R. MARSHALL.
Elevator-Brake.

No. 207,291. **Patented Aug. 20, 1878.**

Fig. 1.

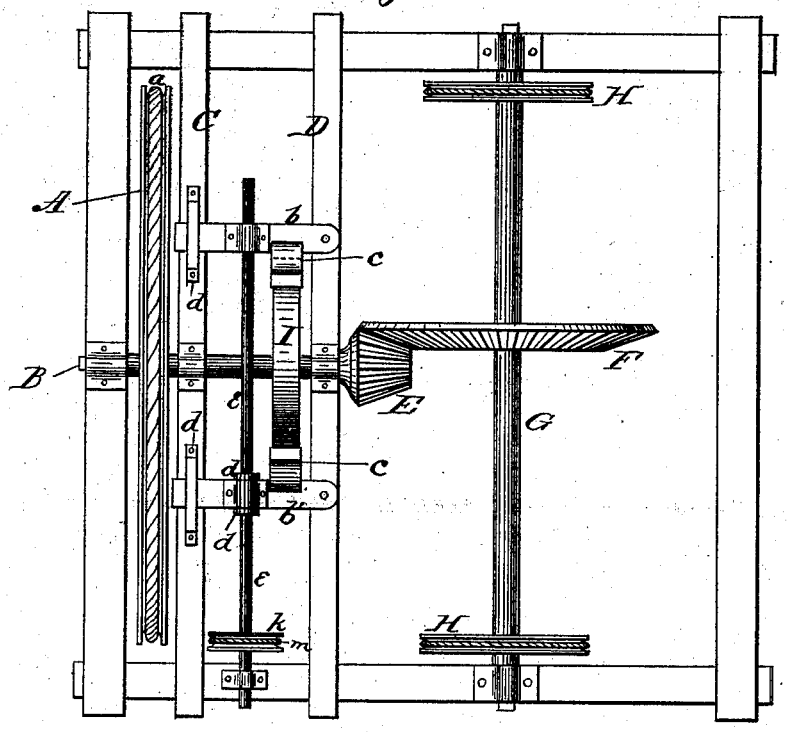
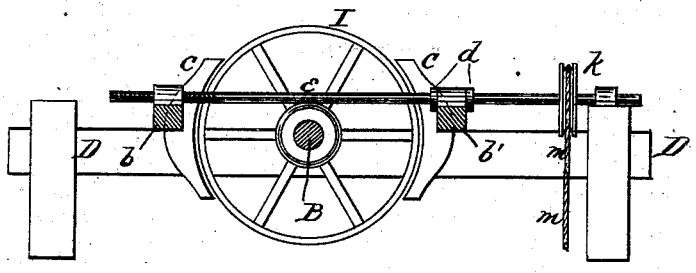


Fig. 2.



Witnesses.
F. A. Pollock
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UNITED STATES PATENT OFFICE.

ROBERT MARSHALL, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN ELEVATOR-BRAKES.

Specification forming part of Letters Patent No. **207,291**, dated August 20, 1878; application filed June 26, 1878.

To all whom it may concern:

Be it known that I, ROBERT MARSHALL, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Brakes for Hand-Power Elevators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a plan of the working parts of an elevator with my improvement. Fig. 2 is a sectional elevation of same.

My improvements relate to the mechanism for stopping or slowing up the platform of a hand-power elevator; and consist in applying to the shaft of the hand-power pulley a separate friction-pulley, against whose face operate one or two brake-shoes attached to pivoted levers, worked to and fro by a shaft threaded into the lever, and collared to the other or to the timbers, and controlled by a pulley operated by hand-ropes, all as hereinafter described and claimed. I illustrate it as applied to an ordinary form of hand-power elevator.

A is a large grooved pulley, and on it is the operating-rope *a*, extending down the hatchway or to one side thereof. Shaft B of wheel A is provided with the beveled pinion E. This meshes with a large gear, F, on a shaft, G, as shown. On shaft G one, two, or more pulleys, H, carry the elevating rope or ropes, one end of which is attached to the platform and the other to a suitable counterbalance. All these are old, and their operation well known; but in practice it is found necessary to have means of readily stopping or slowing up in raising or lowering, and this is the object of my improvement.

I key on shaft B of pulley A an independent smooth pulley, I, between pulley A and pinion E, where the shaft is steadiest. On cross-piece or timber D I pivot two levers, *b b'*—one on each side of the pulley I—and to these I attach brake-shoes *c*, as shown. The levers *b* extend over into suitable cleats or keepers *d* on cross-piece C. Crossing shaft B at right angles is a shaft, *e*, threaded at one end, and fitting a screw-threaded bearing in lever *b*. It passes through a bearing-cap on lever *b'* also, and is fitted, on each side thereof, with fixed collars *d d*. The other end passes first through a small grooved pulley, *k*, and thence to a suitable bearing in the timbers. On turning shaft *e* the two levers *b b'* are either drawn inwardly or separated, in the one case pressing shoes *c* against both faces of wheel I, and stopping or slowing the motion of shaft B and the elevator-platform, and in the other case releasing the shoes, and permitting wheel I and shaft B to turn freely.

When a brake is applied to the pulley A on its periphery, as is usually done, the speed is so great that it causes great friction, stops the motion with a jolt, besides causing unnecessary wear on the parts; but I use a brake-wheel of smaller size independently of the power-wheel, and by the application of the levers and screw-shaft get a surplus of power in a small motion, thereby effecting ease and perfection of action.

When the brake is applied on both faces of the wheel no strain is given it, and it will bear more work and act more smoothly.

A pulley, *k*, and hand-ropes *m* form the means of operating from any point in the hatchway. By passing rope *m* one or more turns on wheel *k*, and fastening its ends thereto, only a certain number of turns can be given the pulley, and hence no danger of breaking the parts arises.

For light-weight elevators, the lever *b'* might be dispensed with, and the shaft *e* then collared instead on the timbers, when the action would be similar.

I claim as my invention—

The combination of main pulley A, shaft B, and brake-pulley I with the shoes *c*, pivoted levers *b b'*, shaft *e*, wheel *k*, and rope *m*, said shaft *e* being threaded into lever *b* and connected with lever *b'* by collars *d d*, substantially as described, whereby the rotation of the shaft *e* gives a direct pull on levers *b b'*.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of June, 1878.

ROBERT MARSHALL.

Witnesses:

THOS. J. MCTIGHE,

THOS. CONNOLLY.