W. E. HALE.

DRAGLINE CABLEWAY EXCAVATOR.

APPLICATION FILED APR. 25, 1921.

1,430,984.

Patented Oct. 3, 1922.

2 SHEETS—SHEET 1.

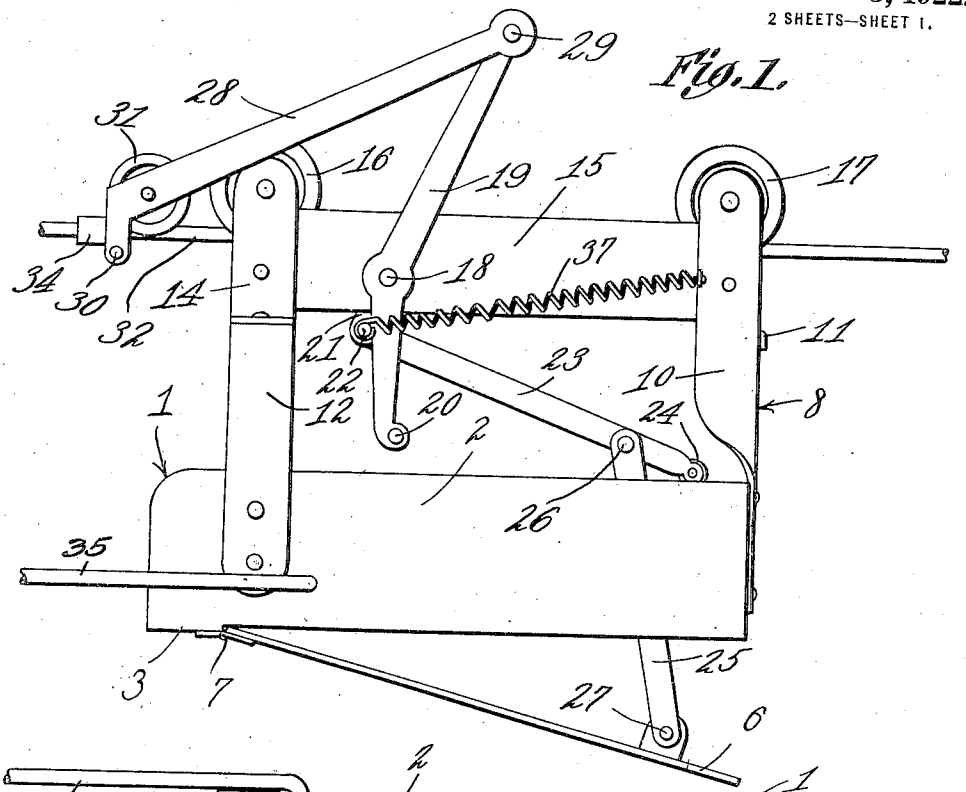


Fig. 1.

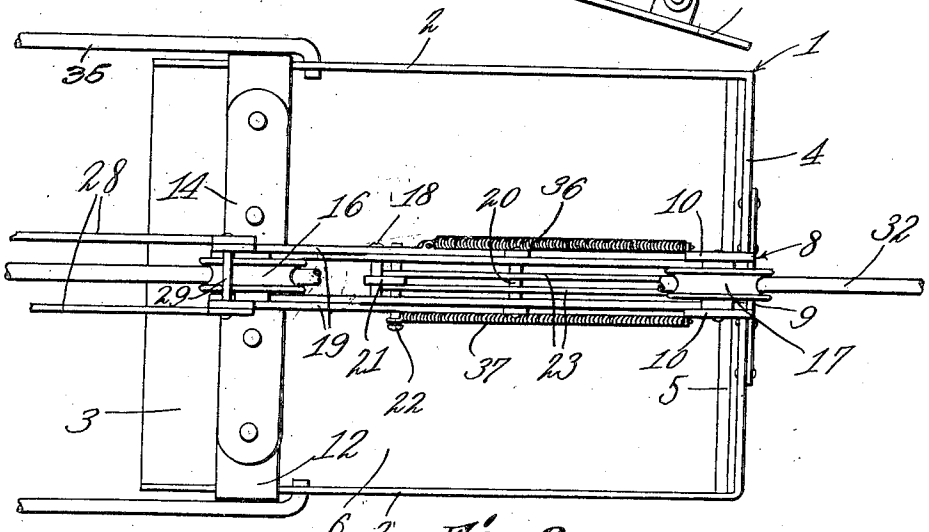


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

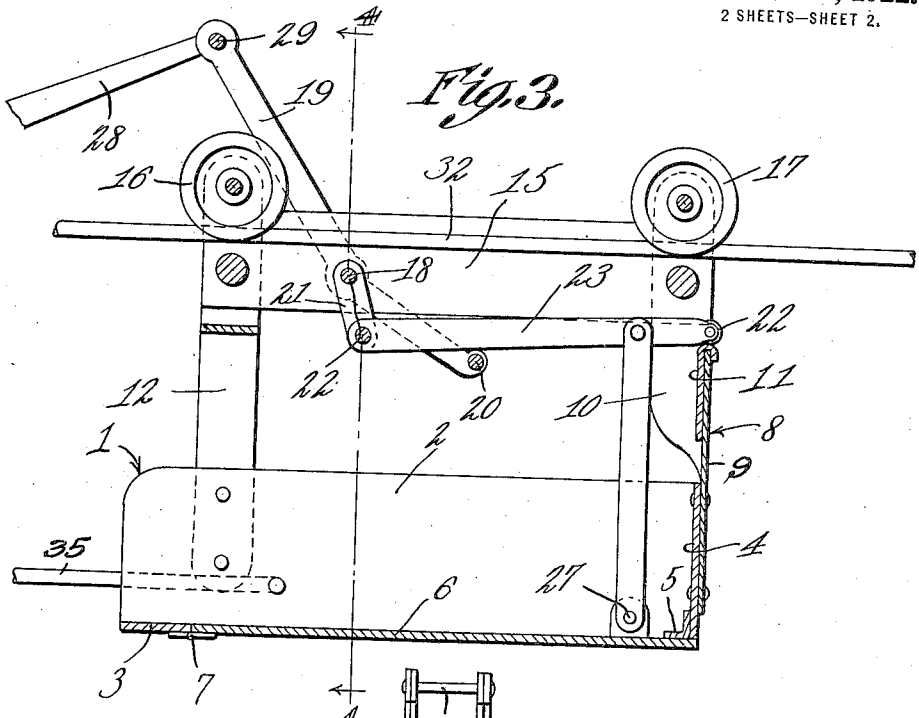
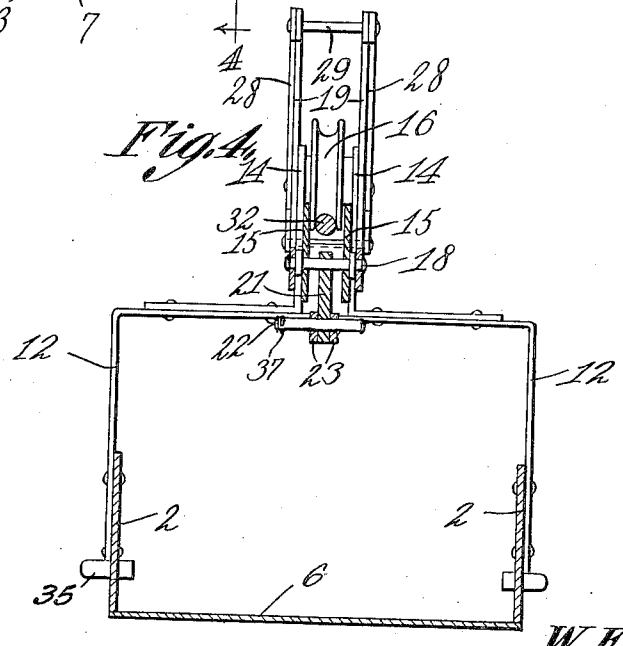


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM E. HALE, OF DETROIT, MICHIGAN.

DRAG-LINE CABLEWAY EXCAVATOR.

Application filed April 25, 1921. Serial No. 464,077.

To all whom it may concern:

Be it known that I, WILLIAM E. HALE, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Drag-Line Cableway Excavator, of which the following is a specification.

It is the object of this invention to provide novel means for controlling the downwardly swinging bottom of a dumping carrier.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that, within the scope of what is claimed, changes in the precise embodiment of the invention shown can be made without departing from the spirit of the invention.

In the drawings:—

Figure 1 shows in side elevation, a device constructed in accordance with the invention, the bottom being lowered; Figure 2 is a top plan; Figure 3 is a vertical section wherein parts appear in elevation, the bottom being closed; Figure 4 is a cross section on the line 4—4 of Figure 3.

The numeral 1 denotes, generally, a carrier comprising sides 2 connected by a bottom lip 3, the sides being united by an end wall 4 carrying a stop 5. The numeral 6 denotes a vertically swinging bottom, adapted to cooperate with the stop 5 when the bottom is in a closed position. The bottom 6 may be mounted in any desired way, for swinging movement. In the present instance, but not of necessity, the bottom 6 is hinged at 7 to the lip 3. The end wall 4 is supplied with a standard 8 which is trough-shaped in cross section, the standard including a back 9 and side walls 10. The upper edge of the back 9 of the standard 8 is shod with a wear plate or keeper 11. A bail 12 is attached to the sides 2 adjacent to the forward end of the carrier 1. Brackets 14 are mounted on the bail 12. Longitudinal plates 15 connect the brackets 14 with the side walls 10 of the standard 8. On the upper portions of the brackets 14, a wheel 16 is journaled, a wheel 17 being journaled on the upper ends of the side walls 10 of the standard 8.

A pivot element 18 is mounted in the plates 15, and on the pivot element 18 a two-part lever 19 is fulcrumed intermediate its ends. The constituent members of the lever 19 are united at their lower ends by a cross piece or pin 20. A hanger 21 is located between the plates 15 and is mounted to swing on the pivot element 18. The lower portion of the hanger 21 is united by a pivot element 22 with one end of a latch 23 provided with a roller 24 adapted to engage with the keeper 11. The cross piece 20 at the lower end of the lever 19 is located below the latch 23. The ends of the pivot element 22 lie in the path of the lever 19. The upper end of a link 25 is pivoted at 26 to the latch 23, the lower end of the link being pivoted at 27 to the bottom 6. The numeral 28 denotes a two-part arm, pivoted at 29 to the upper end of the lever 19. The members of the arm 28 are connected at their outer ends by a pin 30. A wheel 31 is located between the members of the arm 28 and is supported for rotation thereon. The wheels 31, 16 and 17 are adapted to traverse a track 32, which may be a cable, the track 32 having a stop 34. The pin 30 is located beneath the track 32 to hold the wheel 31 engaged with the track. A retractile spring 36 is connected at one end to the standard 8 and is connected at its other end to the lever 19 below the fulcrum 18 of the lever. A retractile spring 37 extends between the standard 8 and the latch 23, the spring 37 being connected to the pivot element 22 if desired.

In practical operation, the roller 24 at the end of the latch 23 cooperates with the keeper 11. The spring 37 swings the hanger 21 forwardly and, consequently the latch 23 will remain engaged with the keeper 11, the link 25 supporting the bottom 6 in closed position. When the carrier is advanced by any suitable means indicated at 35, the arm 28 encounters the stop 34, the lever 19 being tilted on its fulcrum 18. The lever 19 engages the pivot element 22 and retracts the latch 23 out of engagement with the keeper 11, whereupon the bottom 6 swings to an open position as shown in Figure 1 of the drawings. As soon as the carrier is moved sufficiently so that the arm 28 is not engaged with the stop 34 on the track 32, the spring 36 reacts and swings the lower

end of the lever 19 upwardly, the pin 20 engaging the latch 23 and swinging the latch upwardly. At the same time, the spring 37 draws the latch 23 endwise, and advances the latch, until the latch cooperates with the keeper 11, as shown in Figure 1. The bottom 6 in view of the foregoing, is raised automatically, and the latch 23 engages with the keeper 11 automatically, as soon as the arm 28 moves, along with the carrier out of engagement with the stop 34.

I claim:—

1. In a device of the class described, a carrier having a downwardly swinging bottom and provided with a keeper; a hanger mounted to swing on the carrier; a latch pivoted to the hanger and engaging the keeper; a link connecting the latch with the bottom; a lever fulcrumed on the carrier and constituting means for raising the latch; and means for raising the lever.

2. A device of the class described, constructed as set forth in claim 1, and further characterized by a track having a stop; and an arm slidable on the track into engagement with the stop, the arm being pivoted to the lever.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM E. HALE.

Witnesses:

ALBERT S. ROTH,

ESTHER A. FROST.