G. STANCLIFF.

Hoisting and Conveying Apparatus.

No. 138,950. Patented May 13, 1873.

Fig. 1.

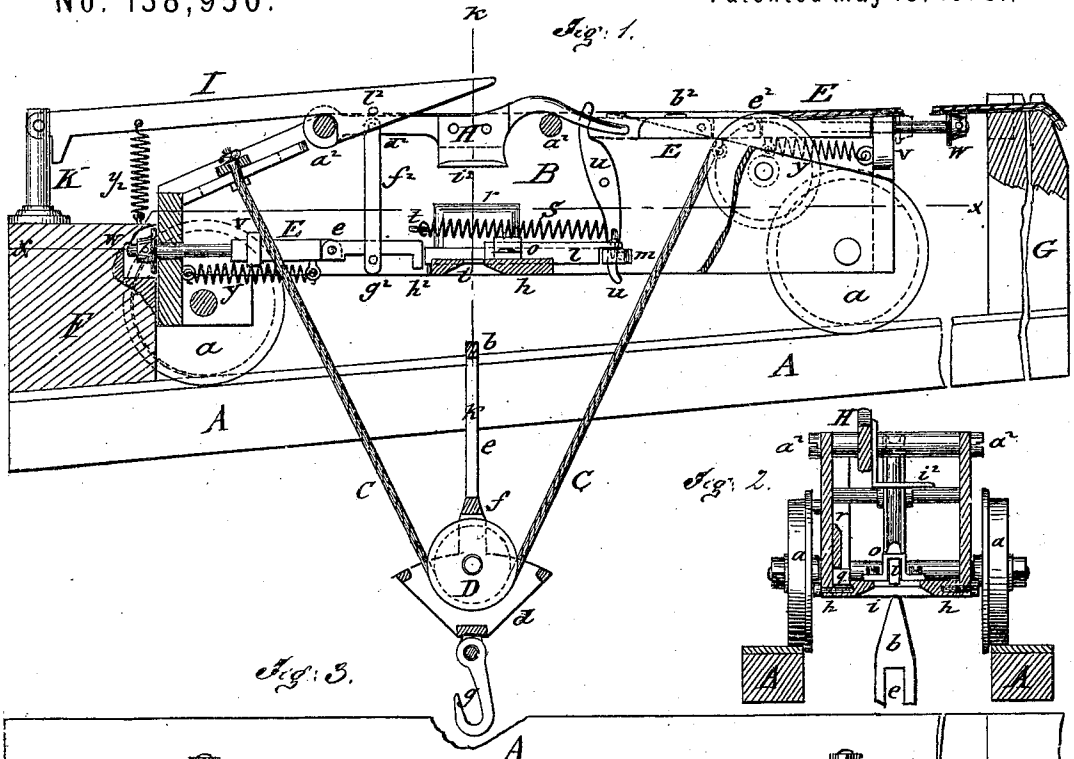


Fig. 2.

Fig. 3.

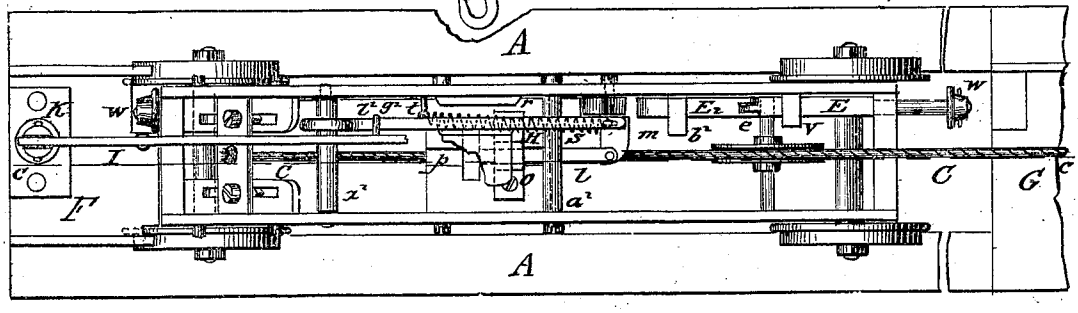
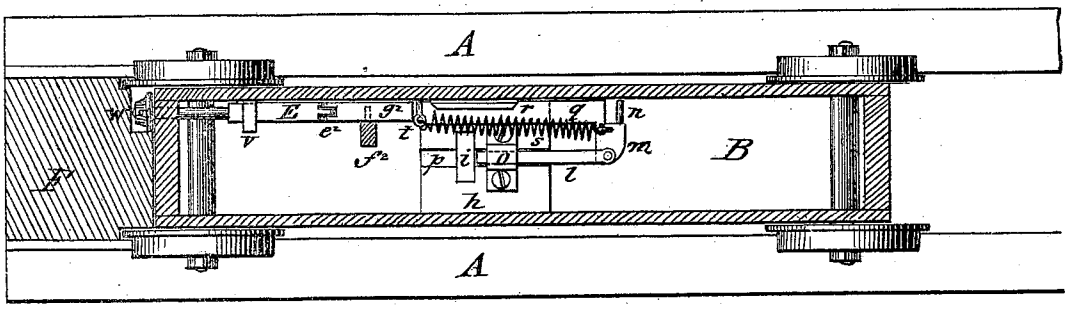


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE STANCLIFF, OF NEW YORK, N. Y.

IMPROVEMENT IN HOISTING AND CONVEYING APPARATUS.

Specification forming part of Letters Patent No. **138,950**, dated May 13, 1873; application filed February 8, 1873.

To all whom it may concern:

Be it known that I, GEORGE STANCLIFF, of the city, county, and State of New York, have invented a new and Improved Hoisting and Conveying Apparatus, of which the following is a specification:

Figure 1 is a longitudinal vertical section of my improved hoisting apparatus, showing track, truck, and connection with the weight to be hoisted, on the line *c c*, Fig. 3. Fig. 2 is a vertical transverse section of the truck on the line *k k*, Fig. 1. Fig. 3 is a plan or top view of the same with parts broken off; and Fig. 4 is a longitudinal horizontal section on the line *x x*, Fig. 1, showing in detail the lock and spring arrangement.

Similar letters of reference indicate corresponding parts.

The object of my invention is to hoist, convey, and lower heavy goods in an easy and expeditious manner, for the purpose of economizing time and labor. My invention consists of a truck, hoisting and carrying the weight and moving it back and forth on an inclined track by means of a windlass, wire-rope, and pulley arrangement. It is intended as an improvement on a similar invention patented by Joseph Green, August 1, 1871.

In the drawing, A represents the inclined track, which supports the truck B. The truck is of suitable shape, and rests horizontally on the axles of four wheels, *a*, which are flanged toward the inner side of the track. C is the rope or chain by means of which the entire apparatus is operated and conveyed. It has one end firmly secured to one side of the truck, passes then under a pulley and tackle-block, D, to a pulley supported centrally at the other side of the truck, and over the same along the track, and guide at end thereof, to the windlass, where it is wound or unwound to suit the application desired. An arrow, *b*, with a vertical slot, *e*, is connected, by vertical extensions *f*, to the casing *d* of the tackle-block D, which also has pivoted to downward-projecting ears the hook *g*, to which is attached the bucket or weight to be transferred. The lower side of the truck B is connected by a transverse plate, *h*, into which an inverted funnel-shaped opening, ending in a transverse horizontal slot, *i*, longitudinal recesses *p*, and casing *o*, guide a movable bolt, *l*, pivoted to the connecting-lug *m* of the parallel guide-bolt *q*, which glides freely along the side of truck B, and is carried back and forth between a recess of plate *h* and guide projection *r*. A spring, *s*, applied to the lug *m* and to pin *t* of the side of the truck above the bolt, tends to carry said bolts over the horizontal plate *h* and slot *i*, and to keep them in position thereon. A pin, *n*, projects from lug *m*, forming with bolt *q* an open recess, into which fits the lower end of a lever, *u*, pivoted also to the side of the truck, and following the movements of the bolts *q* and pin *n*. To the same side of the truck are further applied, sliding in suitable guide-casings at the front and rear ends thereof, two horizontal buffer-rods, E, supplied at their ends with buffers *w*, and connected to the front and rear bolsters of the truck by spiral springs *y y*. The front buffer-rod E acts on the upper part of the pivoted lever *u*, and thereby on bolts *q* and *l*, the rear buffer-rod directly on bolt *q*, withdrawing bolt *l* from slot *i* as soon as the ends of the truck strike the elevation G of the track at its end, or the elevated projection F at the starting point. Both buffer-rods E are made of two parts, pivoted at e^2 in such a manner that only an upward movement of the arms is obtained. A lever, H, is pivoted to a transverse connecting-bolt, a^2, of the truck, resting, with its tongue-like end, on a second transverse bolt, a^2. This tongue is bent to pass under a projecting lug, b^2, of the movable arm of front buffer-rod E. A weighted vertical arm, f^2, is pivoted to lever H at d^2, and connects with the movable arm of the rear buffer-rod E by means of a pin, g^2, passing under it, which is prevented from slipping off the arm by the downward projection h^2 of the same. A horizontal-projecting plate, i^2, is further applied to lever H. A lever, I, pivoted to a vertical support, K, of track elevation F, and connected by spring y^2 with it, embraces, with its spear-like head, truck-bolt a^2, holding thereby truck B firmly in its position when arrived at this end of the track.

When it is desired to hoist the bucket or other weight attached to hook *g* of tackle-case D, the windlass is brought into opera-

tion, pulling the rope C, and elevating the arrow *b* till it passes through funnel and slot *i* of plate *h* and strikes the projecting plate i^2 of the lever H, which acts on a pin, l^2, of lever I, lifting the same off bolt a^2, and releasing the truck from its rigid connection with elevation F. The weighted arm f^2 of lever H lifts at the same time the movable arm of rear buffer-rod E by means of pin g^2, which causes the bolts *q* and *l* to slide on plate *h* by the action of spring S, and bolt *l* to pass through the vertical slot *e* of the arrow *b*, locking thereby the arrow with its suspended weight to plate *h*, and consequently to truck B. The instantaneous action of lever H both on lever I and arrow *b* produces an immediate forward movement of truck B, and its weight following the rope C wound on the windlass. On arriving at the end of the track the buffer *w* strikes the elevation G; the front buffer-rod E slides back and strikes the lever *u*, withdrawing thereby the bolt *l* by means of pin *n* and lug *m*, and allowing the weight to be lowered and detached. The lug b^2 of the movable arm of the buffer-rod E passes over the tongue end of the lever H, so that on hoisting the empty bucket or hook *g* (the arrow passing through plate *h* and striking plate i^2 of lever H, as before,) lug b^2 and the movable arm E are lifted, releasing the lever *u* and locking bolt *l* in the arrow. The truck remains in position at the elevation G by the stress of the rope. As soon as the rope is unwound the truck returns on the inclined track by its own weight, resuming its old position, and buffer-rod E returns to its former place by the action of spring *y*.

It is obvious that, by the alternate action of the buffer-rods and springs, and corresponding locking and unlocking of the bolts *l*, goods may be hoisted and lowered at either end, allowing the transportation of weights either way, thereby extending greatly the application of this apparatus, as it may be used for loading and unloading goods into cars, vessels, or other means of conveyance.

Should it be desirable to use the apparatus only for the purpose of hoisting and conveying from one place to another, the front buffer-rod E, with its appendages, may be disconnected, with the plate to which the same is applied, from truck B, and lever *u* be unscrewed and taken off. Thereby the apparatus operates in its simplest form at one end of the track, merely depositing the load at the other, which may be specially useful in conveying coal in collieries, &c.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the slotted arrow *b*, slotted funnel-plate *h i*, having guiding-recesses for bolts *l* and *q*, and having lug *m*, pin *n*, and spring S, with pivoted lever H, projecting plate i^2, weighted arm f^2, and pin g^2, all constructed and arranged as and for the purpose described.

2. The sliding buffer-rods E, with pivoted arms—one with lug b^2, the other with projection h^2—and springs *y*, in connection with tongue-lever H, arm f^2, and pin g^2; and lever *u*, acting on bolts *q* and *l*, locking and unlocking the same at the points specified, as described.

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