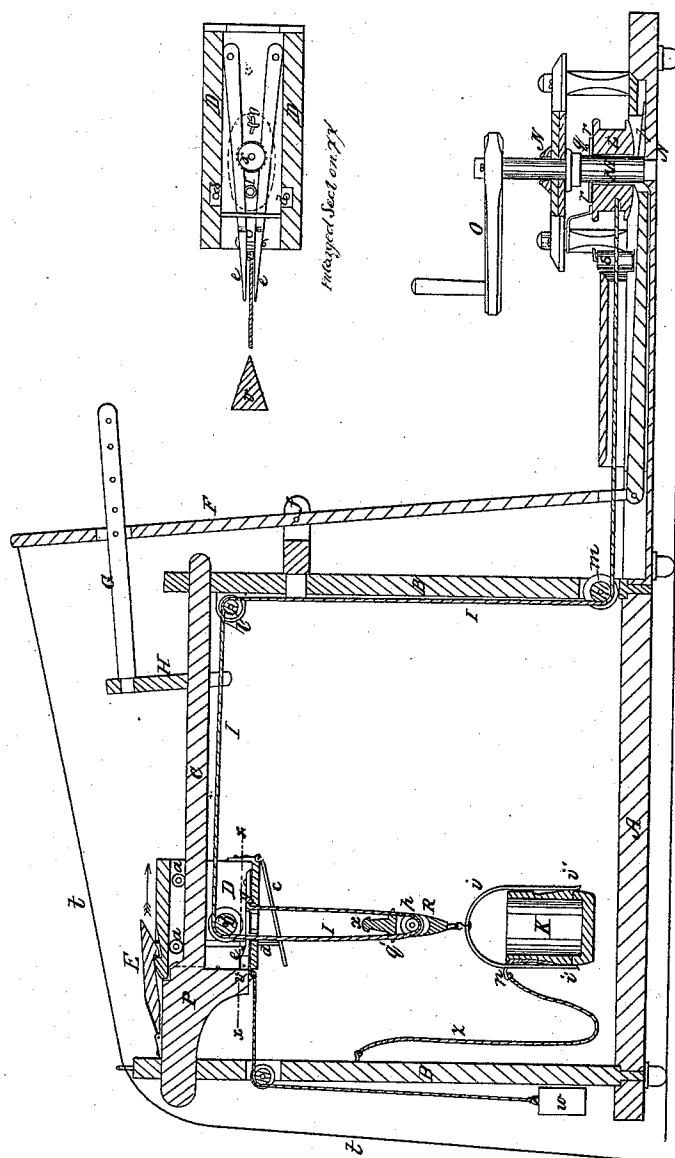


Shoemaker & Gearhart.

Elevator.

N^o 86,703.

Patented Feb. 9, 1869.



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ADAM SHOEMAKER AND JOHN R. GEARHART, OF MARION, PENNSYLVANIA.

Letters Patent No. 86,703, dated February 9, 1869.

ELEVATOR.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that we, ADAM SHOEMAKER and JOHN R. GEARHART, both of Marion, in Franklin county, and State of Pennsylvania, have invented an "Improved Elevator;" and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, through letters of reference marked thereon, and which represents a vertical longitudinal section of the apparatus embracing our improvements.

In hoisting and dumping-apparatus, the great desideratum is that they shall be automatic in all their movements; that is to say, the operating-power, whether it be hand, horse, steam, or any other, being continuously in motion, the bucket, fork, or other receptacle may remain at rest, in position to receive its load, until the elevator is thrown into gear with the operating-power; at the will of the attendant. This being done, the movements of the apparatus should be such as, at the proper elevation, to automatically release the carriage from its retainer, and on arriving at its destination, to simultaneously dump the load, and throw the elevator out of gear with its driving-power, and allow it to return to its original position for another load, and repetition of the same operation.

To accomplish this result is the object of our invention, which consists in a novel arrangement and combination of devices for releasing the carriage or traveller from its retainer; also, in the device for sustaining the weight of the load when elevated, and releasing it when in proper position to allow it to descend for another load; in the means of throwing the elevator out of gear with its operating-power; and in a novel device for dumping the load at its desired destination.

To enable others to make and use our apparatus, we will now describe its construction and operation.

Referring to the drawings—

A represents the foundation or bed-piece of the apparatus, on which are erected two standards B, with a horizontal timber, C, extending from one to the other at their upper ends, or this horizontal timber C may be sustained by the walls or frame-work of the building, so as to form a railway from the hoisting to the dumping-positions; for the car D to traverse.

The car D is sustained upon the timber C, by two friction-rollers *a*, and carries beneath the timber, a pulley, *b*, hinged lever *c*, rod or yoke *d*, and double spring-clamp *e*; the uses and operation of which will hereinafter appear.

On the upper side of the timber C, is hinged a catch, E, which hooks on to a similar catch on the upper side of the car D, to retain it in position whilst the load is being elevated.

F is a vertical lever, having its fulcrum on any suitable bearing, as at *f*, and is connected with any suitable shifting-device at its lower end, for throwing the appa-

ratus in, or out of gear with its driving or operating-power, and at its upper end is adjustably attached an arm, G, carrying a forked slide, H, which spans and slides on the timber C.

The elevating-rope or chain I is attached to the under side of the car D, as at *g*, passes downward and around a pulley, *h*, attached to the bail *i* of the bucket K, and up over the pulley *b*, thence horizontally beneath the timber C, around the pulley *l*, and down under the pulley *m*, to the drum L of the horse-power, where it is rigidly attached.

The bail *i* is pivoted to the bucket K, on its opposite sides, as shown at *i'*, near its bottom, and has attached to it a spring-catch, *n*, which, falling into a notch in the side of the bucket, secures the bail in a vertical position with relation thereto; and to the upper end of this spring-catch is attached a cord to be retained in the hand of the operator, or made fast at a fixed point, with a given length of cord, so as to release the bucket from its hold, on arriving at its dumping-position, and thus deposit its load, as will be more fully explained.

In the drawing is represented a horse-power as the means of operating the apparatus, and which consists of a vertical arbor, M, supported in bearings, N, and having attached to its upper end a draught-beam, O, and on the arbor is a loose drum, L, hung so that when out of gear, the arbor may revolve freely therein; but having a sliding motion up and down on said arbor, caused by the action of a wedge-shaped fork, *p*, spanning the arbor beneath the drum, so that by forcing inward said wedge, the drum is lifted until the stub *q* on its upper surface is brought in contact with a pin, *r*, passing horizontally through said arbor, and by which the drum is caused to rotate, and wind the rope I around it, said rope being guided by a vertical roller, S.

The operation will then be as follows:

The attendant being stationed near the bucket or other carrier, fills the same, and then, by means of the cord *t* pulling on the top of the lever F, forces the wedge *p* under the drum L, which then being rotated, winds the rope I thereon, and elevates the load until the collar *g'*, above the pulley *h*, comes in contact with the hinged lever *c*, and lifts it, raising with it the rod or stirrup *d*, which strikes the under side of the hook E, and pushes it out of gear. The car D then travels along the timber C, in direction of the arrow, when the jaws *e* are immediately released from their opening-wedge *e*, and close beneath the head *z*, over the pulley *h*, and thus prevent it from lowering the car. Then by the continued winding of the rope I on the drum L, it travels on the timber until it comes in contact with the sliding fork H, pushing it along until, through the lever F, the wedge *p* is withdrawn, and the drum ceases to rotate, at which time the line *z* becoming taut, or being pulled by the operator, withdraws the spring-catch *n* from the side of the bucket, which immediately capsizes, dumping

the load. The bucket then being lightened, the weight *w*, attached to the car, is sufficient to overcome the friction, and draw it back to its normal position, when, in coming in contact with the block *P* at the end of the timber *C*, the hook *E* is lifted, and at the same time the jaws *e* are opened by the dividing-wedge *v*, which releases the head *z*, and allows the bucket to run down, the hinged lever *c* drops, and the hook *E* falls into the notch in the upper side of the car *D*, and retains it in position for a repetition of the same operation.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination of the hinged lever *c* and stirrup *d* with the car *D* and hook *E*, operated by the flange or projection *g* on the block *R*, all constructed and arranged substantially as shown and described.

2. The combination of the spring-jaws *e*, head *z*, and dividing-wedge *v*, constructed, arranged, and operating substantially as shown and described.

3. The arrangement and combination of the lever *F*, and its adjustable sliding head, operating automatically by the motion or travel of the car *D*, to throw the apparatus out of gear with its driving-power, as described.

4. The arrangement and combination of the spring-catch *n*, with the bail *i* and bucket *K*, substantially as shown and described.

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