T. K. AUSTIN.

ELEVATOR.

No. 180,186. Patented July 25, 1876.

Fig: 1.

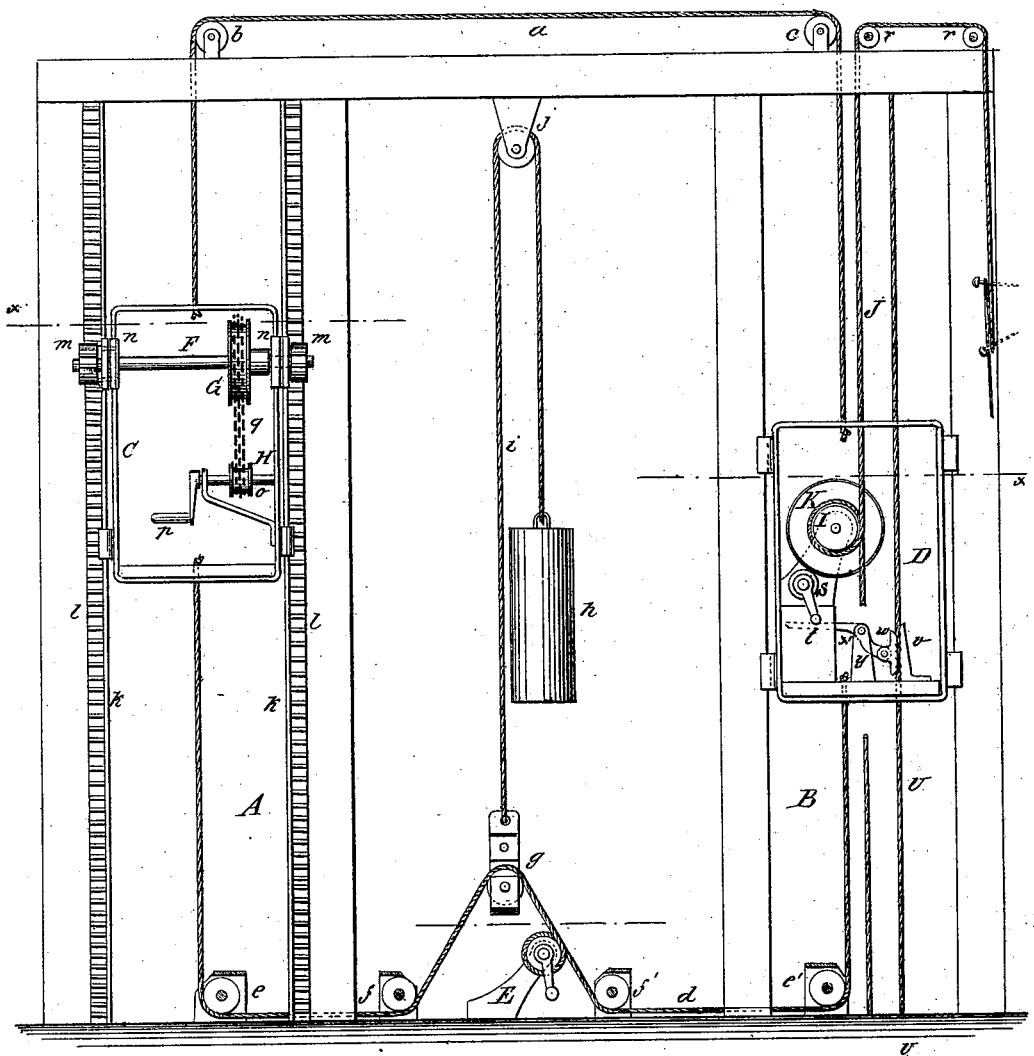
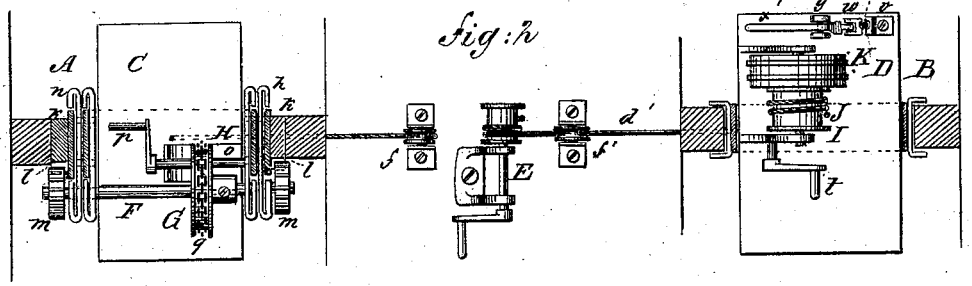


Fig: 2.



WITNESSES:

Chas. Nida

John Goethals

INVENTOR:

T. K. Austin

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

THOMAS K. AUSTIN, NEW YORK, N. Y.

IMPROVEMENT IN ELEVATORS.

Specification forming part of Letters Patent No. **180,186**, dated July 25, 1876; application filed June 12, 1876.

To all whom it may concern:

Be it known that I, THOMAS K. AUSTIN, of the city, county, and State of New York, have invented a new and Improved Elevator, of which the following is a specification:

Figure 1 is an elevation. Fig. 2 is a plan taken on line *x x* in Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention consists in the arrangement of elevators working on guides in wells or shafts, provided at the front and rear of the building, the said elevators being connected above and below by ropes or chains, in such a manner that they may counterbalance each other, and are each provided with gearing, which can be operated by one or more persons on the elevator, to raise or lower it, as may be desired.

A and B are shafts or wells, situated on opposite sides of the house, or in any other location which renders it convenient to connect the elevators at the top and bottom by means of a rope or chain. C D are elevators, which move on suitable ways *k*, placed in the shafts A B, and are connected at the top by the rope *a*, which runs over the fixed pulleys *b c* in such a way that they counterbalance each other. A rope, *d*, connects the elevators at the bottom, running under fixed pulleys *e e'* and *f f'*, and through a snatch-block, *g*. This snatch-block is connected with a weight, *h*, by the rope *i*, which runs over a pulley, *j*. E is a winch, placed so that it is capable of engaging with the rope *d* between the pulleys *f f'*. In the shaft A the ways *k*, on which the elevators run, are provided with racks *l l*, which extend from the bottom to the top of the shaft. The elevator C has a shaft, F, which runs across the frame, and is supported in suitable boxes. Pinions *m m* are keyed to the shaft F, and mesh into the racks *l l*, and are kept from leaving the racks by the guides *n n*, which engage with the ways *k*.

A chain-wheel, G, is keyed to the shaft F, and a smaller wheel, H, is fixed to the shaft *o*, which is placed in suitable supports, and is provided with a crank, *p*. The chain-wheels G and H are connected by an endless chain, *q*. The elevator D is operated by a different mechanical device from that described above, friction-gear being employed instead of the chain-wheels, and a winding-drum and rope instead of racks and pinions.

I is a drum, which is placed on a shaft having suitable supports, attached to the frame of the elevator D. A rope, J, which is made taut by drawing it over the pulleys *r r*, is wound around the drum I, with one or two turns. A friction-wheel, K, is attached to the drum I, which engages with a smaller wheel, S. *t* is a crank attached to the shaft which carries the wheel S.

A safety apparatus is shown in connection with the elevator D, which may also be applied to the elevator C. It consists of a rope, U, which extends from the top to the bottom of the shaft B, and is capable of being clamped tightly by the braking apparatus, consisting of the fixed shoe *v* and the shoe *w*, which is pivoted to the short arm of a right-angled lever, *x'*, which has its fulcrum in a post, *y*, which is fixed to the platform of the elevator.

If it is desired to ascend by the elevator C, it is only necessary to step upon the platform and turn the crank *p*, the motion of which is transmitted to the wheel G through the chain *q*, causing the pinions *m m* to travel on the racks *l l*.

The wheel G, being much larger than the wheel H, gives an advantage in leverage, so that it requires but little power to raise or lower the elevator. The weight of the elevator itself is not to be considered, as it is counterbalanced by the elevator D. The operation of the elevator D is similar to that just described. Turning the crank *t* revolves the wheel K and the drum I, which, by reason of its engaging with the rope J, travels up or down at the will of the operator.

The motion of the elevator may be checked in its descent, or stopped altogether, if desired, by pressing the foot on the long arm of the brake-lever *x'*. If more power is required to operate the elevators than can be applied conveniently to the gearing placed on them, the rope *d* may be wound around the winch E, the snatch-block *g* being drawn down to give the amount of rope required for the purpose, when, by turning the winch, the elevators are moved at will.

When extra heavy weights are to be raised, a quantity of heavy material may be placed on the elevator which is up, or two or three persons may take the one which is at the top of the shaft, and, by working their way down by means of the gearing, may raise whatever is placed on the other elevator. It will be seen, also, that an elevator may be used singly by substituting a counterbalance-weight for the other elevator.

The advantages which my elevator has over others in use are, that it is comparatively inexpensive, both as to its construction and maintenance. It requires no extraneous power, being easily worked by hand, and is capable of raising heavy articles by operating it in the manner described above. It is adapted for French flats, private houses, and other places where light work is required.

I do not limit myself to the exact form, position, or construction of the parts composing my improvement, as they may be varied without departing from my invention.

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

The combination, with an elevator, of a common capstan or winch and a snatch-block, the latter having a weight attached to its tail, and a supporting-pulley overhead, whereby the power transmitted through the winch may act on the rope of elevator without the necessity of a second person to hold it and take up the slack.

THOMAS K. AUSTIN.

Witnesses:

T. B. MOSHER,

ALEX. F. ROBERTS.