Jan. 19, 1937. E. W. TAYLOR 2,068,156

CAR DUMPING APPARATUS

Filed May 8, 1933 3 Sheets-Sheet 1

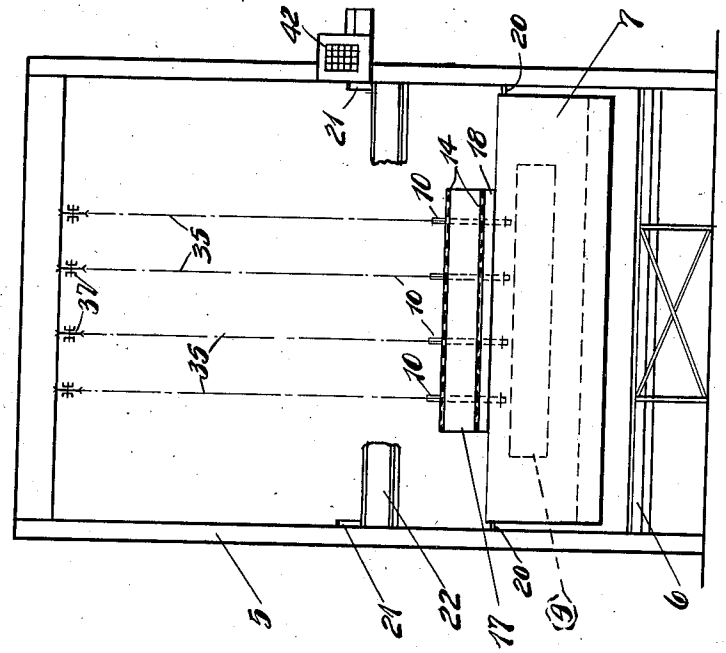


Fig. 1

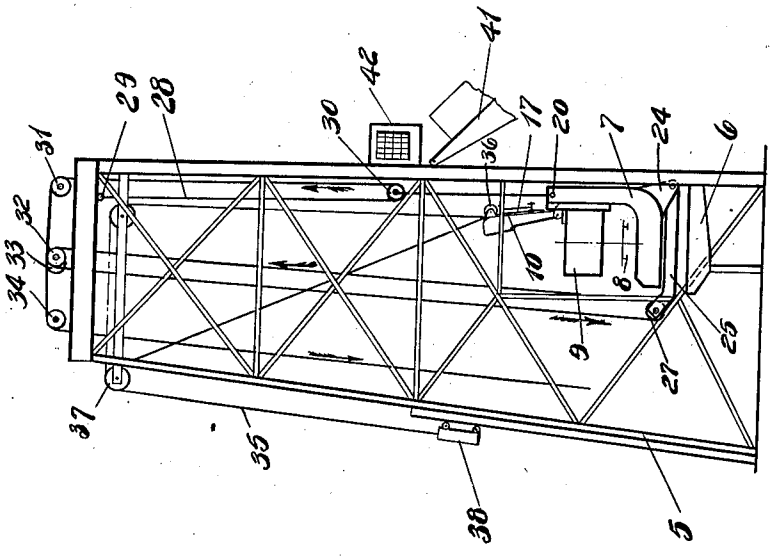


Fig. 2

INVENTOR
Ernest W. Taylor.
BY
Frank C. Fearnow,
ATTORNEY

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CAR DUMPING APPARATUS

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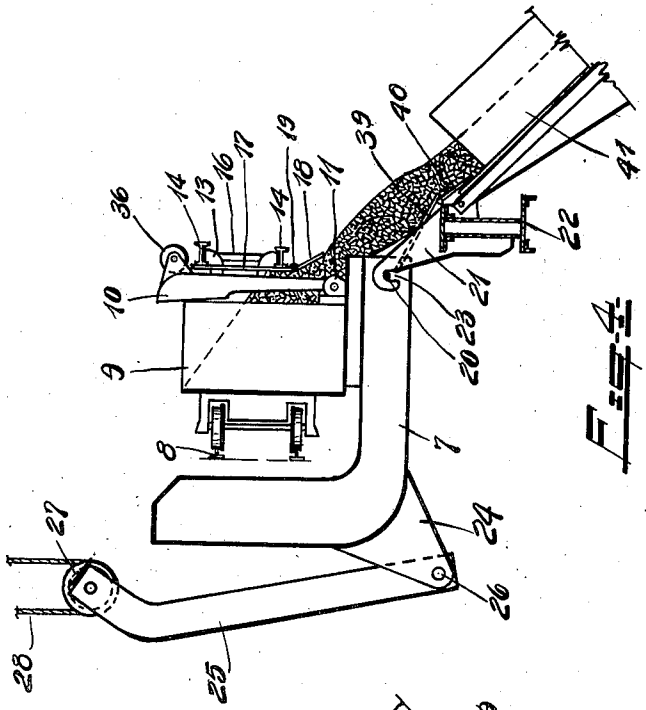


Fig. 4.

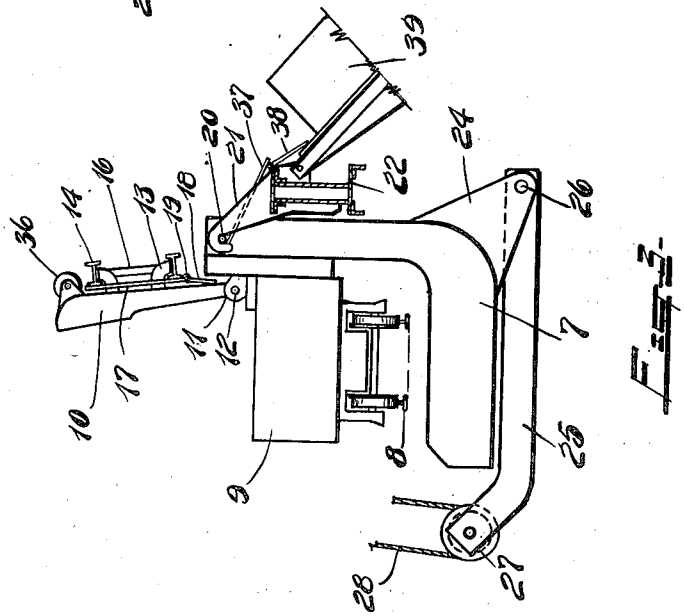


Fig. 3.

INVENTOR.

BY Ernest W. Taylor.

Frank C. Fearman.

ATTORNEY.

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CAR DUMPING APPARATUS

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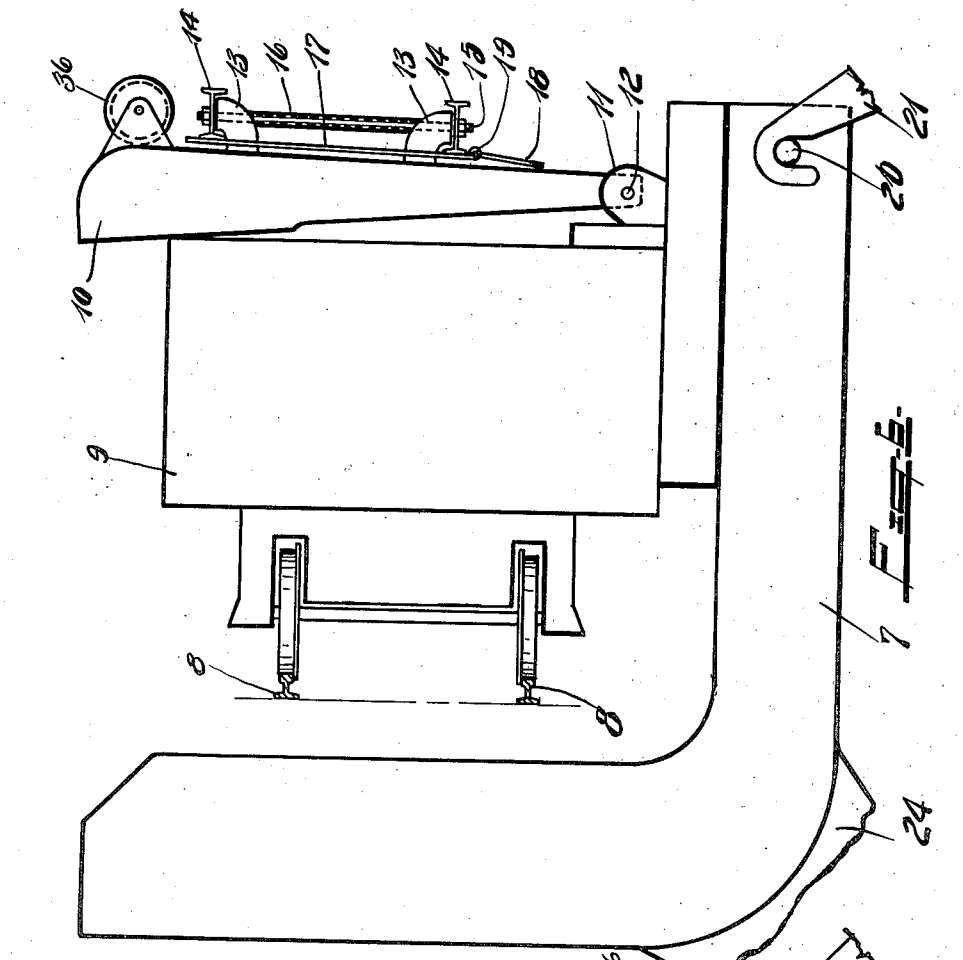


Fig. 5.

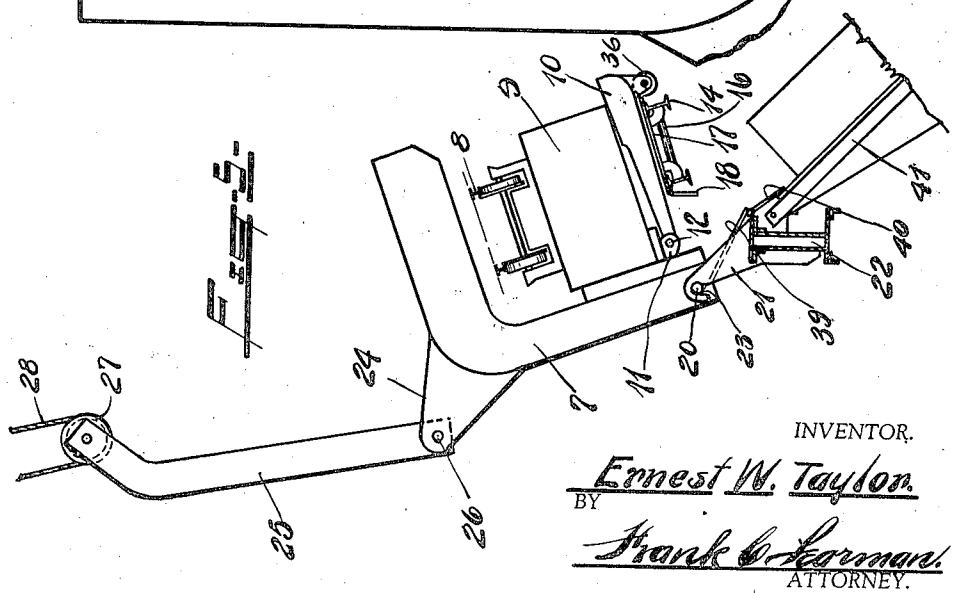


Fig. 6.

INVENTOR.

Ernest W. Taylor.

BY

Frank C. Fearnan.

ATTORNEY.

Patented Jan. 19, 1937

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UNITED STATES PATENT OFFICE

2,068,156

CAR DUMPING APPARATUS

Ernest W. Taylor, Bay City, Mich., assignor to Industrial Brownhoist Corporation, Bay City, Mich., a corporation of Ohio

Application May 8, 1933, Serial No. 669,823

3 Claims. (Cl. 214—123)

This invention relates to car dumping apparatus of the class such as used in connection with the handling of coal or other materials for commercial purposes, and which is utilized in discharging the material from railroad cars into an apron and chute which delivers it to a storage bin, barge, or steamship.

The prime object of the invention is to prevent the material being "thrown" by the action of the car, as it is swung up and over, thereby eliminating breakage and the undesirable production of small particles known to the trade as "fines" and "slack", and which has a limited sales value.

Another object is to provide means for limiting the movement of the material as the car is being swung to dumping position, said means forming a restricted discharge opening through which the material is discharged.

A further object is to provide simple, practical, and economical means which prevents severe shocks and sudden drops as the material is dumped, and which meters and holds the discharging mass in a solid stream, preventing large pieces from gathering inertia and causing considerable breakage as they fall.

These and other features of the invention will be more fully apparent from the following specification, when read in connection with the accompanying drawings, in which:—

Fig. 1 is an elevation illustrating a material handling apparatus embodying the invention.

Fig. 2 is a view in elevation from the left side of Fig. 1.

Fig. 3 is an enlarged fragmentary view in elevation illustrating the cradle, coal car, and deflector plate.

Fig. 4 is a view similar to Fig. 3 illustrating the cradle tilted to discharge the material from the car.

Fig. 5 is also a similar view illustrating the extreme tilt of the cradle.

Fig. 6 is an enlarged fragmentary end view showing the cradle, car, and clamp.

Referring now in detail to the drawings, the apparatus consists briefly of a frame 5 which can be of any desired design. The cars are run to discharging position over a trestle 6 between the ends of which a car cradle 7 is located so that the car can be run onto the cradle for dumping. The car dumping cradle carries track rails 8, and when the car 9 is run onto the cradle, it is shifted to position against the side wall of the cradle by means of conventional shifting mechanism (not shown), so that when the cradle is tilted, the car will not shift thereon.

The cradle is raised and lowered in the conventional manner, and clamps 10 serve to rigidly secure the car in position, these clamps being pivotally connected to clamp brackets 11 by means of the pins 12. Brackets 13 are secured to one or more of the clamps 10 in spaced apart relation, and beams 14 are secured to these clamps, said beams being spaced by means of a rod 15 on which a pipe separator 16 is mounted.

A preferably flat plate member 17 is secured to the beam members 14 in any approved manner, and is provided with a lip section 18 which is connected to the main plate by means of hinges 19, and when the car is swung to discharging position as shown in Fig. 4 of the drawings, this lip swings outwardly, by gravity, for metering and controlling the discharge of the material.

Laterally disposed pivot pins 20 are provided on the ends of the cradle, and brackets 21 are secured to the adjustable girder frame 22, and are formed with sockets 23 in which the pins 20 engage when the cradle has been raised to dumping position.

Legs 24 are provided on the cradle in spaced relation, and links 25 are pivotally connected thereto by means of pins 26, the outer free ends of the links being bent as shown, and sheaves 27 are secured thereto.

The cradle raising mechanism comprises a cable 28 which is anchored to the frame at the point 29, and a sheave 30 is secured to the cradle, said cable being trained around the sheave 30, thence leading up and over the sheaves 31 and 32, thence down and around the sheave 27, thence up and over the sheaves 33 and 34, and thence down to a cradle hoisting drum (not shown). Cables 35 are connected to the clamps 10 and lead around the sheaves 36, and thence over the sheaves 37, thence being connected to the counterweights 38 so that the raising and lowering is facilitated.

When the cradle is raised to position so that the pivot pins 20 engage the sockets in the brackets 21, the cradle will be fulcrumed and swung up and around so that the material is dumped against the plate 17, said plate being so positioned as to leave a relatively narrow discharge opening through which the material can be discharged. The material flows outwardly in a steady stream, the lip section 18 swinging outwardly, metering the material and holding large lumps in the stream, thus eliminating breakage and the consequent "fines" and "slack". The

plate and lip are of a length to cover the car, and the plate is disposed at a predetermined distance from the top so that as the car is tipped, there will be very little dust and the movement of the coal or material will be free and easy. A stationary plate 39 prevents the material falling on the adjustable girder frame, and a similar plate 40 is pivotally connected to said frame and closes the gap between the frame and the end of the apron 41, thereby eliminating shocks and sharp drops as the material is unloaded, a housing 42 being provided on the movable girder 42 as usual.

From the foregoing description it will be obvious that I have perfected a very simple, practical, and economical means for regulating and controlling the flow of material as the car is being dumped.

What I claim is:

1. The combination with a material handling apparatus of the character described and including an inclined discharge apron and a cradle adapted to accommodate a car, clamps pivotally connected to the apparatus, a flat cover member secured to said clamps, and forming a closure for the upper end of the car when it is tilted to discharge its contents, and a hinged section on the one edge of the cover, said section being adapted to swing up and form a discharge opening between the edge of the car and the main body of said cover when the car is being tilted.

2. The combination with a material handling apparatus of the character described and including an inclined discharge apron and a cradle adapted to accommodate a car, clamps pivotally connected to the apparatus, a flat cover member secured to said clamps, and including a longitudinally disposed lip section hingedly secured thereto, said cover and lip section forming a closure for the upper end of the car, said lip section swinging outwardly as the car is being tilted to form a discharge opening between the edge of the car and the main cover section to control and meter the material discharging from the car into the apron.

3. The combination with a material handling apparatus, including a cradle adapted to accommodate a car, clamps pivotally connected to the apparatus adjacent the one edge of the car, a flat cover plate secured to the clamps, a free swinging lip section hingedly secured to and forming a continuation of said plate, said lip being disposed directly adjacent the clamp pivots and adapted when the car is tilted to swing outwardly and form a discharge opening between the edge of the car and the cover plate.

ERNEST W. TAYLOR.