J. B. DOW.

ELEVATING AND CARRYING MACHINE.

No. 184,848. Patented Nov. 28, 1876.

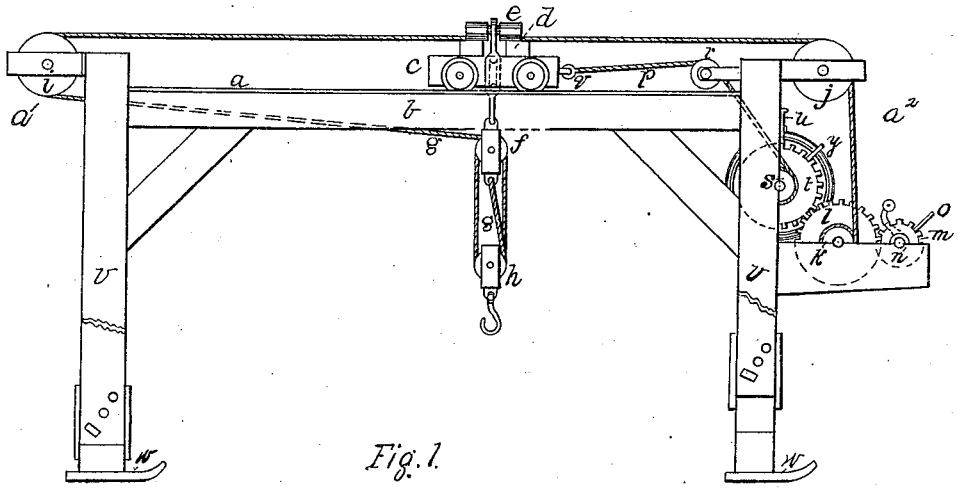

Fig. 1.

Witnesses:
John R. Mason
Wm. H. Simmons M.D.

Inventor
Josiah B. Dow
Per Chas. Franklin Geary Atty.

UNITED STATES PATENT OFFICE

JOSIAH B. DOW, OF GREENVILLE, MAINE, ASSIGNOR TO HIMSELF AND JOSIAH W. GREEN.

IMPROVEMENT IN ELEVATING AND CARRYING MACHINES.

Specification forming part of Letters Patent No. **184,848**, dated November 28, 1876; application filed October 5, 1876.

To all whom it may concern:

Be it known that I, JOSIAH B. DOW, of Greenville, in the county of Piscataquis and State of Maine, have invented certain new and useful Improvements in Elevating and Carrying Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which is shown a side elevation.

Same letters show like parts.

My invention is designed for raising and carrying merchandise, stone, or heavy weights of any description, and is applicable to various purposes, such as loading and unloading freight, handling stone in quarries, and for building purposes, and the like. It will be readily understood by reference to the accompanying drawings, in which—

a shows a track, elevated upon a suitable support, *b*. Upon this track runs a carriage, *c*, supporting a transverse track, *d*, upon which is placed a truck or roller, *e*, supporting a block, *f*. To the lower end of this block is attached a cord or chain, *g*, passing through a second block, *h*, as in the ordinary tackle and fall. Returning as usual, the rope passes through block *f* to the extremity a^1 of the track, and around a pulley, *i*, thence to the opposite end a^2, over a pulley, *j*, to a drum, *k*, upon which it is wound. This drum may be revolved by a gear, *l*, attached thereto, into which meshes a gear, *m*, upon a shaft, *n*, revolved by a crank, and provided with a cam-bearing, *o*, by which it may be thrown in or out of gear with the drum. These parts constitute the hoisting devices. The carriage *c* being at the end a^2 of the track, the article to be raised is attached to the block *h*, and the gears *l m* being thrown into engagement, the rope *g* is wound up on the drum *k*, raising the weight and suspending it to the carriage.

From the arrangement of the blocks and rope, the tendency of the suspended weight is to fall, and in so doing to move the carriage toward the end a^1 of the track. A rope, *p*, is, therefore, attached to the carriage at *q* to prevent this. This rope passes over a pulley, *r*, to a drum, *s*, at the end a^2 of the track, which drum is locked by a key, *u*, while the hoisting is progressing, which holds the carriage securely. It is further provided with a gear, *t*, and a cam-bearing, *y*, for throwing it into connection with the gear *l* of the drum *k*. When in engagement the drums of course revolve in opposite directions, so that the strain of the weight upon the rope *g*, tending to unwind said rope from the drum, and at the same time to move the carriage forward, is counteracted by the strain of the carriage upon the rope *p*, tending to unwind it from the drum *s*, since in such case both ropes *g* and *p* would cause the drums to revolve in the same direction, which is prevented by the connecting-gears. Thus it will be seen that, by means of the gears and ropes, the weight is effectually held in suspension without the exertion of external force, enabling the carriage to be stopped at any point on the track, or to be moved by merely overcoming the friction of the parts. The weight having been raised, as described, the drum *s* is unlocked, and its gear thrown into connection with the gear *m*. The revolution of the crank is continued in the same direction as for raising the weight; but the effect now is to move the carriage toward the end a^1, the retaining-rope *p* unwinding from its drum as it progresses, and the rope *g* winding upon its drum. The weight having reached its destination, the gears *l* and *t* are disengaged, and the weight allowed to descend by reversing the motion of the drum *k*, or by throwing the gear *m* out of connection, and allowing the weight to descend "by the run." To return the carriage to the end a^2 of the track, the gears *l* and *t* are again engaged, and the reverse motion of the crank continued, running the carriage back by the winding of the rope *p* upon its drum, and the unwinding of the rope *g*.

The purpose of the transverse track is to permit the weight to be moved sidewise when necessary, and this may be assisted by proper pulleys and ropes.

When the supporting-frame *b* is intended to be portable for use on rough ground, the legs

u u may be made adjustable, to adapt themselves to inequalities of surface, and may also be provided with shoes or trucks *w w*.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with the track *a*, carriage *c*, tackle and fall *f h g*, and drum *k*, the gears *l* and *t*, drum *s*, and stay-rope *p*, said drums revolving in opposite directions, and operating to sustain the weight and balance the carriage, substantially as set forth.

2. In combination with the drum *s*, gear *t*, and retaining-rope *p*, the clutch *y* and key *u*, whereby said gear may be thrown out of connection with the gear *l*, and the retaining-rope kept from unwinding during the hoisting of the weight, substantially as herein set forth.

3. In combination with the track *a* and carriage *c*, the transverse track *d* and roller *e*, supporting the weight, as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 2d day of October, 1876.

JOSIAH B. DOW.

Witnesses:

ALPHEUS W. DAVISON,

LINDLEY H. FOLSOM.