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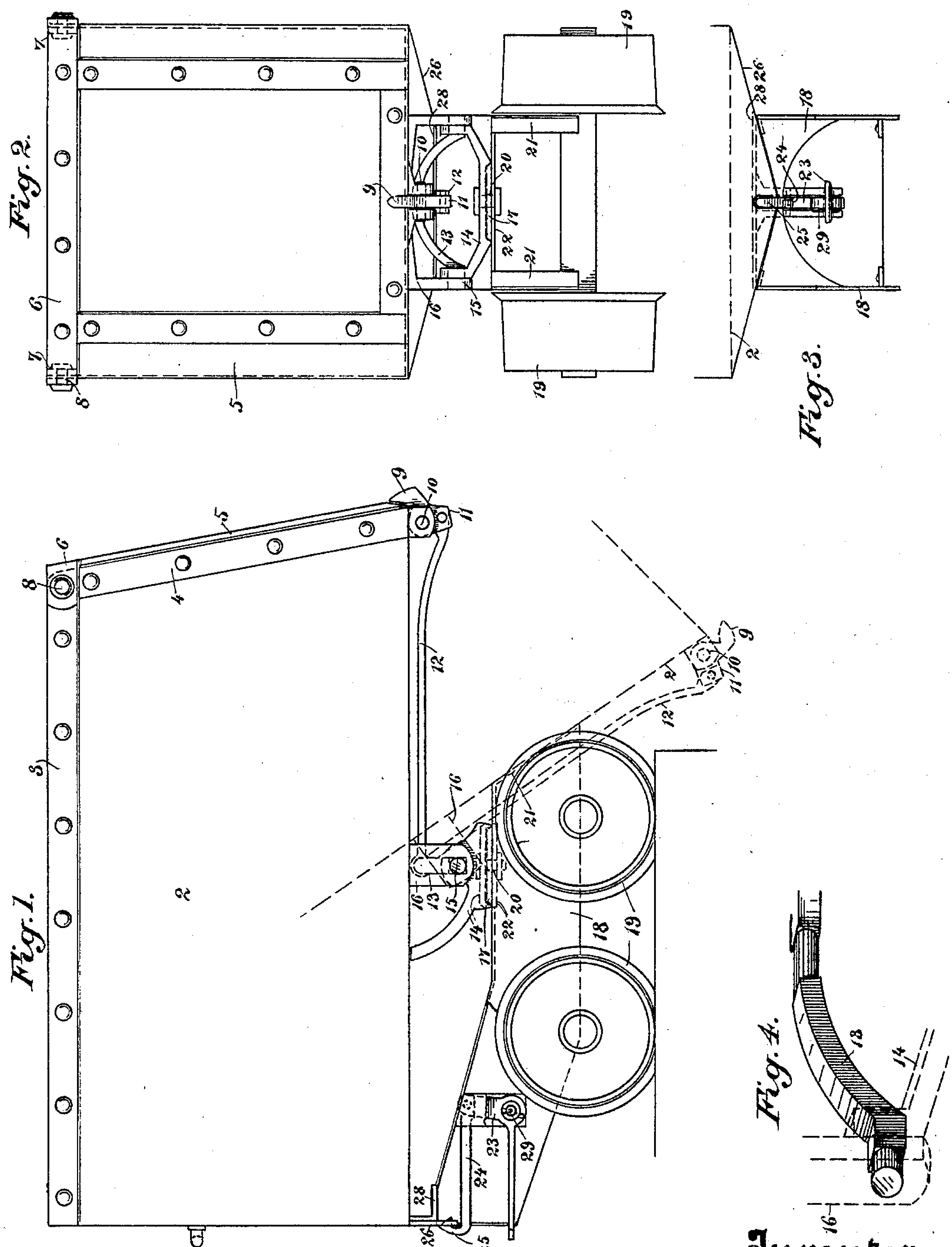
C. H. SNOW.

AUTOMATIC DUMPING ORE CAR.

(Application filed Jan. 13, 1902.)

(No Model.)



Witnesses,

Inventor,

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By Dewey Strong & Co. Atty

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES H. SNOW, OF SAN FRANCISCO, CALIFORNIA.

AUTOMATIC-DUMPING ORE-CAR.

SPECIFICATION forming part of Letters Patent No. 697,685, dated April 15, 1902.

Application filed January 13, 1902. Serial No. 89,447. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HORACE SNOW, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Automatic-Dumping Ore-Cars; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to dumping-cars, and especially that class which are designed to transport ore or other equivalent material to some point where it is desirable to discharge it.

It consists in the novel construction of a hinged swinging door with a latch therefor and disengaging mechanism and also in a means for locking the car in its horizontal position and disengaging it for the purpose of dumping.

In the accompanying drawings, Figure 1 is a side elevation of the car. Fig. 2 is a front view of the same. Fig. 3 is a rear view. Fig. 4 is a detail of the latch-rod-carrying yoke.

It is the object of my invention to provide an automatically-acting dumping device for cars, the mechanism of which is carried entirely beneath the car and protected from injury.

The car-body 2 may be of any suitable form and material. When used for ore-cars, they are usually made of sufficiently-heavy sheet-iron, having strengthening ribs or bars 3 at the top. The open end of the car-body has also strengthening-bars riveted to the sides, as shown at 4. The gate or door 5, which is closable over this end, has a bar 6 riveted across the top, and at the ends a channeled section 7 extends at right angles with the remainder of the bar, and this channeled section fits over the upper rounded rear angle of the body 2 and is pivoted by pins, as at 8, to the upper edges of the car sides, so as to swing about these pivot-pins.

At the bottom and centrally beneath the car is a latch 9, pivoted, as at 10, and an arm or crank 11 projects approximately at right angles from the hook-latch and is connected by a rod 12 with the central portion of the arched bar 13, which central portion is made round, so that the strap end of the bar 12 fits and is turnable upon it. This arched bar 13 is made rectangular or of such shape near the ends that it can be immovably secured upon the turn-table 14, and the ends of this arched bar are turned to form trunnions 15, upon which the ends of the yoke 16 are turnable. This yoke being fixed to the bottom of the car is thus supported upon the turn-table and is turnable about the trunnions 15 to tilt it for dumping purposes. The upper portion 14 of the turn-table is made concaved below and fits over the correspondingly-shaped bed-piece 17, which is fixed to the frame 18, the latter being mounted upon the wheels 19, which form the support and means of transportation for the car. A pivot-pin passes through the two parts of the turn-table, as shown at 20, and the table being thus turnable about its vertical axis the end of the car can be turned to any point or direction where it is desired to discharge. The inverted-cup shape of the turnable joint prevents the ingress of any foreign matter and makes it always easy to operate.

By reason of the arched trunnion-piece 13 being fixed it will be seen that the car-body when tilted turning about the trunnions 15 will project the rear end of the body, and by reason of the trunnions 15 being located below the attachment of the rod 12 the car-body will turn about the trunnions, while the rod 12, being held stationary by the fixed arch 13, will act upon its lever connection 11 to withdraw or turn the hook-latch 9 until the door is released and allowed to open outwardly for the discharge of the contents of the car.

The side frames 18 of the truck have the rear ends beveled or inclined, and angle-plates 21 are fixed thereto at each side to form a stop against which the bottom of the car contacts when it is tilted for the purpose of discharge.

The space intermediate between the sides is covered by a metal plate 22, which supports the turn-table, and the rear edge of this plate is cut away sufficiently to allow the rod 12 to lie between the bearing-plates 21 without contacting with the edge of the plate 22 when the car has been tilted for discharge.

When the car is in its normal horizontal position, it is latched as follows: The rear ends of the side plates 18 are turned upwardly, as shown, and between them is fulcrumed a bell-crank lever 23. The vertical shorter arm has

connected with it the shank 24 of a hook-latch 25, and this latch is adapted to engage a slot in the rear plate 26 of the car-body, this plate being extended down in a V shape in the center, so as to project below the bottom of the car sufficiently to allow of the latch-slot. The rear end of the truck has a recess formed by cutting away the rear plate to an angle similar to that of the rear plate of the car, so that this plate can pass down into the recess, and angle bars 28, carried by the rear end of the car-body, contact with the top of the upturned rear ends of the truck, so as to form a rigid support.

The horizontal arm of the angle-lever 23 serves as a lever by which to disengage the hook 25 and release the car when it is to be dumped. This lever being in the center and the rear plate of the truck-frame being arched, as shown, makes it convenient to operate the lever by foot. A coil-spring surrounds the pivot-pin of the lever, as at 29, and this spring has sufficient tension to normally draw the hook-latch 25 inwardly and cause it to engage with the slot in the car-body when the latter is brought to its normal position. The latch is inclined or beveled so that the latch-plate striking it will push it back until it arrives opposite the slot, when the spring will cause it to engage. By this construction the dumping and latching mechanism is made very compact, operates automatically, and is entirely protected from injury. This construction is equally applicable to end or side opening doors.

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

1. The combination with a car-body having a hinged swinging gate or door and a truck upon which the body is tiltably mounted, of a fulcrumed latch and lever adapted to hold the door in a closed position, a fixed yoke having trunnions upon the end about which the car-body supports are turnable, and a rod connecting the arched portion of the yoke with the latch of the door.

2. A wheeled truck, an arched yoke carried thereby having trunnions at the ends, a car-body having supports journaled and turnable upon said trunnions, a hinged door by which the end of the car-body is closed by gravitation, a fulcrumed latch engaging the lower edge of the door when closed, said latch having a lever-arm and a rod connecting said lever-arm with the upwardly-arched portion of the trunnion-shaft.

3. A wheeled truck having the two members of a turn-table carried thereon, the upper member having upturned sides, trunnions projecting from the sides, a car-body having supports extending downwardly from the bottom and turnable upon said trunnions, an upwardly-arched central portion of the trunnion-shaft having one end of a rod turnably connected therewith, a hinged automatically-closing door at the end of the car-body, a pivoted latch adapted to engage the bottom of the door and having a downwardly-projecting arm and connection between said arm and the opposite end of the rod whereby the tilting of the car unlatches the door.

4. The combination with a wheeled truck and a car-body tiltably mounted thereon, and a turn-table upon the upper member of which the car-body is mounted, of an upwardly-convexed or arched bar made substantially rectangular near the ends so that it may be immovably secured upon the turn-table, the ends of said arched bar provided with trunnions, and a yoke on the car-body and engaging and turnable about said trunnions.

5. A car-body having an inclined open end, a door hinged at the top and closable by gravitation, a centrally-pivoted latch adapted to engage the bottom of the door and having a downwardly-projecting arm, a truck having a trunnion-support about which the car is tiltable, a fixed pin or shaft located above the line of the trunnions and a rod connecting said shaft with the lever-arm of the latch.

6. A wheeled truck having an upwardly-inclined rear end with side frames beveled or inclined to form a transverse V-shaped depression, a tiltable car-body having an extension below its rear end fitting said depression and having a slot made centrally therein, an upturned horizontally-moving latch adapted to engage the slot, a spring-pressed angle-lever carried upon the truck, to which the opposite end of the latch-bar is pivoted and a foot-lever projecting beneath the latch and adapted to disengage the latch when the car is to be dumped.

In witness whereof I have hereunto set my hand.

CHARLES H. SNOW.

Witnesses:
S. H. NOURSE,
JESSIE C. BRODIE.