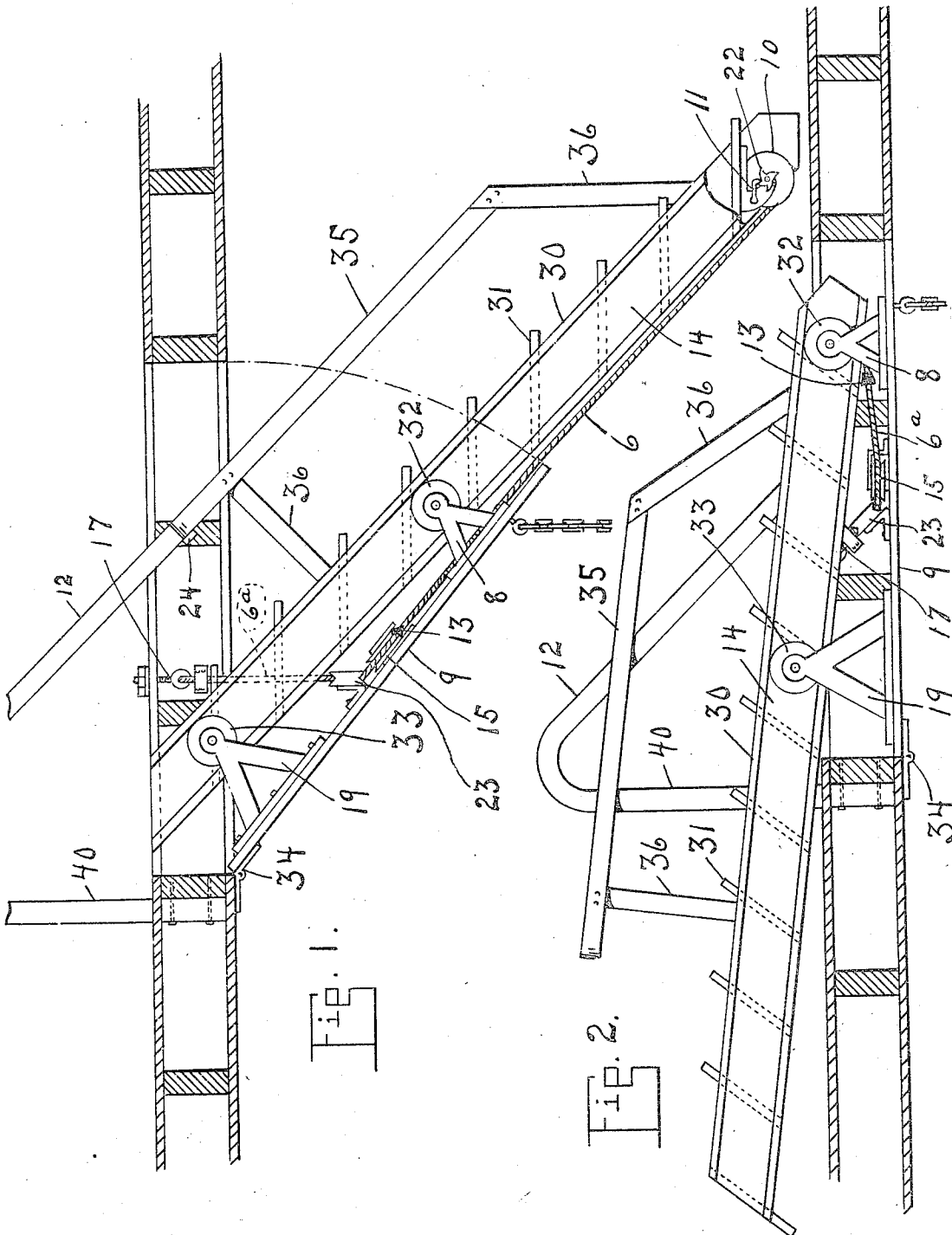


1,052,613.



Witnesses
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MOVABLE STAIRWAY.

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1,052,613.

Patented Feb. 11, 1913.

2 SHEETS—SHEET 2.

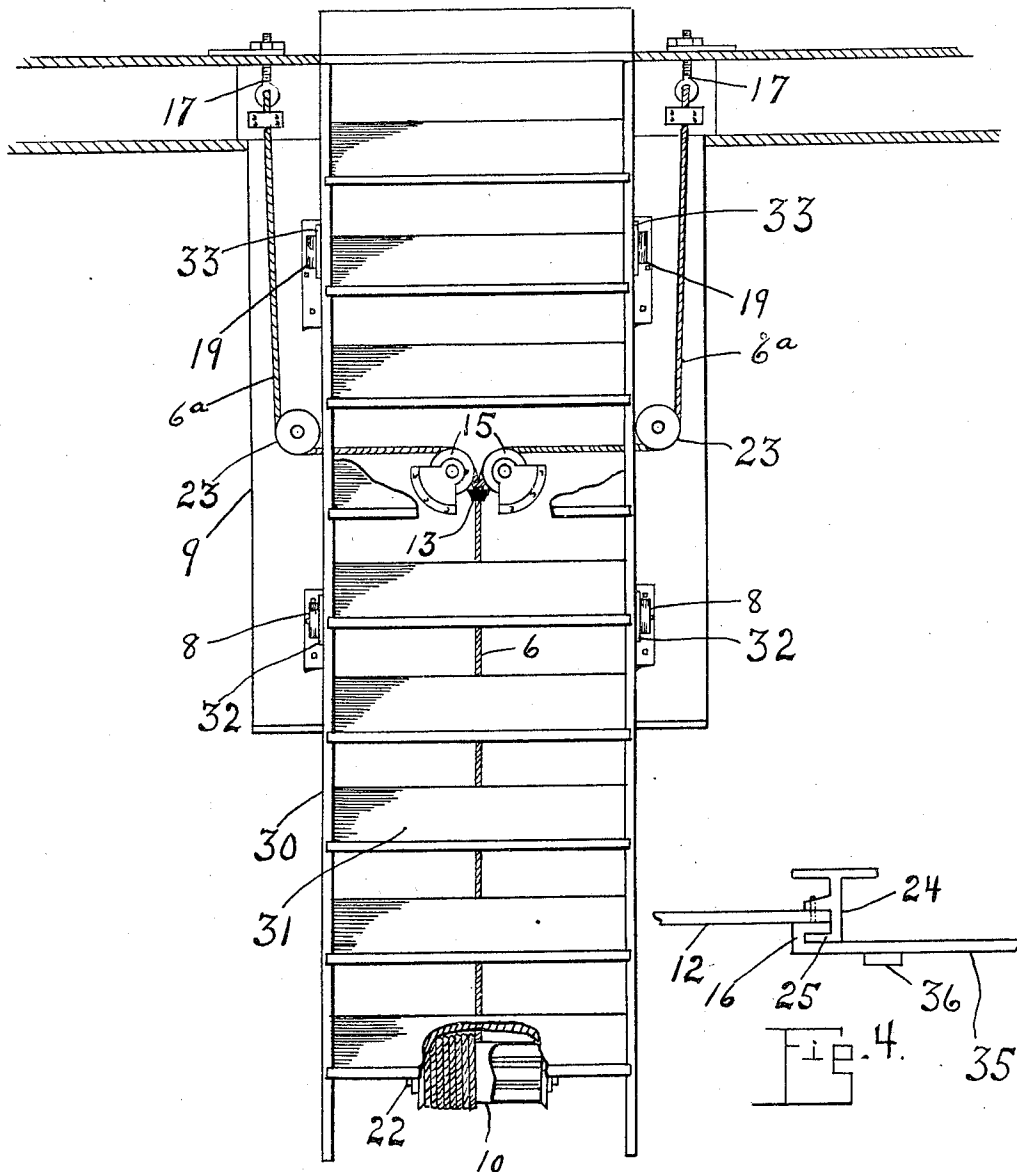


Fig. 3.

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UNITED STATES PATENT OFFICE.

JOHN MOTZNIK AND RUDOLF D. MOTZNIK, OF CUYAHOGA FALLS, OHIO.

MOVABLE STAIRWAY.

1,052,613.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed March 30, 1912. Serial No. 687,513.

To all whom it may concern:

Be it known that we, JOHN MOTZNIK and RUDOLF D. MOTZNIK, citizens of the United States, residing at Cuyahoga Falls, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Movable Stairways, of which the following is a specification.

This invention relates to movable stairways, and particularly to stairways adapted for use in attics and cellars, so that it can be lowered or raised on occasion, in connection with a panel or trap door which when the stairway is raised forms part of the ceiling and acts to close the stairway or opening in the floor.

The invention is illustrated in the accompanying drawings in which—

Figure 1 is a side view of the stairway when lowered. Fig. 2 is a similar view of the same when raised. Fig. 3 is a front view, parts being broken away. Fig. 4 is a detail of the hand rail.

Referring specifically to the drawings, stairs or a ladder is shown comprising stiles 30 and treads 31. The outer sides of the stiles are grooved or recessed lengthwise as indicated at 14, to receive rollers 32 and 33, the former being carried by brackets 8 and the latter by brackets 19, said brackets being secured to the panel 9 which is hinged at 34 to a floor joist at one end of the opening in the floor. The panel 9 is of proper size and shape to fit in said opening and close the same when the stairs are raised. The rollers 32 and 33 travel in the grooves 14 to hold the stairs in proper position and to connect the same to the panel, permitting the stairs to be run up or down lengthwise with respect to the panel.

A hand rail is provided consisting of a section 35 supported by standards 36 on one of the stiles and an upper section 12 which is attached to a post 40 on the floor, and to a fixture 24 fastened to one of the joists in the opening. Said fixture has at the outer end a hook 25 which is in proper position to be engaged by a hook 16 at the upper end of the rail 35, when the stairs are lowered, thereby forming a continuous hand rail the full length of the stairs. The brackets 19, near the hinged end of the panel, are higher than the brackets 8, so that when the stairs are swung up the upper end thereof will be raised above the adjacent level of the floor,

as shown in Fig. 2, in order that the head of the stairs may pass above the floor.

One end of a rope 6 is fastened to a spring roller 10 supported by brackets on the underside of the lowest tread 31, and said rope has branches 6^a each of which passes over guide pulleys 15 and 23 attached to the panel, thence to connection to an eye bolt 17 depending from the floor. A stop or button 13 on the rope, limits the drop of the stairs by striking the pulleys 15. The tension of the spring in the roller 10 may be adjusted and held at adjustment by the pawl 11 and ratchet 22, the purpose and intent being to counter-balance the weight of the stairs and panel so that they may be raised or lowered without much exertion. In operating the device when the stairs are pulled down the rope 6 unwinds from the roller, and when the stairs are pushed up the rope is wound thereon.

In raising the stairs, they are first pushed or run up on the rollers 32 and 33, until the lower end will clear the opening, after which the stairs and panel are swung up to the position shown in Fig. 2, with the panel flush with the ceiling. When the stairs are lowered the reverse action is effected. The ropes sustain the weight of the stairs and panel and permit the former to be used as desired.

What we claim as new is:

1. In a movable stairway, the combination of a set of stairs, a ceiling panel hinged to the floor containing the stairway opening, a winding device carried by the stairs, supports on the panel, for the stairs, a pulley attached to the panel, and a cable passing over said pulley and attached at one end to said winding device and at the other end to said floor.

2. In a movable stairway, the combination of a ceiling panel hinged in the stairway opening, supports on said panel, a set of stairs slidable up and down on said supports, a winding device at the foot of the stairs, a pulley attached to the panel, and a cable fixed at its upper end and attached to said device at its lower end and passing intermediately over the pulley.

3. In a movable stairway, the combination of a ceiling panel hinged in the stairway opening, a set of stairs supported by and slidable up and down with respect to said panel, a winding device at the foot of the

stairs, pulleys attached to the panel, and a cable fixed at its lower end to said winding device and having branches extending around said pulleys respectively and fastened to the floor containing said opening.

- 5 4. In a movable stairway, the combination of a set of stairs, a panel hinged in the stairway opening, supports on said panel, on which the stairs are slidable up and down, 10 the supports being of sufficient height to raise the head of the stairs above the floor containing said opening when the stairs are

swung up, and means attached to the floor and connected to the panel and also to the stairs to support the panel and stairs in 15 adjusted position.

In testimony whereof, we do affix our signatures in presence of two witnesses.

JOHN MOTZNIK.
RUDOLF D. MOTZNIK.

Witnesses:

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