C. E. HILTON.

DUMPING DEVICE.

APPLICATION FILED JUNE 20, 1916.

1,225,813.

Patented May 15, 1917.

2 SHEETS—SHEET 1.

FIG. 1.

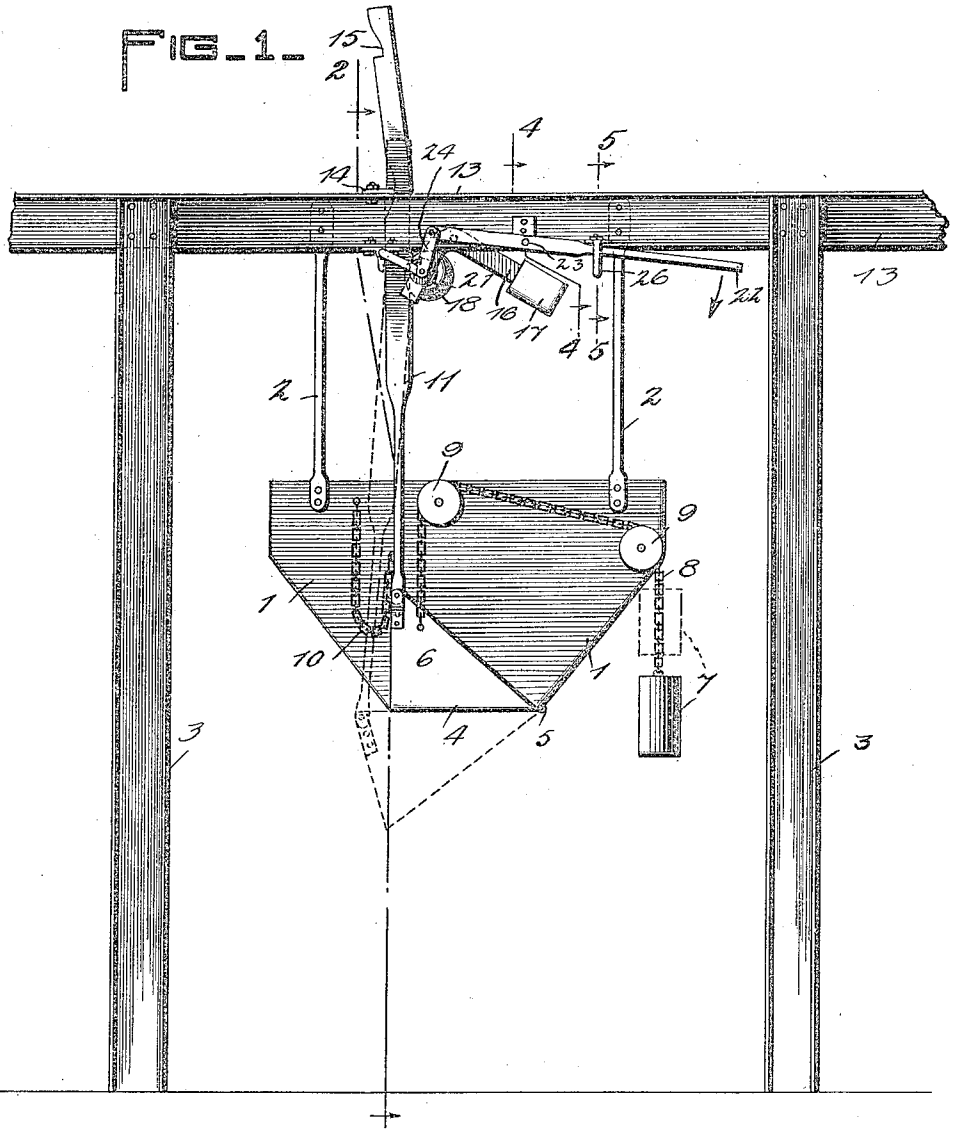
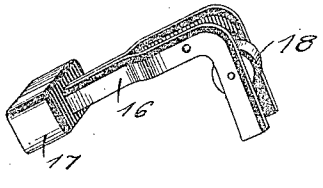


FIG. 6.



WITNESSES

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2 SHEETS—SHEET 2.

FIG. 2.

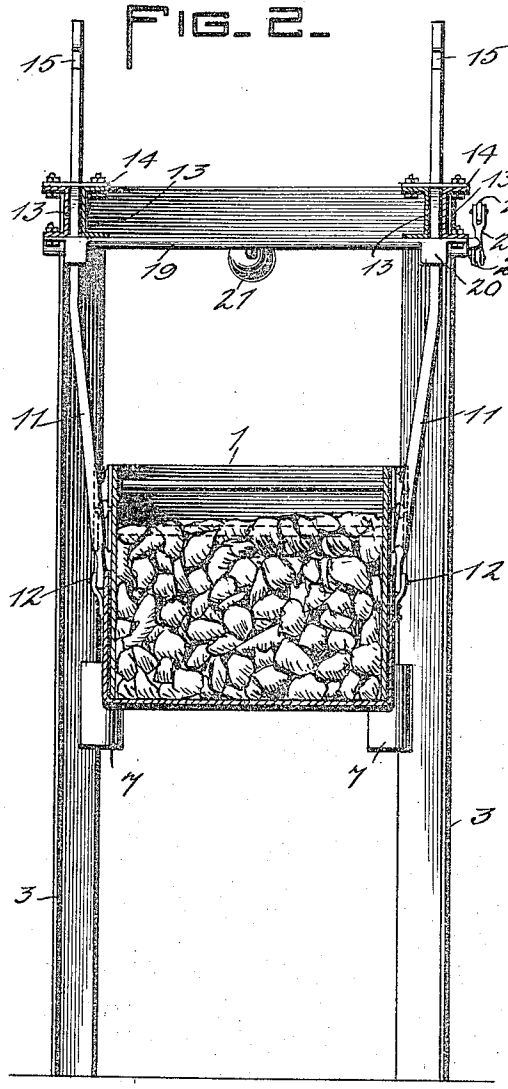


FIG. 3.

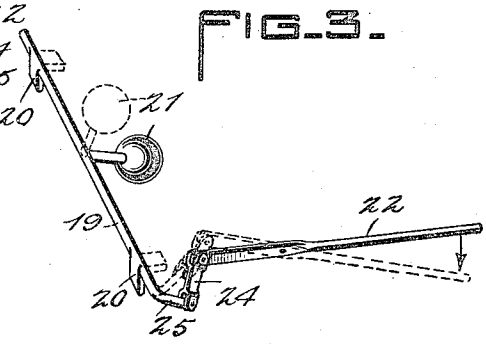


FIG. 4.

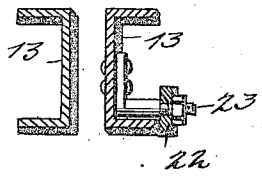
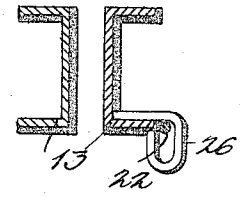


FIG. 5.



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UNITED STATES PATENT OFFICE.

CLARENCE E. HILTON, OF MONARCH, WYOMING.

DUMPING DEVICE.

1,225,813. Specification of Letters Patent. Patented May 15, 1917.

Application filed June 20, 1916. Serial No. 104,755.

To all whom it may concern:

Be it known that I, CLARENCE E. HILTON, a citizen of the United States, and a resident of Monarch, in the county of Sheridan and State of Wyoming, have invented an Improvement in Dumping Devices, of which the following is a specification.

My invention is an improvement in dumping devices for weigh baskets, hoppers, and the like, and has for its object to provide mechanism of the character specified, for firmly locking the counterweighted discharging door of the hopper or weigh basket in open or closed position, and wherein manually operated means is provided for releasing the door in either position.

In the drawings:

Figure 1 is a side view of the improvement applied to a weigh basket.

Figs. 2, 4 and 5 are sections on the lines 2—2, 4—4, and 5—5, respectively, of Fig. 1, each view looking in the direction of the arrows adjacent to the line.

Fig. 3 is a perspective view of the releasing lever.

Fig. 6 is a similar view of the bell-crank lever.

The present embodiment of the invention is shown in connection with a weigh basket 1, supported by links 2 from a super-structure 3, and the weigh basket, which is hopper-shaped, is provided with a discharge opening in its bottom, which is adapted to be closed by a door 4, said door being hinged to the bottom of the basket at 5, and having side flanges 6 which fit against the ends of the basket when the door is closed. The door is normally held closed by means of counterbalances 7, each counterbalance being secured to one end of a flexible member 8, a chain, in the present instance, the other end of which is connected with one of the side flanges 6 of the door. Each flexible member passes over direction elements 9 in the form of pulleys, and the door is limited in its opening movement by stops, in the form of chains 10, each of which is connected at one end to one of the flanges of the door and at the other end to the adjacent end of the basket.

A bar 11 is connected with each flange of the door, each bar being pivoted to the flange as indicated at 12, and the upper end of the bars are offset outwardly as shown more particularly in Fig. 2, each passing between the upper longitudinally extending members of the super-structure, as shown in Fig. 2. The said members 13 are channel bars, which are spaced apart from each other, as shown in Figs. 4 and 5, a sufficient distance to permit the passage of the bars 11, and catches 14 are secured to the upper edges of the channel bars of each pair in front of the bar. Each bar has notches 15, which are adapted to engage the catches 14 to hold the bars with the door open or closed. When the upper notches 15 are in engagement with the catches, the door is held open in the dotted line position in Fig. 1, while when the lower notches are engaged with the catches the door is held closed in the full line position of Fig. 1. The notches face in opposite directions, the upper notches facing upward, while the lower notches face downward. The bars are normally held in engagement with the catches by means of counterbalance elbow levers, one of which is shown in Fig. 6. Each of these elbow levers 16 has on one arm a weight or counterbalance 17, and the said arm is forked intermediate its ends, the fork being continued into the other arm, and a roller 18 is journaled between the arms of the fork. Each elbow lever is journaled between the adjacent pair of channel bars 13, in such manner that the roller 18 will engage that edge of the adjacent bar 11 remote from the catch, and will yieldingly press the bar toward the catch.

A cross arm 19 is journaled transversely of the super-structure near the bars, and on the opposite side thereof from the bell-crank levers, and the arm is provided near each end with a radial extension 20, and each extension engages that edge of the adjacent bar 11 adjacent to the notches. The cross arm is counterweighted, as indicated at 21, to normally hold the extensions 20 out of engagement with the bars, and means is provided for oscillating the arm to cause the extensions to press the bars away from the catches.

The said mechanism comprises a lever 22, which is pivoted to the super-structure as indicated at 23, and one end of the lever is connected by means of a link 24 with a crank arm 25 on the cross arm. The opposite end of the lever passes through a loop 26 on the bars 13 of the super-structure, the loop limiting the swinging movement of the lever.

In use, when the basket is to receive a load,

the parts occupy the full line position of Fig. 1. The rollers 18 engage the bars 11, and hold the said bars with the lowermost notches in engagement with the catches 14, thus locking the door in closed position. When a load of coal, for instance, is dumped into the weigh basket, the bars will permit opening movement of the door, and after the coal has been weighed and it is desired to dump the same, it is only necessary to move the outer end of the lever 22 in a direction indicated by the arrow adjacent to the said lever. This movement of the lever oscillates the cross arm, and causes the extensions 20 to press the levers away from the catches, thus releasing the lowermost notches from the catches, and the weight of the material in the basket will open the door against the pressure of the counterweights, thus dumping the load. As soon as the material has discharged, the counterweights will close the door, and the bell-crank levers will cause the bars to lock with the catches, thus locking the door in closed position ready for another load.

The device is especially adapted for use with weigh baskets at mines, but it is obvious that it could be used with equal advantage in other places, as, for instance, in the handling of grain, ores, and the like, and at coaling stations for locomotives.

I claim:

1. In combination with a weigh basket having a counterweighted discharging door and stops for limiting the opening movement of the door, of means normally operative for locking the door in open or closed position and manually operated means for releasing the said locking means in either position, said locking means comprising vertically movable bars pivoted at their lower ends to the ends of the door, said bars having notches, and a support for the basket having catches for engaging the notches to hold the door in open or closed position, yielding means normally pressing the bars toward the catches, said releasing means comprising a cross arm journaled transversely of the basket at the edges of the bars provided with the notches and having extensions for engaging the bars to release them from the catches, and means for oscillating the cross arm.

2. In combination with a weigh basket having a counterweighted discharging door and stops for limiting the opening movement of the door, of means normally operative for locking the door in open or closed position and manually operated means for releasing the said locking means in either position, said locking means comprising vertically movable bars pivoted at their lower ends to the ends of the door, said bars having notches, and a support for the basket having catches for engaging the notches to hold the door in open or closed position, and yielding means normally pressing the bars toward the catches.

3. In combination with a weigh basket having a counterweighted discharging door and stops for limiting the opening movement of the door, of means normally operative for locking the door in open or closed position and manually operated means for releasing the said locking means in either position.

4. In combination, a hopper having a counterweighted discharge door, means normally operative for locking the door in open or closed position, and manually operated means for releasing said locking means when in either position.

CLARENCE E. HILTON.

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."