

No. 801,752.

PATENTED OCT. 10, 1905.

M. TURNBULL.
ELEVATOR SHAFT OR WELL WAY GATE.

APPLICATION FILED JULY 29, 1904.

2 SHEETS—SHEET 1.

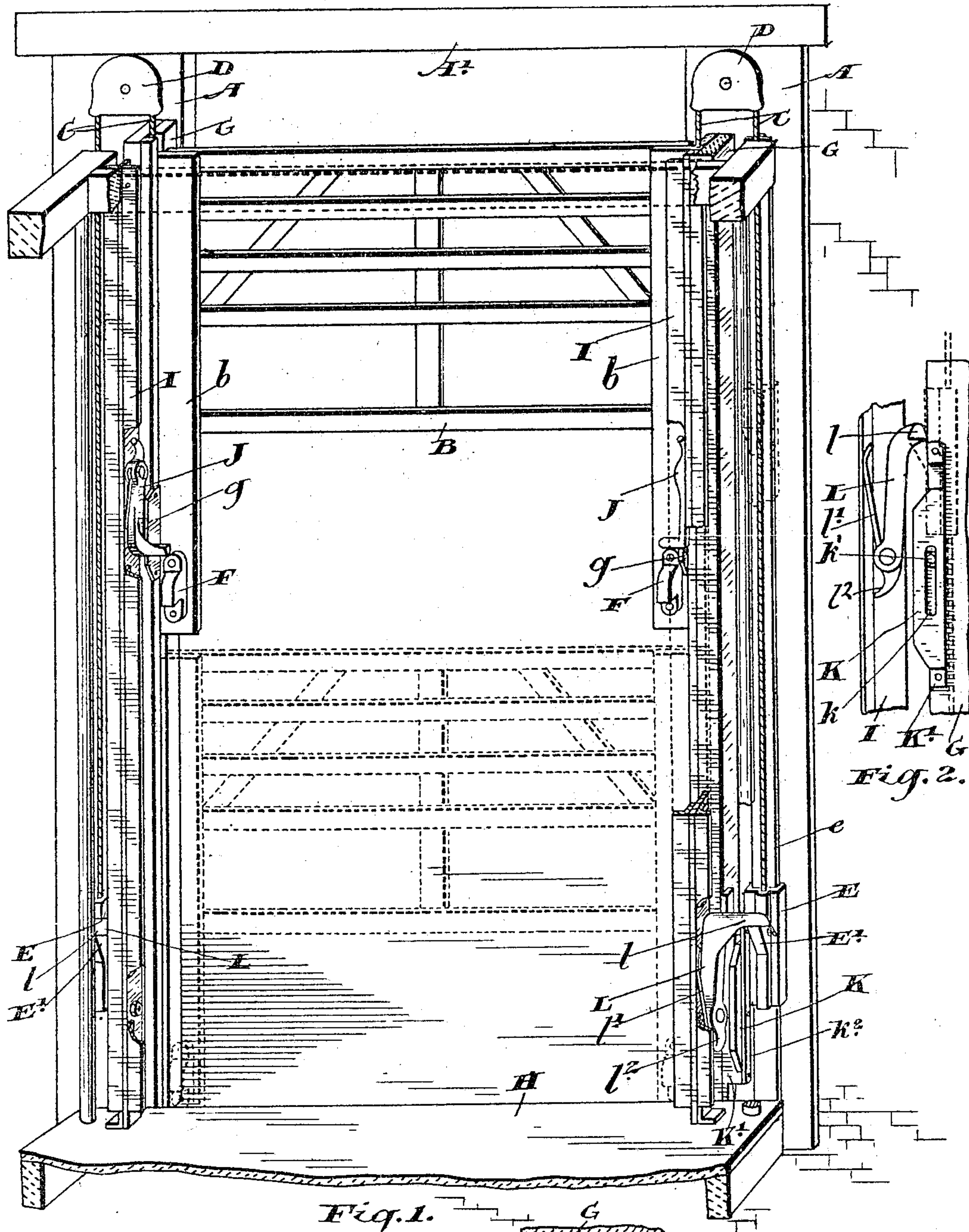


Fig. 1.

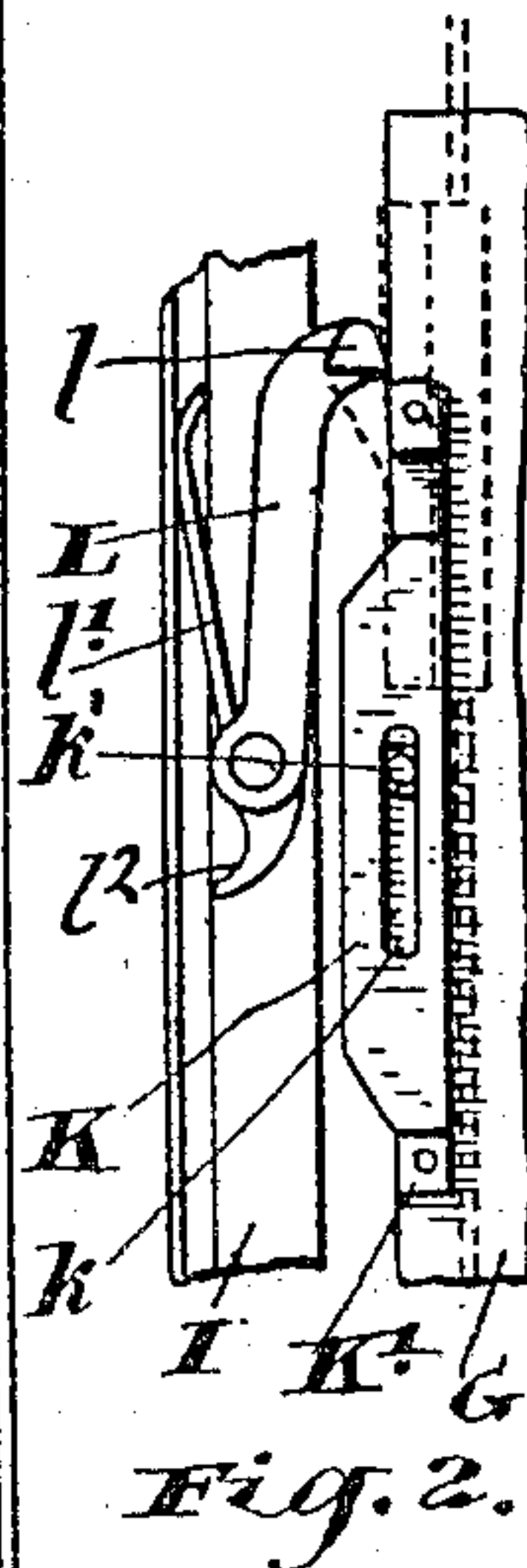


Fig. 2.

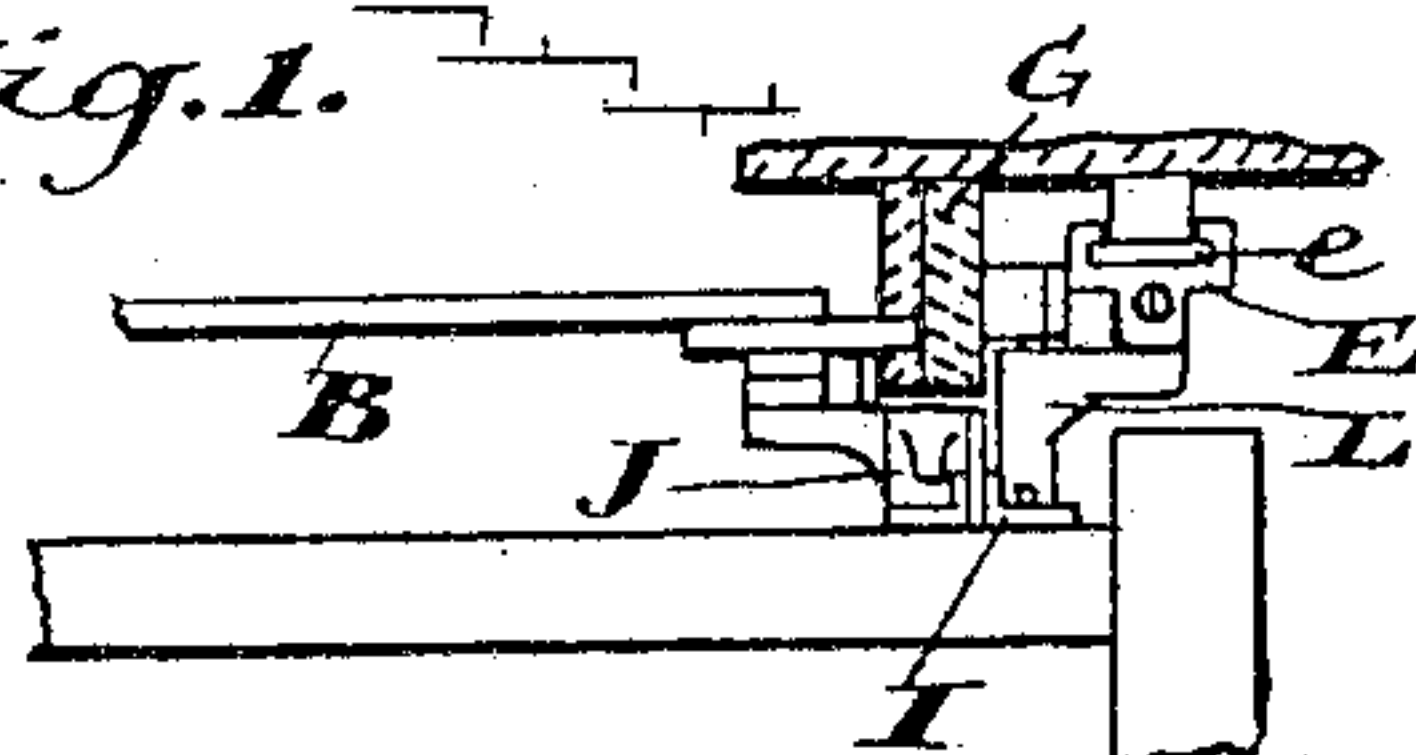


Fig. 3.

Witnesses.
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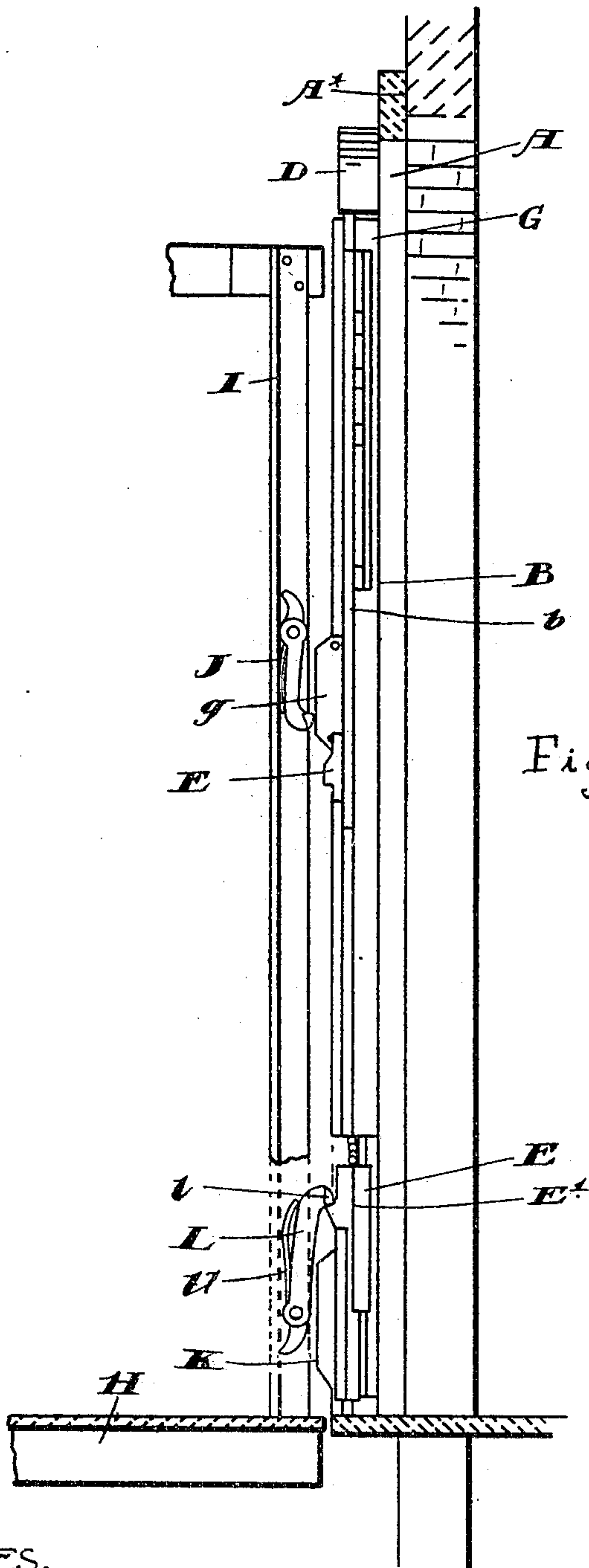


Fig. 4.

WITNESSES.

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UNITED STATES PATENT OFFICE.

MICHAEL TURNBULL, OF TORONTO, CANADA.

ELEVATOR-SHAFT OR WELL-WAY GATE.

No. 801,752.

Specification of Letters Patent.

Patented Oct. 10, 1905.

Application filed July 29, 1904. Serial No. 218,700.

To all whom it may concern:

Be it known that I, MICHAEL TURNBULL, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Elevator-Shafts or Well-Way Gates, of which the following is a specification.

My invention relates to improvements in elevator-shafts or well-way gates; and the object of the invention is to devise a simple and efficient means whereby the gate may be raised when the elevator-cage reaches the landing and lowered again as the elevator-cage passes away from the landing and which will be operated by the elevator-cage in its ascent and descent and at the same speed as the elevator-cage, which will be of a maximum strength and worked without any strain and with but a minimum amount of power; and it consists, essentially, of bracket-dogs secured on each side of the gate, supporting chains or cords for the gate attached at the side to the gate and passing over pulleys, sliding counterweights secured to the free ends of the cords, dogs located thereon reversely set to the dogs on the gate, two pivoted spring-actuated catches secured on the uprights of the elevator-cage and designed to coact with the bracket-dogs on the gate, and two reversely-set spring-actuated catches secured on the uprights of the elevator-cage and designed to coact with the dogs on the counterweights, the parts being otherwise arranged and constructed in detail, as hereinafter more particularly explained.

Figure 1 is a perspective view showing my improved gate, the elevator-cage being broken away and in section. Fig. 2 is a side elevation showing a detail of the catch. Fig. 3 is a part plan. Fig. 4 is a side view.

In the drawings like letters of reference indicate corresponding parts in each figure.

A represents the stiles, and A' the head of the doorway, in an elevator-shaft.

B is the gate of the doorway, which is provided with the side bars *b b*, by which it is hung by the ropes or cords C, passing over the pulleys D and provided at the opposite end with the sliding weights E, having movement on suitable guideways *e*.

E' is a dog-catch on each weight E.

F represents dog-catches secured to the bottom of the bars *b* of the gate.

G represents guideways secured to the door-frame A and into which the side bars *b* of the gate B extend.

g represents plates provided with beveled ends secured to the inner faces of the guideways G in proximity to the grooves in the same and located toward the upper end of the guideways.

H is the elevator-cage having the uprights I I, which are designed to move closely to the guideways G as the elevator-cage ascends and descends.

J J are catches pivoted on the uprights I.

K K are plates having beveled ends and each having a central slot *k*, through which extends a pin *k'*, secured to the bracket K'. The plate K is held in position on the bracket by a retaining-plate *k''*, and the bracket K' is secured to the outside face of the guideway G.

L L are catches pivoted on the bars I, and each catch is provided with a projecting portion *l*, which is designed to engage with the dog E' on the weight E.

L' represents springs designed to normally force the projecting portions *l* into the path of the dogs E'. Each catch L is provided with a tail *l''*, which is designed to prevent the spring L' from forcing the projecting portion *l* over too far by pressing on the upright.

The catches L are reversely set to the catches J; but the catches J are formed in the same way.

Having now described the principal parts involved in my invention, I shall briefly describe the operation and utility of my device for opening and closing the gate.

As the elevator-cage ascends from the floor-level the gate B descends, as the catches L in passing upwardly allow of the weights E, with the dogs of which they engage, to ascend, as the weight of the gate B is heavier than the combined weights E. The elevator-cage continuing to ascend leaves the gate down or in the closed position. When the elevator-cage, however, passes up to the next floor, the catches J come in contact with the dogs F on the gate of that floor and raise the gate until the floor of the elevator-cage has reached the level of that floor. The weights E are consequently caused to descend, and the catches in further ascending are thrown outwardly by the beveled plates *g*, so as to disengage the dogs, at which point the catches L will have sprung over the dogs E', and thereby hold the gate up during the period that the elevator-cage is at this floor. Immediately, however, the elevator-cage starts to ascend again the gate B also descends on account of the catches L ascending and permitting the weights E to as-

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cend and allow of the downward movement of
the gate. When the elevator-cage is going
down, the catches L as they pass downwardly
meet the plates K, which will raise the catches
5 from engagement with the dogs E', and there-
by release the weights E, thus allowing the
gate B to descend. When the catches L reach
the next landing, however, they will engage
with the dogs E', and thereby force the weights
10 E downwardly and raise the gate by the time
the elevator-cage has reached the next land-
ing. The catches J will in the meantime pass
over the plates G and be guided underneath the
dogs F, and thereby hold the gate during the
15 period that it remains at the landing.

It will of course be understood that there
is a gate with dogs and pulleys and cords and
weights, as above described, at each landing
or floor and that the catches J and L will op-
20 erate in identically the same manner in refer-
ence to the dogs F and weights E and dogs E'.

I preferably make the plates K slotted, so
as to allow of any stretch of the ropes or cords
C by which the weights E are supported.
25 The slots also in the plates provide for a dif-
ferent tripping-point as the elevator-cage de-
scends from the point of trip when the ele-
vator-cage ascends, as it will be understood it

is necessary that the lower catch must be in a
position to engage immediately upon the up- 30
per catch being released.

What I claim as my invention is—

In an elevator-shaft, the combination with
the gate supported in suitable guideways and
provided with dogs on the sides thereof and 35
the cords and pulleys by which the gate is
supported and weights on the ends of the
cords provided with dogs, of the upper
catches pivoted on the uprights of the cage
and having the engaging portion lowermost 40
and designed to engage with the dogs on the
gate and the lowermost pivoted catches hav-
ing the engaging portion uppermost and de-
signed to engage with the dogs on the weights
and the upper plates located on the guideways 45
of the gate and designed to raise the upper
catches clear of the dog on the gate and the
lower slotted plates located on the guideways
and designed to raise the catches clear of the
dogs on the weights as and for the purpose 50
specified.

MICHAEL TURNBULL.

Witnesses:

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