B. T. BABBITT.

ELEVATOR.

No. 170,327. Patented Nov. 23, 1875

Fig. 1.

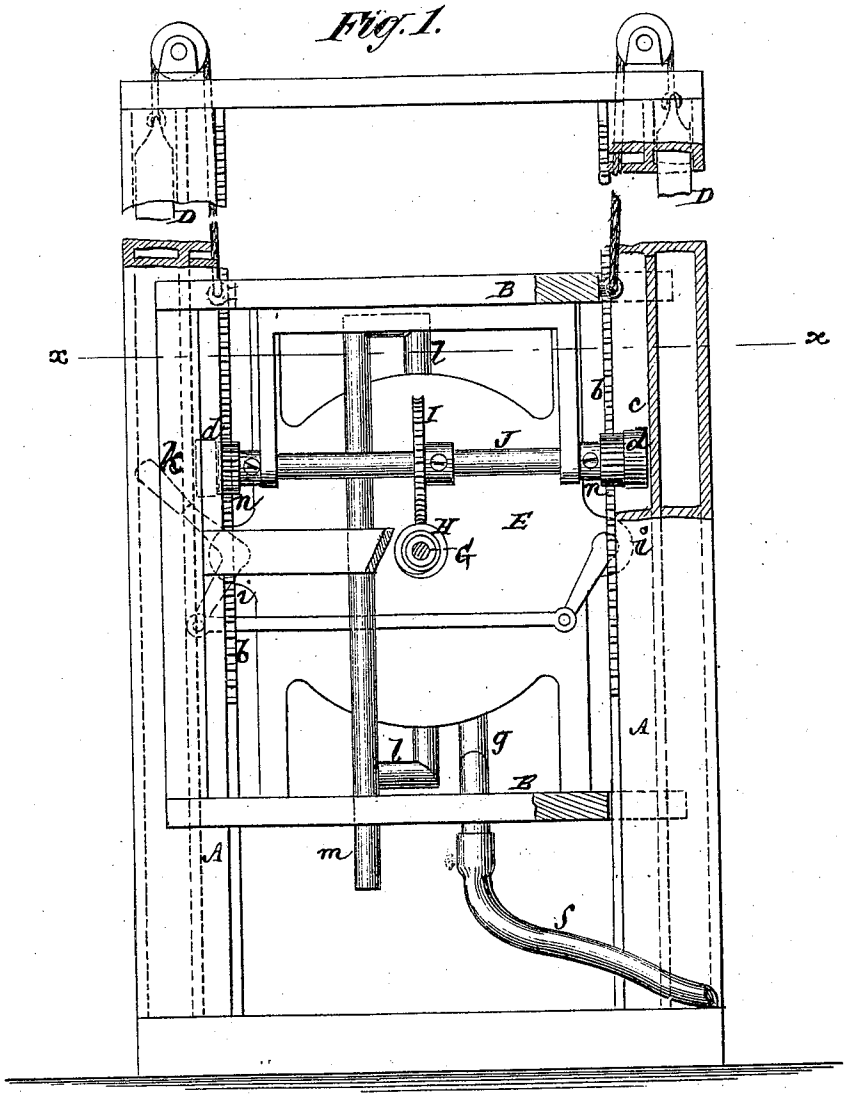
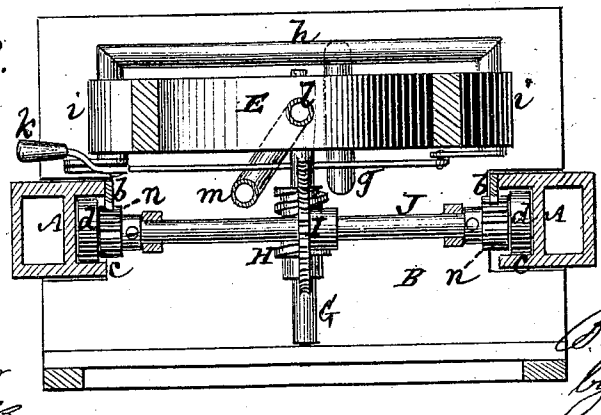


Fig. 2.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN ELEVATORS.

Specification forming part of Letters Patent No. **170,327**, dated November 23, 1875; application filed October 6, 1875.

To all whom it may concern:

Be it known that I, BENJAMIN T. BABBITT, of New York, in the county and State of New York, have invented certain new and useful Improvements in Hoisting Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention relates to that class of hoisting apparatus known as elevators.

The invention consists in a combination, with the hoisting car or platform, of a rotary engine, a hoisting-shaft operated thereby, and certain mechanism for actuating said shaft, and for applying such motion to the raising and lowering of the car or platform by means of stationary racks in the hoistway, said engine, hoisting-shaft, and operating mechanism all being carried by the car or platform, whereby a simple and direct application of the lifting-power from the car or platform as a base, subject to immediate control by the operator in charge of the car, is obtained.

The invention also consists in a combination of guide-rollers on the hoisting-shaft, carried by the car or platform, with fixed guideways in the hoistway, for directing the car or platform, and for steadying or easing its run, as likewise the action of the hoisting mechanism.

Figure 1 is a partly broken front view or elevation of a hoisting apparatus having my invention applied, and Fig. 2 a horizontal section thereof on the line *x x*.

A A are fixed uprights on opposite sides of the hoistway, and B the traveling car or platform. Each of these uprights A is furnished with an upright rack, *b*, with which the hoisting mechanism gears to effect the raising and lowering of the platform. Said uprights are also provided with upright guideways *c* for guide-rollers *d*, connected with the car or platform, as hereinafter described, to work in. D D are counter-balances for balancing the weight of the car and its operating mechanism.

Mounted on or carried by the car or platform B is a rotary engine, E, of any suitable construction, and to which steam may be supplied by a flexible tube or hose, *f*, and a pipe, *g*, from which a cross-pipe, *h*, leads to valve-boxes *i* on opposite sides of the engine, such valve-boxes containing valves for starting or stopping and reversing the motion of the engine. These valves, which are connected, may be operated through a handle, *k*, by the operator on the car or platform. The exhaust steam from the engine may be passed off from either above or below, according to the direction in which the engine runs, by means of branches *l l*, connecting with a general exhaust-pipe, *m*, that may have a flexible tube or hose attached to it. G is the driving-shaft of the engine. On this shaft is a screw, H, which communicates motion to a worm-wheel, I, on a cross hoisting-shaft, J. Said hoisting-shaft, which is also carried by the car or platform B, is fitted near either of its ends with pinions *n n*, which gear with the upright racks *b b* in the hoistway, and whereby the engine is made to raise or lower the car or platform, as required. This forms a simple and direct application of the lifting-power from the car or platform as a base, subject to quick and positive control by the operator on the car.

The guide-rollers *d d*, which work up and down within the guideways *c c* of the hoistway, are arranged on the ends of the hoisting-shaft J, and not only serve to guide and steady the car, but also to steady and ease the run of the pinions *n n* within the racks *b b*.

I claim—

1. The combination, with the car or platform B, of the rotary engine E, the screw H on the engine-shaft G, the worm-wheel I on the hoisting-shaft J, and the pinions *n n*, all carried by said car or platform, for operation in connection with the racks *b b* of the hoistway, substantially as specified.

2. The guide-rollers *d d*, which operate in the guideways *c c* of the hoistway, arranged on the hoisting-shaft J, which is carried by the car or platform, whereby not only the car is guided and steadied in its course, but the hoisting-shaft also is steadied and directed in its up-and-down motion with the car, essentially as shown and described.

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