

(No Model.)

A. F. SMITH & T. Y. DAVIDSON.
Elevator.

No. 229,558.

Patented July 6, 1880.

Fig. 1.

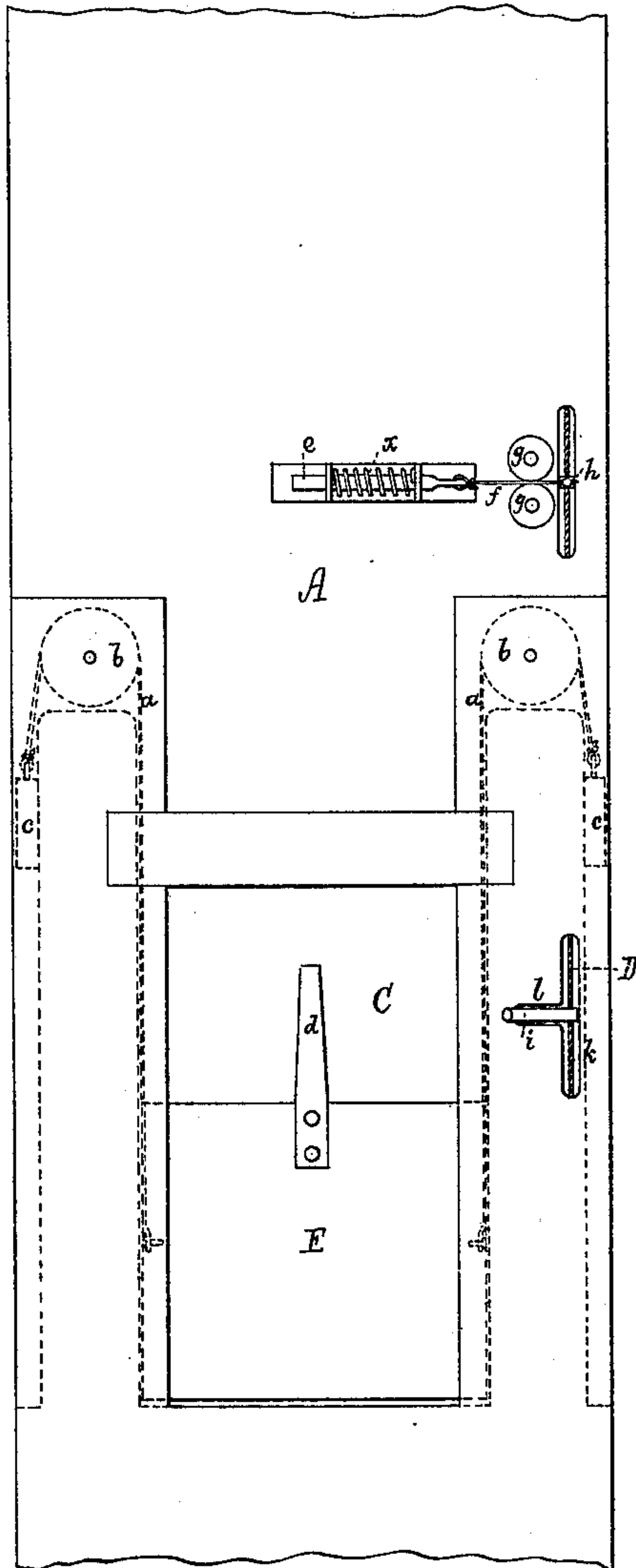
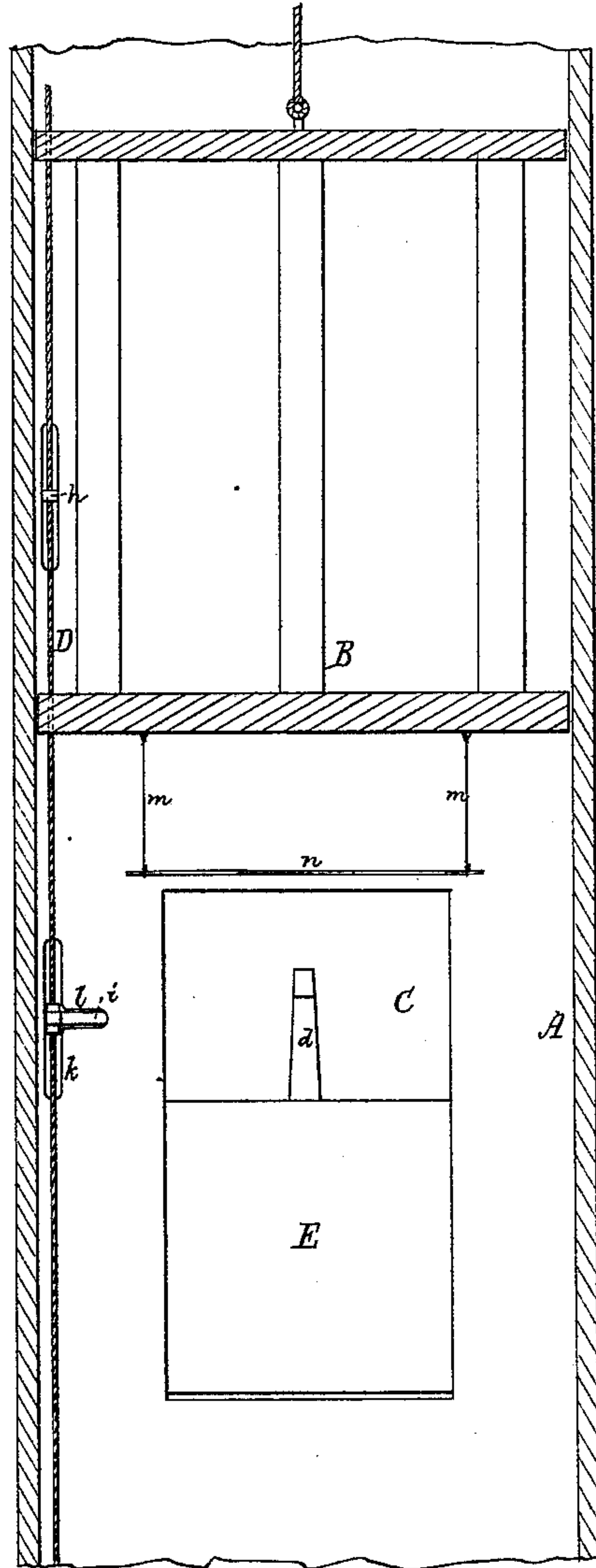


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

AARON F. SMITH AND THOMAS Y. DAVIDSON, OF LYNN, MASSACHUSETTS.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 229,558, dated July 6, 1880.

Application filed May 27, 1880. (No model.)

To all whom it may concern:

Be it known that we, AARON F. SMITH and THOMAS Y. DAVIDSON, of Lynn, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Goods or Passenger Elevators; and we do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a front elevation, and Fig. 2 a transverse section, of an elevator and its well provided with our invention, which is to prevent a person from accidentally falling into the well or from being injured by the elevator-car while it may be descending in the well.

By reason of the door of the well of an elevator having accidentally been left open or it being in proximity with one or more others severe accidents have not infrequently taken place—that is, a person has entered and fallen into the well and been seriously injured or killed. So, by reason of a person being in the doorway of an elevator-well and incautiously extending himself into the well, he has been struck by the car in its descent and injured thereby.

The nature of our said invention is fully set forth in the claims hereinafter presented.

In the drawings, A denotes a portion of the well, and B the car of an ordinary passenger or goods elevator for a building, one of the doorways of such well being shown at C and the belt-shifter rope or rod at D. On moving the said rope or rod in one direction a sufficient distance the mechanism for raising the car will be set in action. So by moving the rope or rod the opposite way a sufficient distance the mechanism to effect a descent of the car will be put in operation. By moving the rope or rod half the distance between its extremes of movement stoppage of the car takes place.

In carrying out our invention we provide each doorway of the well with a vertically-movable gate, E, arranged in guides, so as to be capable of being moved from the threshold up to or above the top of such doorway, and we prefer to have such gate suspended from ropes *a a*, going around sheaves *b b*, and provided with weights *c c*, such as will nearly counter-balance the gate. This gate at top we provide with a spring-catch, *d*, to co-operate with a

slide or spring bolt, *e*, attached to a line or rope, *f*. This line or rope goes between two guides or sheaves, *g g*, arranged near together, as shown, and is fastened to an arm, *h*, extending from the belt-shifter rod or rope D, which also has another such arm, *i*, projecting from it aside of the doorway and through a vertical slot, *k*, opening into the well, and also into a short horizontal notch or recess, *l*, the latter being at the middle of the slot *k*. The arm *i* is to revolve or turn on the rod or rope D, but not to be movable in other respects thereon.

Furthermore, there are suspended from the bottom of the car by short lines, chains, or ropes *m m*, so as to move with the car close alongside of each of the doorways of the well, a light rod or bar, *n*, which, during a descent of the car and just before such car may reach a dangerous proximity to a person in the doorway, and extended more or less into the well, will be carried in contact with such person in time as a warning to move out of the way of the car and be saved from injury thereby.

Although it is customary in the elevators of hotels or large stores to have an attendant to the car, whose special duty is to regulate the movements and stoppage of it, as occasion may require, such is not generally the case in other establishments, the car of any such being put in operation by any person who may desire to use it, in which case it is not an uncommon occurrence, when the car may be at one floor and there be receiving persons or goods, for it to be prematurely started either up or down in the well by a person on another floor overhead or below. Under such circumstances accidents are liable to take place, or a person or article partially in the car may be seriously injured or crushed by being caught by such in the doorway, all of which may be obviated by simply turning the locking-arm *i* into the lateral recess or notch *l*, such preventing any premature movement of the belt-shifter rod or chain.

On the car arriving at a doorway the party in the car is to take hold of and push the gate upward until its spring-catch may engage with the slide or bolt. By these means the gate will be retained in its raised position until the car may next be put in movement, either upward or downward. On such movement tak-

ing place the bolt will be retracted against the power of its spring *x*, and the gate will descend to or near the threshold of the door-opening, and thus will serve while there to
5 prevent any person from passing into the opening and falling into the well.

What we claim as our invention is as follows, viz:

1. The combination of the safety-gate E and
10 its latching and unlatching mechanism, consisting of the spring-catch *d* and bolt *e*, and the line *f*, guides *g*, and arm *h*, with the elevator-well A, the car B, and the belt-shifting rope or rod D of the mechanism for operating
15 such car, the said gate being applied to a door-

way of the well, in manner and for the purpose substantially as set forth.

2. The combination of the locking-arm *i* and recess *l* with the elevator-well A and the belt-shifter rod or rope D, all being to operate sub- 20
stantially as explained.

3. The combination of the safety rod or bar *n* and its suspension-ropes *m* with the elevator-car B and its well A, all being arranged and to operate essentially as specified.

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