

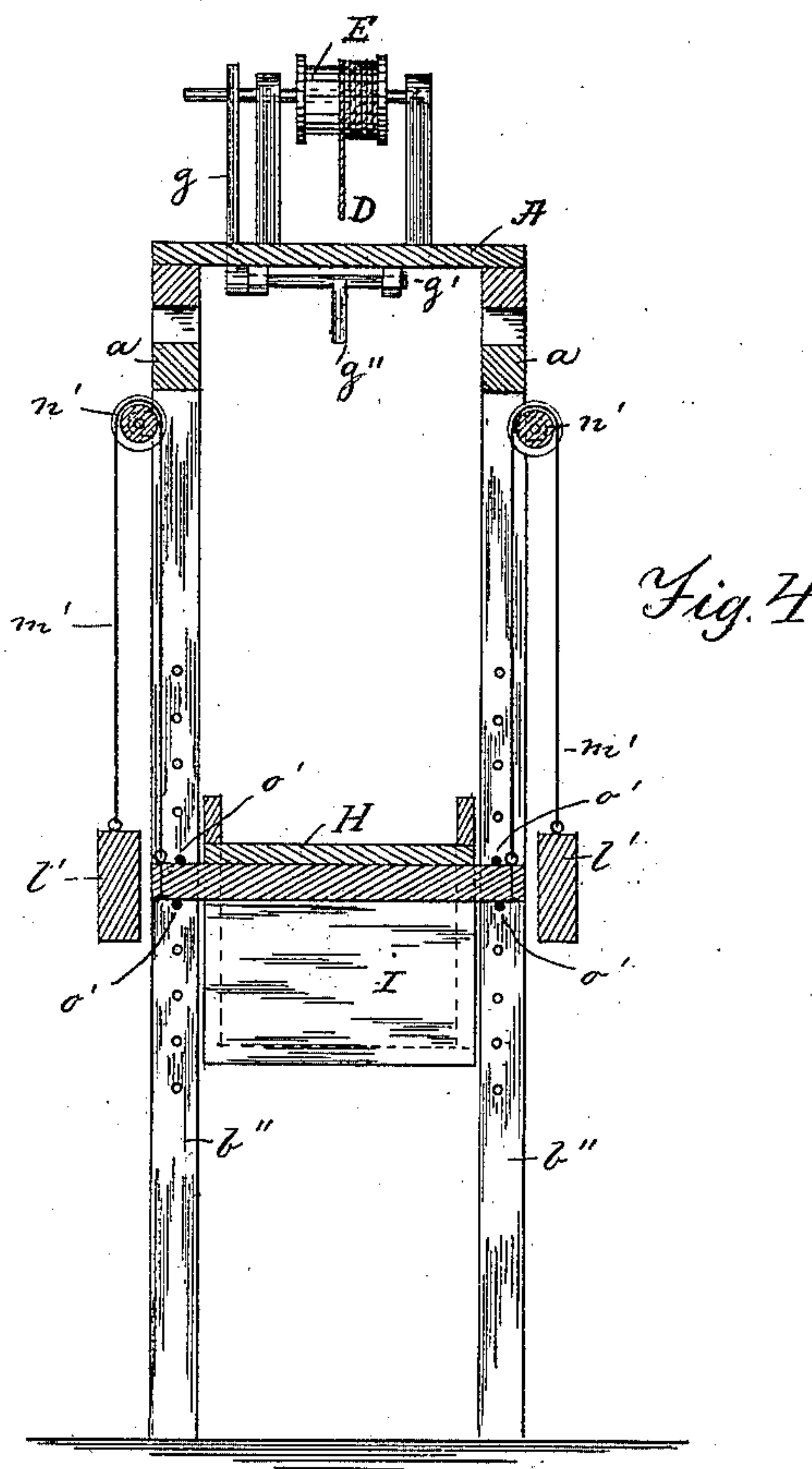
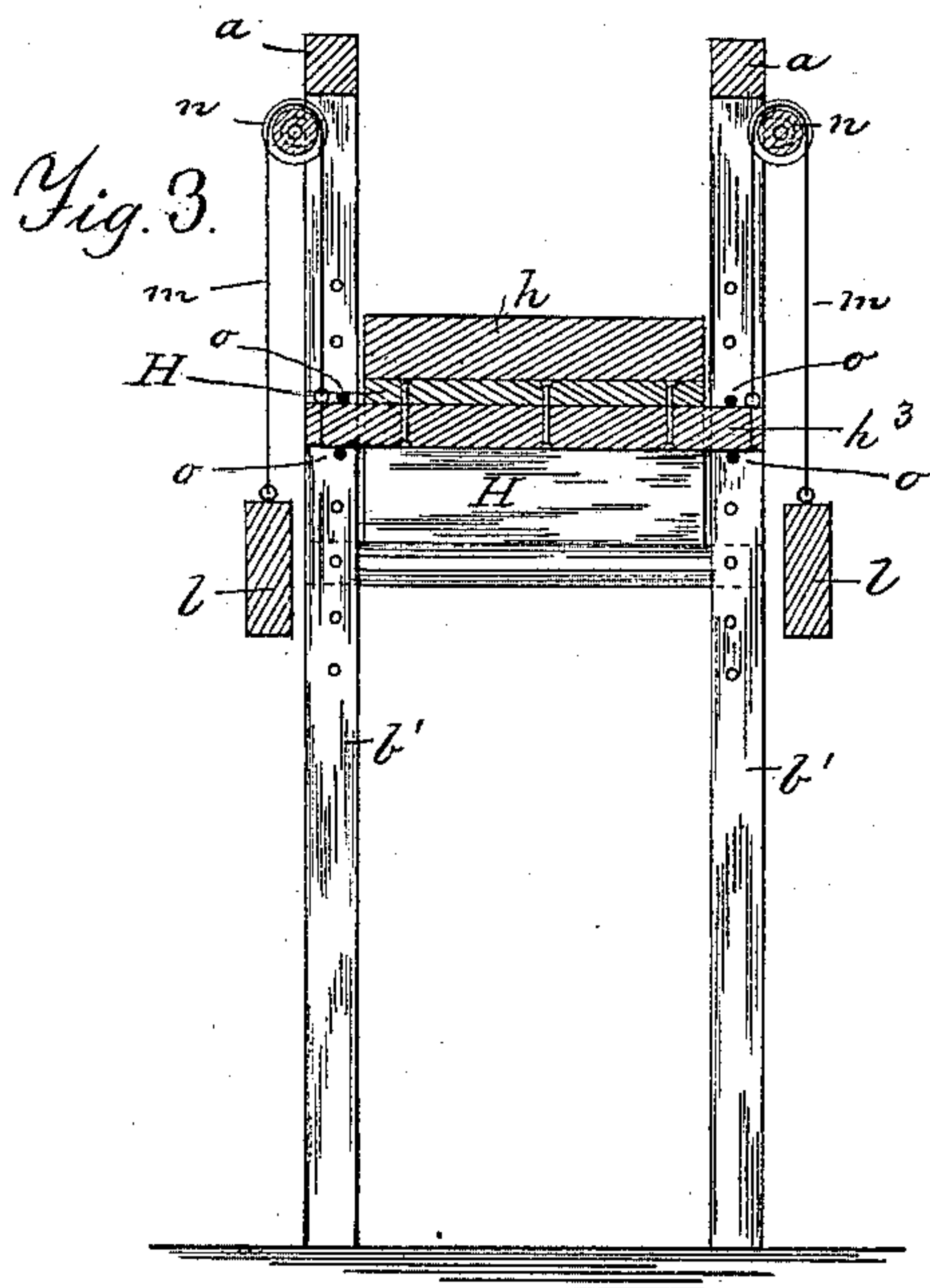
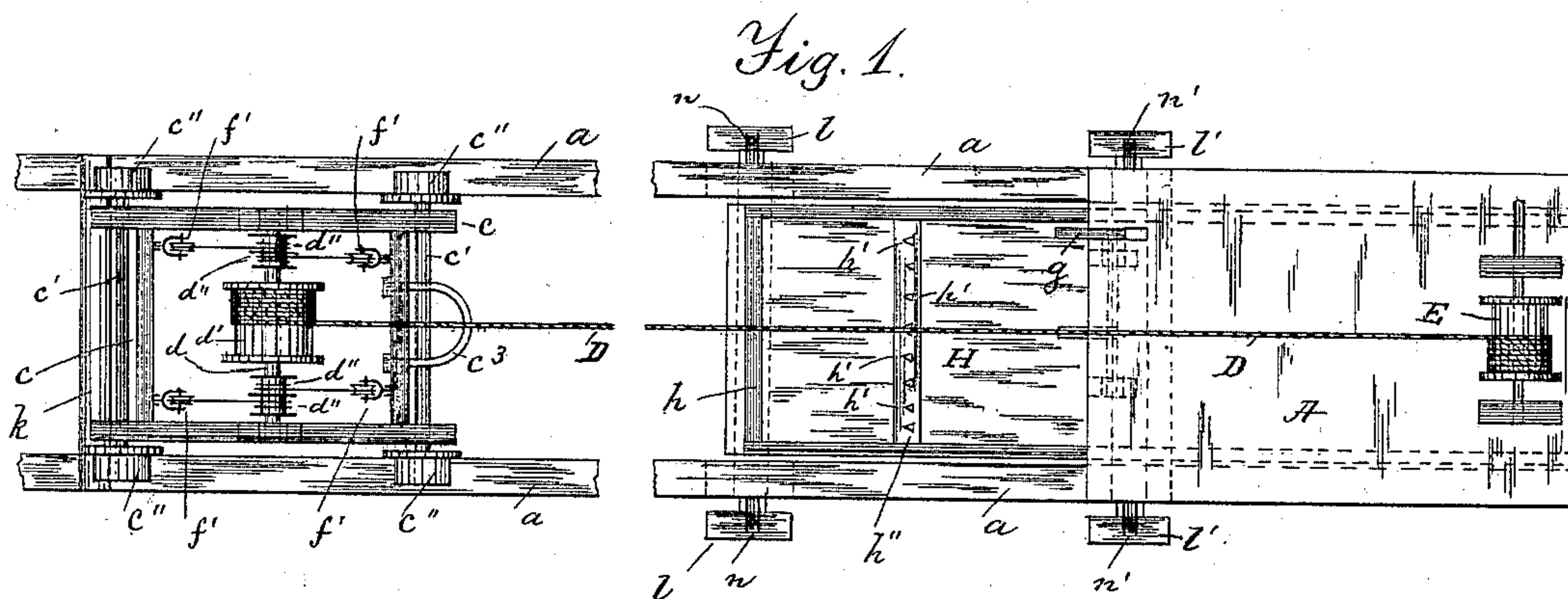
(No Model.)

2 Sheets—Sheet 1.

J. S. ROGERS.  
ELEVATOR AND CONVEYER.

No. 405,325.

Patented June 18, 1889.



Witnesses.  
Carl A. Andrew.  
Selma R. Schelin.

Inventor.  
James S. Rogers.  
by Alvan Andrew, his atty.

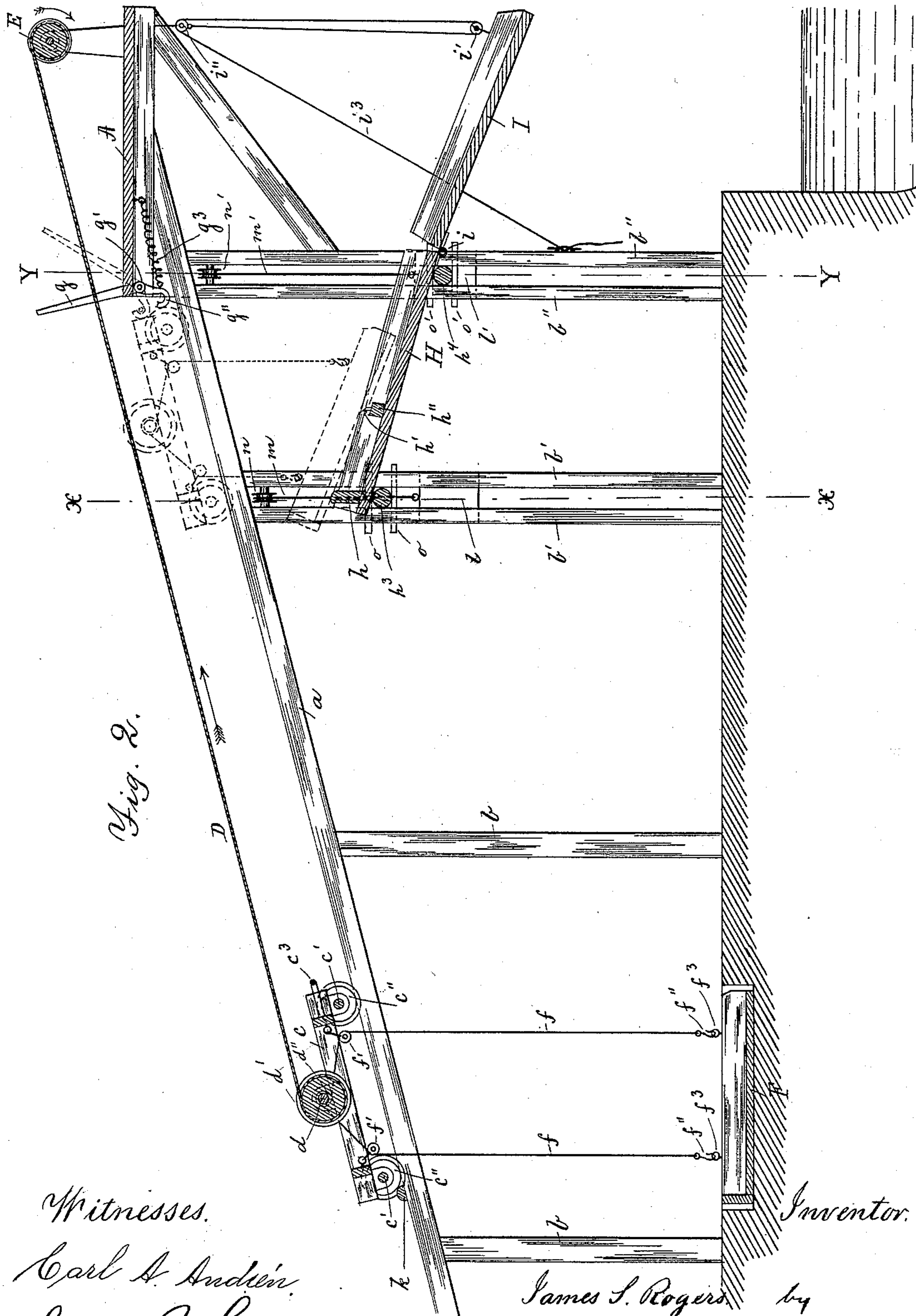
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# UNITED STATES PATENT OFFICE.

JAMES S. ROGERS, OF ROCKPORT, MASSACHUSETTS.

## ELEVATOR AND CONVEYER.

SPECIFICATION forming part of Letters Patent No. 405,325, dated June 18, 1889.

Application filed January 2, 1889. Serial No. 295,115. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES S. ROGERS, a citizen of the United States, and a resident of Rockport, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Elevators and Conveyers, of which the following, taken in connection with the accompanying drawings, is a specification.

Figure 1 represents a plan view of the improved elevator and conveyer, the same being broken away at a suitable point of its length. Fig. 2 represents a longitudinal section of the same. Fig. 3 represents a vertical section on the line X X shown in Fig. 2; and Fig. 4 represents a similar section on the line Y Y, also shown in Fig. 2.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

The invention is particularly designed for the purpose of elevating stone, coal, &c., and conveying such material to a chute, from which it is discharged into cars or vessels, as may be desired.

The invention is constructed as follows:

*a* represents an inclined way or track, preferably supported on posts or standards *b b*, or in any other suitable or equivalent manner.

*c* is a carriage adapted to roll on said track *a*, it having for this purpose a pair of axles *c'* *c'*, journaled in suitable bearings, and provided with flanged wheels or rollers *c'' c''*, as shown in Figs. 1 and 2. In bearings on said carriage is loosely journaled the drum-shaft *d*, to which is secured, about midway upon it, the large drum *d'*, and at or near its ends the smaller cylinders or drums *d'' d''*, as shown in Figs. 1 and 2. Around the drum *d'* is wound the chain or rope *D*, one end of which is secured to said drum and the other end is carried and secured to the hoisting-drum *E*, that is preferably actuated by means of a suitable steam engine or motor, which latter is, however, not shown in the drawings.

The hoisting-drum *E* is preferably located in bearings on a platform *A* at the upper end of the inclined track *a*, as shown in Figs. 1, 2, and 4; but this is not essential, as it may be arranged in any other suitable position, according to the locality in which the ele-

vator and conveyer is to be used. For instance, the engine or motor may be located on the ground and the hoisting rope or chain carried from it over a guide pulley or drum located at the upper end of the inclined track *a* to the drum *d'* on the carriage *c*, or in any other suitable or convenient manner, according to circumstances, without departing from the essence of my invention. From the smaller drums *d'' d''* lead ropes or chains *f f f f* to the box or scoop *F* containing the stone or other material that is to be elevated and conveyed from one place to another.

The ropes or chains *f f* are guided in pulleys *f' f'*, secured to the carriage *c*, and are preferably provided with hooks *f'' f''* in their lower ends adapted to be connected to eyes or staples *f<sup>3</sup> f<sup>3</sup>*, secured to the box or scoop *F*, as shown in Fig. 2.

The box *F* is open in its front end, so as to facilitate the discharge of its contents when it is tipped onto the chute, as shown in dotted lines in Fig. 2.

In Fig. 2 I have shown the box or scoop *F* as located in a pit made in the ground, which arrangement is very practicable in dumping the stones from carts into said box or scoop; but this arrangement is not essential, as the loaded box or scoop may be conveyed on a railway-truck to below the car *c* and the hoisting ropes or chains *f f* attached to it preparatory to hoisting and conveying the said loaded scoop.

Supposing the box or scoop *F* to be loaded and connected to the drum-shaft of the carriage *c* by means of the chains or ropes *f f* and the rope or chain *D* pulled in the direction of arrow shown in Fig. 2, no rolling motion of the carriage *c* on the track *a* will at first take place, owing to the weight of the said carriage and the loaded box suspended from it, and also on account of the difference in size of the drum *d'* and the hoisting drums or shafts *d'' d''*; but the drum *d* will be rotated, causing the ropes or chains *f f* to be wound on the drums *d'' d''* and consequent raising of the loaded box or scoop *F* until the latter, or any of its connections, is brought to a stop against the carriage *c*, when, as the rope or chain *D* continues to move in the same direction, it will cause the carriage *c* and the



loaded box F, suspended from it, to ascend along the track *a* until it reaches the position shown by dotted lines in Fig. 2, where it is locked in position by means of the hooked lever *g*, pivoted at *g'* and having a hook *g''* for attaching it to a bail *c*<sup>3</sup>, attached to the forward end of the carriage *c*, as shown in Figs. 1 and 2. The hooked lever is held in such locked position against the influence of a suitable spring *g*<sup>3</sup>. (Shown in Fig. 2.) The hoisting drum or motor E is then reversed, causing the loaded box F to descend until it reaches the rear ledge *h* of the adjustable chute H, which causes it to tip to the position shown in dotted lines in Fig. 2, its middle portion resting on spikes or prongs *h' h'*, secured to a beam or cross-bar *h''*, attached to the chute H, as shown. The contents of the box F will then be automatically discharged onto the chute H, and preferably onto a secondary chute I, pivoted at *i* to the outer end of the chute H, and from the chute I the stones are discharged into the vessel or onto cars, as may be desired. Pulleys *i' i''* and ropes *i*<sup>3</sup> serve the purpose of adjusting the position of the outer chute I, as shown.

After the box or scoop F has been discharged onto the chute H, as above mentioned, the drum or motor E is again set in motion in the direction of the arrow shown in Fig. 2, causing the scoop F to rise until it is brought in contact with the carriage *c*, when the latter is caused to ascend the track *a* a little, sufficient to cause the spring *g*<sup>3</sup> to disengage the hook *g''* from the bail *c*<sup>3</sup> on said carriage, after which the motion of the drum or motor E is reversed, allowing the carriage *c* to descend on the track *a* until its lower wheels are brought against the stop bar or projection *k*, as shown in Figs. 1 and 2 when, by a continuous slackening of the rope or chain D, the scoop or box F is lowered until it reaches the ground to be again loaded, and so on.

The chute H is made vertically adjustable to any desired inclination as follows: To the upper end of said chute is firmly secured the beam *h*<sup>3</sup>, the projecting ends of which are guided between upright posts *b' b'* on both sides of the track, as shown in Figs. 2 and 3, and said upper end of the chute is balanced, or nearly so, by means of counter-weights *l l* and chains or ropes *m m*, carried over rollers or pulleys *n n*, as shown in said Figs. 2 and 3. After being adjusted to the desired position the upper end of the chute H is secured in place by means of pins or bolts *o o* going through perforations in the upright posts *b' b'*, as shown in said Figs. 2 and 3. The lower end of the chute H is loosely supported on the vertically-adjusted beam *h*<sup>4</sup>, that is guided between the upright posts *b'' b''* at both sides of the track, as shown in Figs. 2 and 4, the said beam being adjustably secured to the posts *b'' b''* by means of pins or bolts *o' o'* going through perforations in said posts. The lower end of the chute H is balanced, or

nearly so, by means of ropes or chains *m' m'*, counter-weights *l' l'*, and rollers or pulleys *n' n'* in a similar manner to corresponding parts at the upper end of the said chute.

The stop beam or projection *k* is to be secured in any suitable manner to the track, according to the lowest position desired for the carriage *c* in loading the scoop F.

The invention is adapted for use for a variety of purposes—as, for instance, instead of loading the stone, &c., directly into a scoop or box on the ground, as shown in Fig. 2, a loaded scoop may be transported on a railroad truck or car to a place directly below the car *c*, the ropes or chains *f f* attached to such scoop, which is afterward hoisted, transported, and discharged, as above described, and, after being discharged, delivered onto the said truck or car, the latter driven away with the said empty detached scoop and another truck or car containing a loaded scoop or box driven below the car *c*, and so on; or, if so desired, the device may be used for the purpose of transferring loaded scoops or boxes from one truck or car to another or others on parallel tracks or in any other suitable manner, as may be desired.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim—

1. In an elevator and conveyer, the combination of the frame supporting the track, the adjustable cross-beams in said frame, the chute having counter-weights and supported on said adjustable cross-beams, the platform carrying the spring-catch, the carriage mounted on the track having guide-pulleys journaled therein, a shaft carrying a large and small drums mounted in the carriage, a rope passing around the large drum for rotating the shaft, ropes passing around the small drums and guide-pulleys, and the box connected to said ropes, said parts being arranged and operating substantially in the manner and for the purpose described.

2. In an elevator and conveyer, the combination of the frame supporting a track, the cross-beams adjustable in said frame, the pins for retaining the cross-beams in their adjusted positions, the counterweighted chute supported on said cross-beams, the platform carrying the spring lever-catch supported on the frame, the carriage carrying the guide-pulleys mounted on the track and having an eye adapted to be engaged by the lever-catch, the shaft mounted in the carriage carrying a large and small drums, a rope passing around the large drum, ropes passing around the small drums and over the guide-pulleys, and a box connected to the said ropes, said parts being arranged and operating substantially as and for the purpose described.

3. In an elevator and conveyer, the combination of the frame supporting a track, a counterweighted chute adjustable in the frame, a carriage having a shaft mounted therein carrying differential drums, guide-



5 pulleys mounted in the corners of the carriage, ropes passing around the drums and guide-pulleys, a box connected to said ropes, a rope for rotating the shaft carrying the drums, and a lever having a hook at one end for engaging the carriage, said parts being arranged and operating substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 29th day of December, A. D. 1888.

JAMES S. ROGERS.

Witnesses:

ALFRED PARSONS,  
GEORGE H. NORWOOD.