(No Model.) 2 Sheets—Sheet 1.

# F. O. KITTREDGE.

## DEVICE FOR OPERATING ELEVATOR HATCHWAY GATES.

No. 427,770. Patented May 13, 1890.

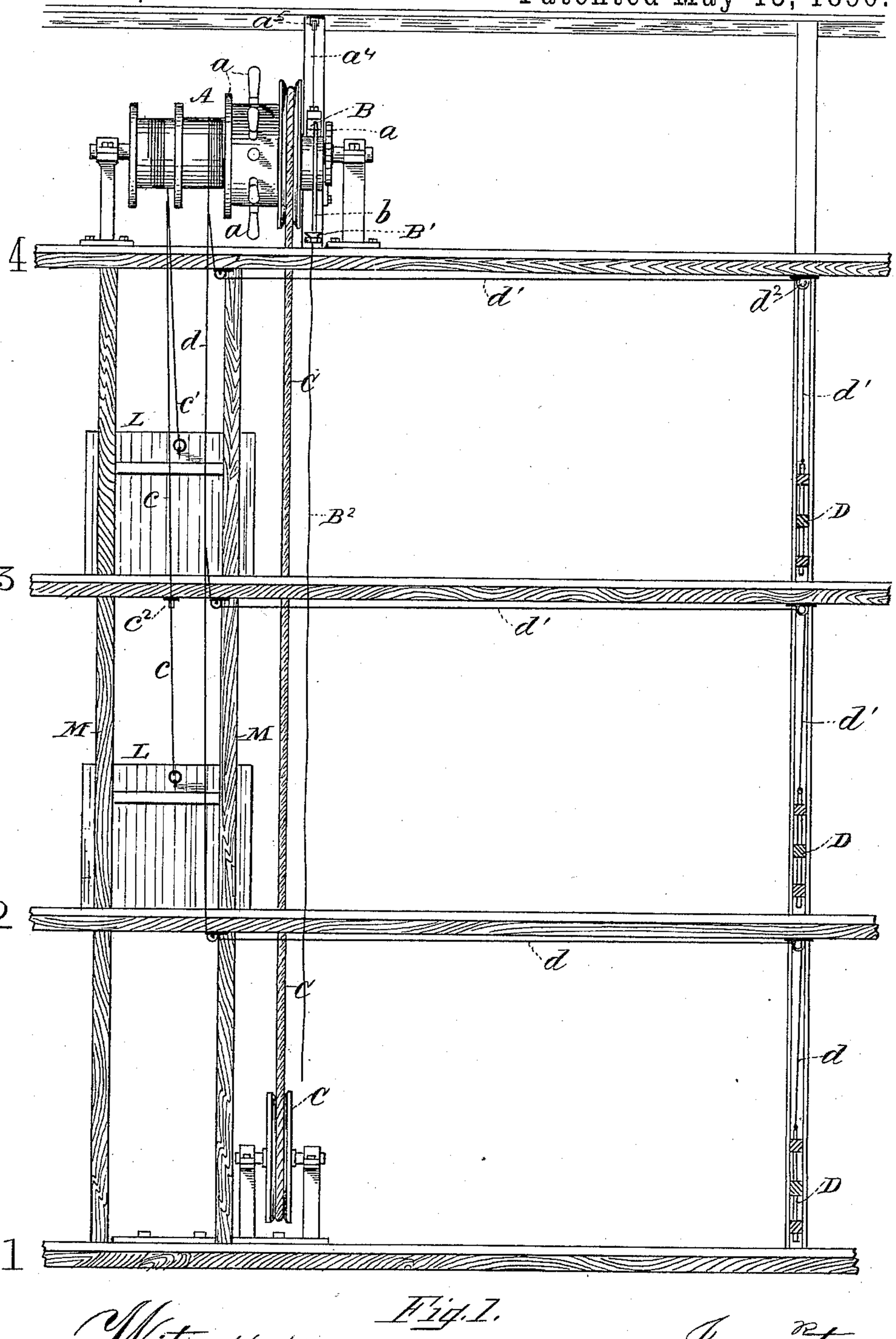


Fig. 1.

Witnesses.
Francis M. Goodwin.
George H. Russell

Inventor.
Franklin O. Kittredge

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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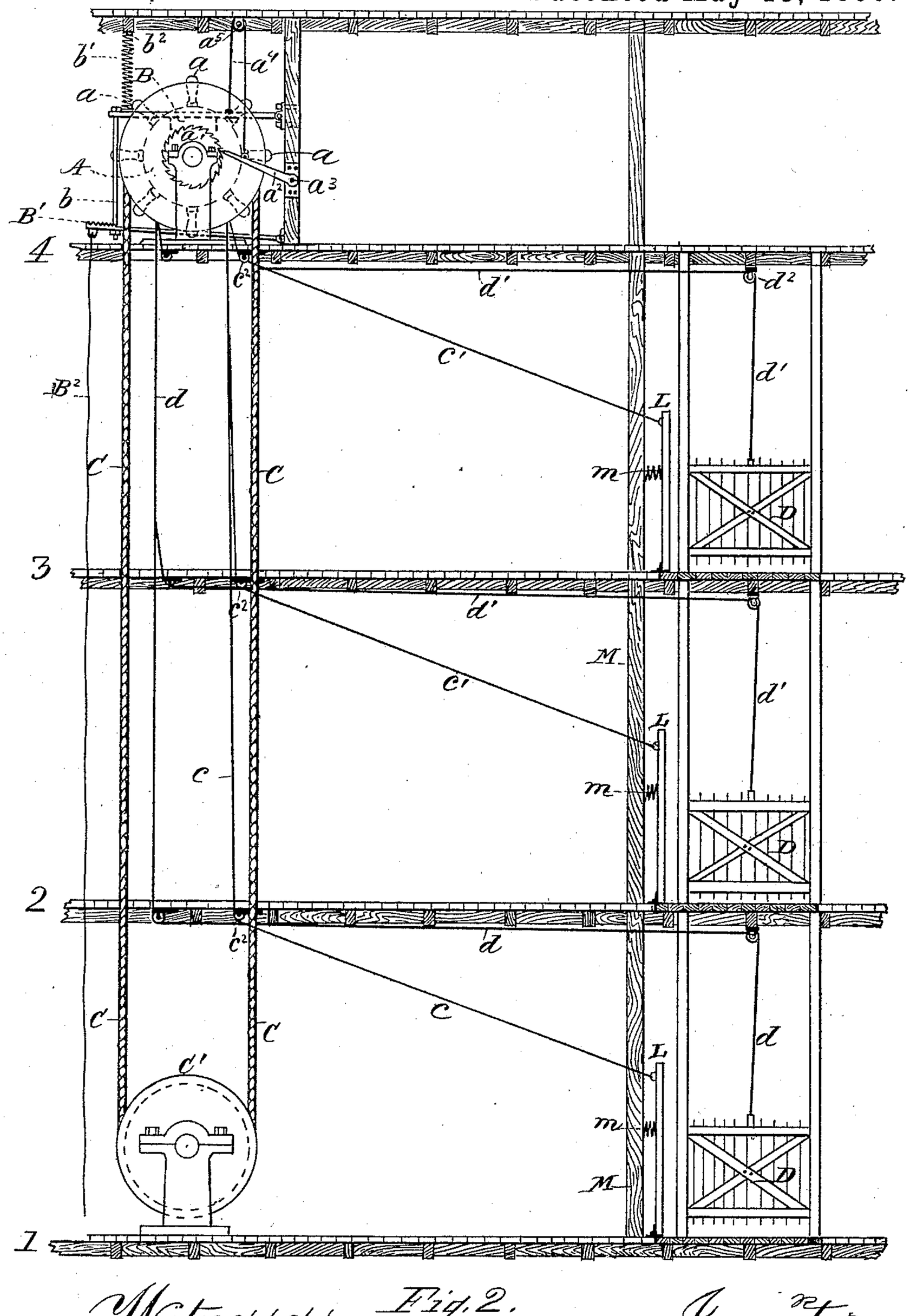


Fig. 2.

Witnesses:
Francis M. Bonsall.
George W. Russell.

Inventor:
Franklin O. Kittredge

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

FRANKLIN O. KITTREDGE, OF MEDFORD, MASSACHUSETTS.

## DEVICE FOR OPERATING ELEVATOR-HATCHWAY GATES.

SPECIFICATION forming part of Letters Patent No. 427,770, dated May 13, 1890.

Application filed March 12, 1890. Serial No. 343,663. (No model.)

*To all whom it may concern:*

Be it known that I, FRANKLIN O. KITTREDGE, of Medford, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Devices for Raising and Lowering all the Trap-Doors and Gates of an Elevator-Well Simultaneously, of which the following is a specification.

My invention consists in a windlass placed, preferably, in the upper story of a building; but it may be placed in the lower story, a rope or chain carried over said windlass through all the stories of the building, and connected by the use of pulleys with the trap-doors in the elevator-well in every story. If desired, another rope or chain may be carried over the windlass the opposite way and connected with the safety-gate on each floor, so that when the windlass is turned one way the trap-doors on every floor will be raised and the gates lowered, and when the windlass is turned the opposite way the trap-doors will be lowered and the gates raised. This invention can be applied to either the trap-doors or to the safety-gates, and not to the other, if desired.

The floors of the building are designated in the drawings by the Figures 1, 2, 3, and 4.

Fig. 1 of the drawings is a side elevation in section, and Fig. 2 is an end elevation in section.

Like letters indicate like parts in the different figures.

A is a windlass placed upon the upper floor of a building and provided with the usual handles $a$ when run by hand-power. The windlass is also provided with the ratchet $a'$ and the pawl $a^2$ upon the pivot $a^3$.

B is a brake for use upon the windlass A, said brake being equipped with the spring $b'$ for raising the brake, said spring being held at the top of the room, as shown by $b^2$.

B′ is a treadle connected with the brake B by means of the rod $b$. This treadle is used directly in operating the brake from the upper floor; but the cord $B^2$, attached to the treadle B′, serves to work the brake from any floor. The cord $a^4$ is run through the pulley $a^5$, and one end of said cord is attached to the brake B and the other end to the pawl $a^2$, so that when said brake is applied to the windlass A the pawl $a^2$ is taken from the ratchet $a'$ and the windlass is unlocked and its movement governed by the use of the brake B.

C is a rope for operating the windlass from any floor except the upper one. The drum C′ upon the lower floor is useful for holding the rope C in place, but it is not absolutely necessary, because the rope may be left hanging without special harm.

$c$ is the main rope for operating the trap-doors L, and $c'$ designates the branch ropes which connect said main rope with each trap-door, except on the lower floor, said branch ropes being run through the pulleys $c^2$. The main rope for operating the safety-gates D is designated $d$ in the drawings, and the branch ropes $d'$, running through the pulleys $d^2$ and $d^3$, connect each safety-gate D with said main rope $d$, except on the lower floor.

M M represent two posts running the entire height of the building and against which the trap-doors L open, and $m$ designates a spring to start each trap-door in closing.

The operation of my invention may be described as follows: The trap-doors L are raised and the safety-gates D lowered by turning the windlass A by means of the handles $a$ when the operator is upon the upper floor, or by pulling upon the rope C when he is upon any of the other floors. The ropes $c$ and $d$ being wound upon the windlass A in opposite directions, as hereinbefore mentioned, produce the opposite movement of the trap-doors and safety-gates. The pawl $a^2$ in the ratchet $a'$ holds the windlass A when the trap-doors are open, as shown in the drawings. When it is desired to lower the trap-doors and raise the safety-gates, the operator presses his foot upon the treadle B′ if he is on the upper floor, or if on any other floor he pulls the cord $B^2$, which brings the brake B down onto the windlass A, and at the same time the pawl $a^2$ is taken from the ratchet $a'$ by means of the cord $a^4$. The springs $m$ then start the trap-doors L and their weight turns the windlass A, the movement being governed by holding the brake B upon the windlass with such pressure as to insure the desired speed. An examination of the drawings makes it obvious that at the same time the safety-gates will be raised by means of the ropes $d$ and $d'$. It is obvious that by this de-

vice the trap-doors and safety-gates of an elevator-well upon all the floors of a building may be moved simultaneously.

What I claim as new, and desire to secure by Letters Patent, is—

1. A windlass A, provided with the brake B, the ratchet $a'$, the pawl $a^2$, and the rope $a^4$, running through the pulley $a^5$, in combination with the trap-doors L, said windlass and trap-doors being connected by means of the main rope $c$ and the branch ropes $c'$, constructed and arranged substantially as described and shown, and for the purpose set forth.

2. A windlass A, provided with the brake B, the ratchet $a'$, the pawl $a^2$, and the rope $a^4$, running through the pulley $a^5$, in combination with the safety-gates D, said windlass and safety-gates being connected by means of the main rope $d$ and the branch ropes $d'$, constructed and arranged substantially as described and shown, and for the purpose set forth.

3. A windlass A, provided with the brake B, the ratchet $a'$, the pawl $a^2$, and the rope $a^4$, running through the pulley $a^5$, in combination with the trap-doors L and the safety-gates D, said windlass being connected with said trap-doors and with said safety-gates by means of the main rope $c$ and branch ropes $c'$ and the main rope $d$ and branch ropes $d'$, respectively, constructed and arranged substantially as described and shown, and for the purpose set forth.

FRANKLIN O. KITTREDGE.

Witnesses:

FRANCIS M. BOUTWELL,

GEORGE W. RUSSELL.