 1932. Serial No. 608,725.

My invention relates to improvements in dump-bodies for vehicles wherein a pivotally mounted body has an inclined bottom to produce a greater capacity upon one side of its pivotal axis than the capacity upon the opposite side thereof, said lesser capacity side being weighted and heavier than the greater capacity side only when said body is unloaded, said body operating in conjunction with a series of connected latches arranged to engage said body and prevent movement thereof from and to loading and dumping positions, whereby said body may be moved, when loaded or unloaded, from, and to, said dumping and loading positions respectively, by the attraction of gravity when said latches are released.

The primary object of the present invention is to provide a new and improved dump-body.

Another object of the invention is to provide a new and improved dump-body having improved means for automatically moving said body to and from loading and dumping positions, as may be required.

A further object is to provide a new and improved device of the character set forth having improved means for automatically moving a dump-body from loading to dumping position and from dumping to loading position.

A still further object is to provide new and improved means for retaining a dump-body in either loading or dumping position, and for releasing said body from either position.

A still further object is to provide a single element, which, when actuated, will release said body from either position.

A still further object is to provide a new and improved dump-body which will normally be pivotally supported in an unbalanced state to move said body to a dumping position when loaded, and to move said body to a loading position when unloaded.

I accomplish these and other objects by means of the improved device disclosed in the drawings forming a part of the present application, wherein like characters of reference are used to designate similar parts thruout the specification and drawings, and in which—

Fig. 1 is a partly broken end elevation of my improved dumping-body mounted upon a vehicle;

Fig. 2 is a side elevation thereof; and

Fig. 3 is a partly broken plan view of the device.

Referring to the drawings the numeral 2 is used to designate in general a suitable supporting frame mounted upon a suitable vehicle 1, which may be a rail-car, as illustrated, or any other suitable vehicle adapted for transportation.

Pivotally mounted upon the frame 2 is a body 3 having an inclined bottom 4, which bottom 4 is inclined transversely thru the longitudinal axis of the pivotal support 6 of said body 3, as disclosed in Fig. 1 of the drawings, whereby the body 3 has a greater capacity upon one side of its pivotal support 6 than the capacity of said body 3 upon the opposite side of said pivotal support 6, whereby said greater capacity side of said body 3, when loaded, will be actuated by the attraction of gravity to move the said body 3 to a dumping position in a manner hereinafter more fully set forth.

The lesser capacity side of the body 3 is provided with a suitable weight 7, while a second weight 8 depends from the body 3 and directly under its pivotal support 6, the weight of said combined weights and the weight of a load in the lesser capacity side of said body 3 being less than the weight of a load in the greater capacity side of said body 3 when said body 3 is loaded.

The side of the body 3 adjacent, or on, the greater capacity side is open and a door 9 is hingedly suspended from the body 3 and is actuated by the attraction of gravity to close said side when the body 3 is in a loading position, and to normally open said side when said body 3 is in a dumping position, as disclosed in dotted lines in Fig. 1 of the drawings.

Rotatably mounted within the frames 2 on each end of the vehicle 1 are transverse shafts 11, each being provided with a series of latches 12, 13 and 14, rigidly connected to

their respective shafts 11, and engaging, respectively, stops 15 and 16, mounted upon the ends of the body 3, and catches 17 projecting from the bottom of the door 9, said series of latches 12, 13 and 14 being thus connected so that the body 3 may be released from either dumping or loading position in a manner hereinafter more fully set forth.

Each shaft 11 is provided with a depending lever or arm 18 to which are connected rods 21 passing thru suitable supports 22. A spring 23 is interposed upon each rod 21 and between said levers 18 and the supports 22, as disclosed in Figs. 2 and 3 of the drawings.

Links 24 connect said rods 21 to opposite sides of the pivot 26 of an operating or releasing lever 27 whereby one movement of said lever 27 will actuate the shafts 11 and move all of the latches 12, 13 and 14 to disengage their respective stops 15 and 16 upon the body 3 and the catches 17 of the swinging door 9, and against the tension of the springs 23, which tension will tend to normally retain engagement of the latches with their respective stops.

The body 3 is held in horizontal or loading position by means of a suitable longitudinally disposed support or angle iron 28 secured to the frames 2 and under the lesser capacity side of the body 3.

In operation, when the body 3 is loaded, the greater capacity side, or that side adjacent the open side or door 9, is the heavier.

When the operating lever 27 is moved to pull the rods 21 against the tension of the springs 23, the levers 18 partially rotate or oscillate the shafts 11 and the latches 13 and 14 are disengaged from their respective stops 16 and catches 17 on opposite ends of the body 3, and the attraction of gravity, acting upon the load of greater capacity on that side of said body 3, will lower the said body 3 to dumping position, as disclosed in dotted lines in Fig. 1 of the drawings, and, the catches 17 being released, the door 9 will swing open by gravity and the load will slide from the inclined bottom 4 thru the open end of the body 3 and be discharged.

When the body 3 moves to such position, the stops 15 on opposite ends of said body 3 will be moved into a position where they are readily engaged by the latches 12, and said body will thus be held, or retained, in dumping position by said latches 12, so that any lodged or unloaded matter may be liberated and removed, or permitted to slide down the inclined bottom 4.

After the load has been fully discharged or dumped, the operating lever 27 is again operated, which will oscillate the shafts 11, as hereinbefore described, against the tension of the springs 23, and release the latches 12 from engaging relation with their respective stops 15, and, the now heavier side of lesser capacity (upon which the weight 7 is attached), will, operating in conjunction with the depending weight 8, be actuated by the attraction of gravity and the body 3 will be automatically moved to a loading position and supported upon the longitudinal support or angle-iron 28, as disclosed in full lines in Fig. 1 of the drawings.

As the door 9 swings closed, the catches 17 thereon, being provided with beveled ends 17', will move between the latches 14 and the ends of the body 3 and move said latches 14 outwardly to permit the passage of said catches 17 beyond said latches 14 and thereby permit said latches 14 to drop back into securing position.

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

1. A dump truck comprising a frame; a body pivotally mounted upon the frame and movable upon its pivot from and to loading and dumping positions, said body having an inclined bottom and open on the side adjacent the bottom of said incline; a weight attached to the opposite side of said body whereby said body may be normally retained in loading position when unloaded; a gate hingedly suspended from said body to close the open side thereof; a series of connected latches mounted upon the frame and movable to engage said body and retain the same in a loading or dumping position; means for normally moving said latches into engaging relation with said body to prevent relative movement thereof with said frame; and means for moving said latches to release said body whereby the same may be moved to and from dumping and loading positions.

2. A dump truck comprising a frame; a body pivotally mounted upon said frame and having a greater capacity upon one side of its pivotal axis than the capacity upon the opposite side of said axis, said body being heavier upon its lesser capacity side and having an open side upon its greater capacity side whereby said body may be moved to a dumping position by the attraction of gravity upon its load, when loaded, and moved to a loading position by the attraction of gravity upon its heavier and lesser capacity side, when unloaded by the attraction of gravity; a series of connected latches movably mounted upon said frame some of said connected latches engaging said body in either loading or dumping position to prevent relative movement of said body with said frame; means for releasing said latches whereby said body may be moved to and from dumping and loading positions by the attraction of gravity; a door hingedly suspended from said body and movable, by the attraction of gravity, to open said open side of said body when the same is in dumping position and to close said open side when said body is in a loading

position; and catches upon said door for engaging the other said latches when said body is moved to loading position for preventing said door from being opened.

3. A dump truck comprising a frame; a body pivotally mounted upon said frame and having a greater capacity upon one side of its pivotal axis than the capacity upon the opposite side of said axis, said body being heavier upon its lesser capacity side and having an open side upon its greater capacity side, whereby said body may be moved to a dumping position by the attraction of gravity upon its load, when loaded, and moved to a loading position by the attraction of gravity upon its heavier and lesser capacity side, when unloaded by the attraction of gravity; a series of connected latches movably mounted upon said frame some of said connected latches engaging to engage said body in either loading or dumping position, to prevent relative movement of said body with said frame; means for releasing said latches whereby said body may be moved to and from dumping and loading positions by the attraction of gravity; a door hingedly suspended from said body and movable, by the attraction of gravity, to open said open side of said body when the same is in dumping position, and to close said open side when said body is in a loading position; catches upon said door for engaging the other latches, when said body is moved to loading position, for preventing said door from being opened; and means for normally moving said latches into engaging relation with said body when in loading or dumping positions.

4. A dump truck comprising a frame; a body pivotally mounted upon said frame and having a greater capacity upon one side of its pivotal axis than the capacity upon the opposite side of said axis, said body being heavier upon its lesser capacity side and having an open side upon its greater capacity side, whereby said body may be moved to a dumping position by the attraction of gravity upon its load, when loaded, and moved to a loading position by the attraction of gravity upon its heavier and lesser capacity side, when unloaded by the attraction of gravity; a series of connected latches movably mounted upon said frame some of said latches engaging said body in either loading or dumping position, to prevent relative movement of said body with said frame; means for releasing said latches whereby said body may be moved to and from dumping and loading positions by the attraction of gravity; a door hingedly suspended from said body and movable, by the attraction of gravity, to open said open side of said body when the same is in dumping position and to close said open side when said body is in a loading position; catches upon said door for engaging the other latches, when said body is moved to loading position, for preventing said door from being opened; means for normally moving said latches into engaging relation with said body when in loading or dumping positions; and stops mounted upon said body engaged by said latches to prevent movement of said body relatively to said frame.

5. A dump truck comprising a frame; a body pivotally mounted upon said frame and having a greater capacity upon one side of its pivotal axis than the capacity upon the opposite side of said axis, said body being heavier upon its lesser capacity side and having an open side upon its greater capacity side, whereby said body may be moved to a dumping position by the attraction of gravity upon its load, when loaded, and moved to a loading position by the attraction of gravity upon its heavier and lesser capacity side, when unloaded by the attraction of gravity; a series of connected latches mounted upon said frame and movable to engage said body in either loading or dumping position to prevent relative movement of said body with said frame; means for releasing said latches whereby said body may be moved to and from dumping and loading positions by the attraction of gravity; and a weight depending from said body at its pivotal point and extending transversely from the bottom of said body, said weight being actuated by the attraction of gravity to return said body from dumping, to loading, position.

6. A dump truck comprising a frame; a body pivotally mounted upon said frame and having a greater capacity upon one side of its pivotal axis than the capacity upon the opposite side of said axis, said body being heavier upon its lesser capacity side and having an open side upon its greater capacity side whereby said body may be moved to a dumping position by the attraction of gravity upon its load, when loaded, and moved to a loading position by the attraction of gravity upon its heavier and lesser capacity side, when unloaded by the attraction of gravity; a series of connected latches mounted upon said frame and movable to engage said body in either loading or dumping position to prevent relative movement of said body with said frame; means for releasing said latches whereby said body may be moved to and from dumping and loading positions by the attraction of gravity; a weight depending from said body at its pivotal point and extending transversely from the bottom of said body, said weight being actuated by the attraction of gravity to return said body from dumping, to loading, position; and a longitudinally disposed support mounted upon said frame for supporting said body in a loading position.

In witness whereof, I have hereunto set my signature.

ALEXIS STARK.