(No Model.)

T. L. MARVEL.

ELEVATING BUCKET.

No. 524,043. Patented Aug. 7, 1894.

Fig. 1.

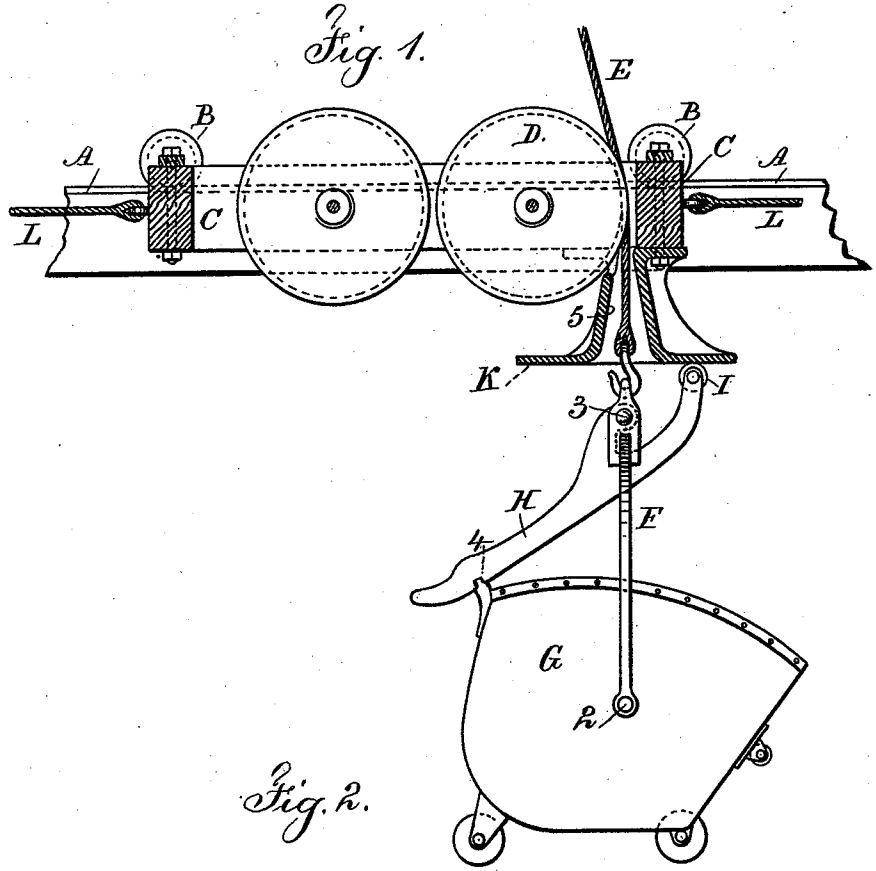
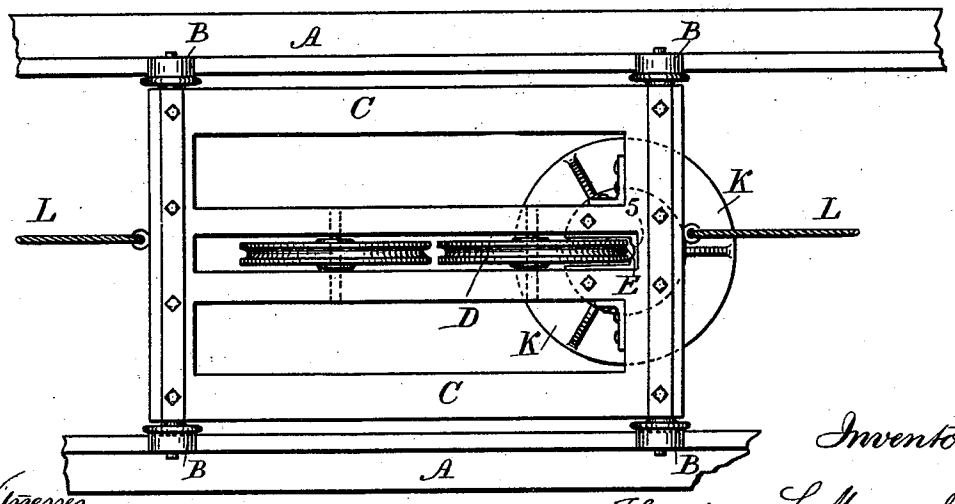


Fig. 2.



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UNITED STATES PATENT OFFICE.

THEODORE L. MARVEL, OF TAUNTON, MASSACHUSETTS.

ELEVATING-BUCKET.

SPECIFICATION forming part of Letters Patent No. 524,043, dated August 7, 1894.

Application filed September 7, 1893. Serial No. 484,977. (No model.)

To all whom it may concern:

Be it known that I, THEODORE L. MARVEL, a citizen of the United States, residing in Taunton, in the county of Bristol and State of Massachusetts, have invented an Improvement in Mechanism for Discharging Elevating-Buckets for Coal and other Materials, of which the following is a specification.

Heretofore it has been common to employ buckets pivoted upon a hoisting bail and held by a latch or lever so that when such latch or lever is disengaged the bucket will swing upon its pivots and automatically discharge, and where a two-fold fall or hoisting rope or chain has been made use of, the bucket can be raised so that its pivots stand in the same direction immediately before the latch is moved to allow the bucket to tip, but when a single hoisting rope or chain is made use of, the bucket is liable to revolve to a greater or less extent during the hoisting operation, and it is often advantageous to make use of a single rope or chain in hoisting the bucket, because greater rapidity of movement can usually be obtained. I employ a latch lever that is pivoted upon the bail near the eye thereof and extends above the eye, and also below the eye and forms a holding brace between the upper part of the bail and the bucket, and I provide a disengaging head that surrounds the hoisting rope or chain so that the upper end of the latch lever is acted upon to disengage the bucket and allow it to tip and discharge the contents.

In the drawings, Figure 1, is an elevation illustrating the present improvements, the track and truck being partially in section, and Fig. 2, is a plan view illustrating the truck and track when fitted with the present improvements.

The track A is usually made with two rails, upon which the wheels B of the truck C travel, and upon this truck C is a pulley D over which passes the hoisting rope E that descends to the bail F of the bucket G, there being pivots 2 upon the bucket for the eyes of the lower ends of the bail, and there is a latch lever H pivoted at 3, upon the bail and provided with a notch at 4, to engage a suitable projection upon the bucket G, or the parts may be inverted, the projection being upon the latch lever and the notch upon the bucket, and this latch lever extends beyond its pivot 3, and is preferably provided with a roller I.

The hoisting rope or chain E passes through the opening or trumpet shaped portion 5, of the disengaging head K and the surface of this disengaging head is at a suitable angle to the hoisting rope or chain E. I find it advantageous to make such surface perpendicular or at right angles to the hoisting rope or chain E, but such surface might be inclined or conical if desired, and this disengaging head is in such a position around the hoisting rope or chain that the roller I will move upon the surface of the head as the hoisting rope or chain E is drawn upon, so as to move the lever H and disengage the latch from the bucket and allow the bucket to swing upon its pivot and discharge its contents automatically. It is advantageous to provide the roller I as the friction is lessened, but this roller I might be dispensed with, the end of the latch lever coming into contact with the surface of the disengaging head.

It will now be apparent that the disengaging head extending all the way around the hoisting rope or chain will act against the latch lever to disconnect the same from the bucket automatically, regardless of the position in which the bucket may hang upon the hoisting rope or chain, and the discharge of the contents of the bucket is effected instantly, and it is only necessary to employ a hopper into which the coal or other material is received as the bucket is tipped, such hopper being sufficiently large to receive the material regardless of the direction in which the bucket may tip, but when coal or similar material is delivered in a pile or heap, it is usually immaterial which way the bucket may discharge its contents, and hence a hopper is not always necessary.

It will be manifest that the disengaging head might be a fixture and placed in any position where it was desired to discharge the bucket, and it might be employed with a truck running upon an incline, and it might also be employed where the rope or chain passed through a block or fall at or near the bucket, the disengaging head being of sufficient size, but the present improvement is especially

available where the truck C is upon a level or slightly inclined track, and where a rope or chain L passing around pulleys near the ends of the track is made use of for drawing the truck backward and forward, this arrangement being well known in hoisting apparatus, so that when the bucket has been raised sufficiently, the truck C is drawn along upon the track by the chain L to the place where the material is to be discharged from the bucket, the bucket moving with the truck, and the contents of the bucket are discharged at the proper place by simply drawing upon the hoisting rope or chain E sufficiently to bring the upper end of the latch lever H into contact with the disengaging head K, and after the contents of the bucket have been discharged, the truck is drawn back to its normal position and the bucket lowered, filled and again elevated as usual in hoisting apparatus. This disengaging head may be placed upon a boom, gaff or other convenient support and it will act in the aforesaid manner to disconnect the holding device and allow the bucket to tip.

If the disengaging head is suspended by a rope or chain and allowed to drop or descend or to be brought into contact with the latch lever by any suitable means the discharge of the bucket will be insured.

I have represented the latch lever H as pivoted between a folded strip of metal similar to a clevis, the upper portion of which forms the eye for the hoisting hook, and the bail F passes through this folded piece of metal over the lever and below the pivot thereof. This construction is simple and the parts are easily put together or repaired.

I claim as my invention—

1. The combination with the bucket, of a bail, to the lower ends of which the bucket is pivoted, a hoisting eye upon the bail, a latch lever pivoted upon the bail at the hoisting eye, and near its lower end engaging the edge of the bucket for holding the same, the other end of the lever extending beyond and above the pivot, and a disengaging head with which the upper end of the latch lever comes into contact for disengaging such lever and allowing the bucket to tip, substantially as set forth.

2. The combination with the hoisting bucket, of a bail, to the lower end of which the bucket is pivoted, a hoisting eye upon the middle portion of the bail, a latch lever passing between the parts of the hoisting eye and pivoted to the same and acting to hold the bucket, the upper end of such lever extending forward and above the bucket, a roller thereon and a disengaging head having an opening through which the hoisting rope passes and against which the roller of the latch lever is brought into contact to unlatch the bucket and allow the same to tip, substantially as set forth.

Signed by me this 6th day of September, 1893.

THEODORE L. MARVEL.

Witnesses:
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