(No Model.) 2 Sheets—Sheet 1.

F. O. KITTREDGE.

DEVICE FOR OPERATING ELEVATOR HATCHWAY GATES.

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

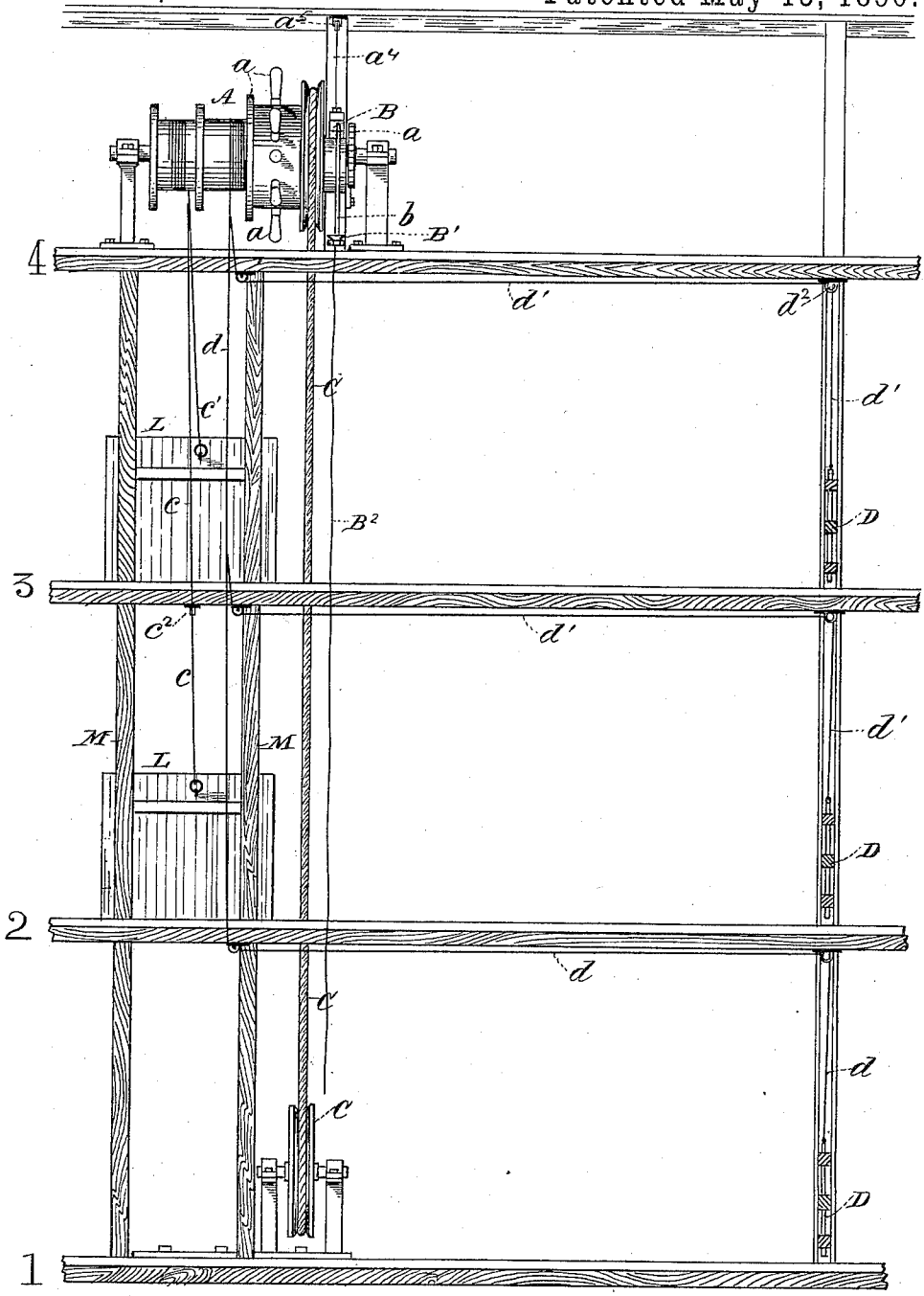

Fig. 1.

Witnesses.
Francis M. Gutteridge.
George W. Russell

Inventor.
Franklin O. Kittredge

(No Model.) 2 Sheets—Sheet 2.

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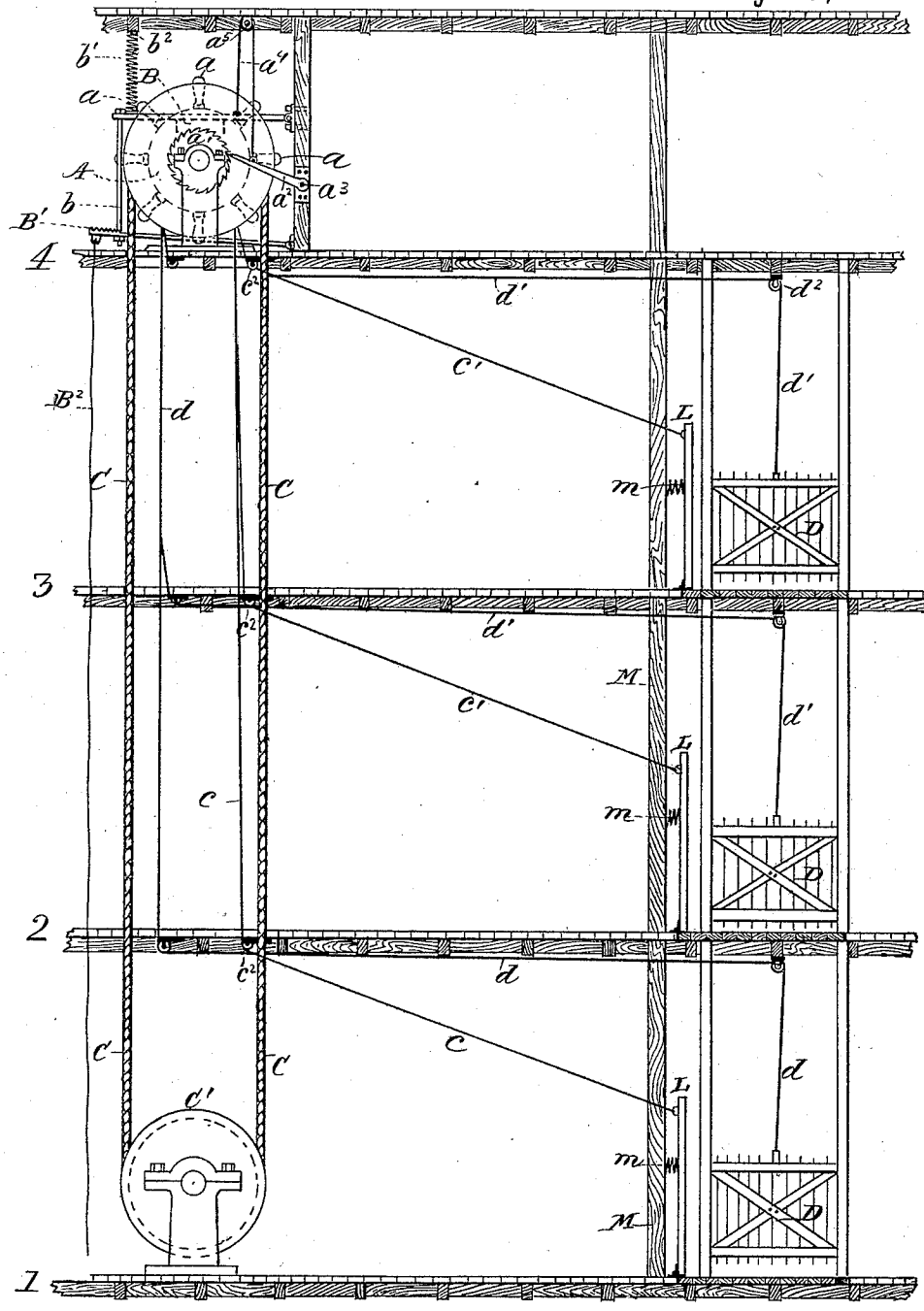

Fig. 2.

Witnesses.
Francis M. Barbeau.
George W. Russell

Inventor.
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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^3 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.