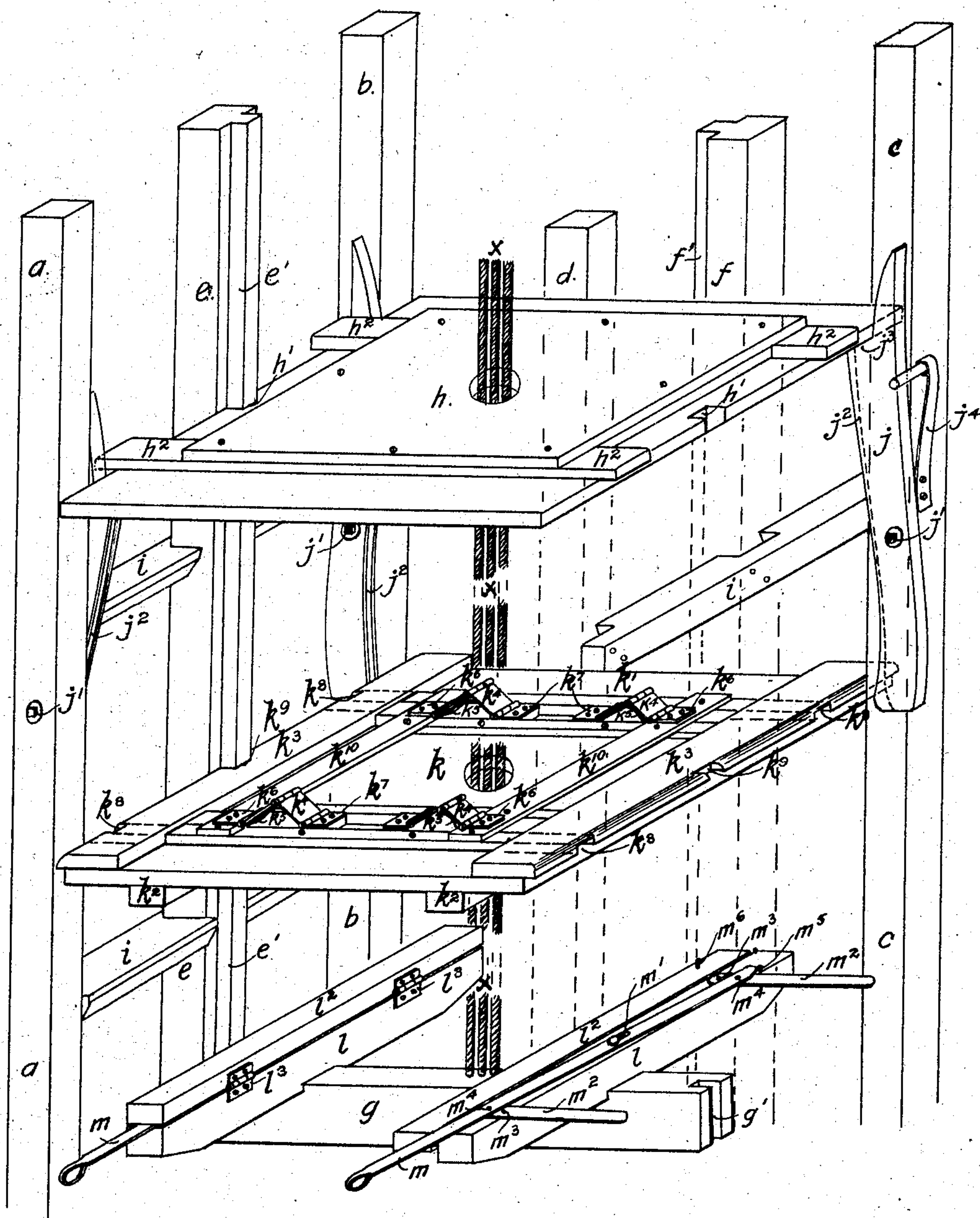


No. 781,477.

PATENTED JAN. 31, 1905.

T. WALKER.
AUTOMATIC ELEVATOR HATCH COVER.
APPLICATION FILED DEC. 29, 1903.



WITNESSES:

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AUTOMATIC ELEVATOR HATCH-COVER.

SPECIFICATION forming part of Letters Patent No. 781,477, dated January 31, 1905.

Application filed December 29, 1903. Serial No. 187,056.

To all whom it may concern:

Be it known that I, THOMAS WALKER, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Automatic Elevator Hatch-Covers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the automatic covering and uncovering, by means of hatch-covers, of the hatch or floor openings of an elevator-shaft to prevent accidents and the rapid spreading of fire.

The alternate arrangement of stationary shoulders extending over the sides of the hatch-covers and which are to rest on the cross-beams forming the hatch-openings is such that they will allow the passing of the hatch-covers belonging to openings below. As such an arrangement of extended shoulders is limited, some of the hatch-covers may be provided with counteracting hinges, which when released of the weight of the other hatch-covers resting thereon will push out latched shoulders over the sides of the hatch-covers for resting on the cross-beams forming the hatch-openings. When not in use, the hatch-covers are stowed away by the elevator-car in consecutive order near the ceiling of the elevator-shaft, where they rest on the shoulders of pivoted supports. To relieve the hatch-covers ready for use, the shoulder parts of the said supports are pushed back by adjustable lever-arms extending over two opposite sides of the ascending elevator-car, and after the car has freed the hatch-covers from their pressure on the shoulders of the supports by lifting them off and placing them on its top then the elevator-car can descend again, carrying the hatch-covers and distributing the same automatically over their respective hatchways. I attain these objects by the mechanism illustrated in the accompanying isometric drawing, wherein similar letters refer to similar parts. The corner-posts *a b c d* and the intermediate guide-posts *e f* constitute the framework of the elevator-shaft, whereas

cross guide-bar *g*, with the lever-boxes *l l* fastened thereto, shows the top part of the elevator-car, with cable *x*, traveling in the elevator-shaft.

h represents one of the hatch-covers provided with extending stationary shoulders *h²* for resting on hatch-opening beams *i i* and fastened, as shown, onto the platform of *h*, which has notches *h'* to receive and slide on the tongues *e'* and *f'* of the guide-posts *e* and *f*. All the hatch-covers can be stowed away in the top part of the elevator-shaft, where they rest on the shoulders *j³* of the turnable supports *j*, which are pivoted with their sides to the insides of the corner-posts *a b c d* at *j'* and held in the position required by the springs *j⁴*. The inner edges of the supports *j* are provided with grooves *j²*, referred to hereinafter.

The hatch-cover *k*, having laced shoulders *k³*, is constructed as follows: Two latch-shoulders *k³* can be made to move back and forward, so they will overlap the sides of hatch-cover *k*, that they may rest on cross-pieces *i i*, by means of the counteracting hinges *k⁴*, fastened at *k⁷* to slides and at *k⁶* to stationary cross-piece *k¹⁰*, *k⁸* serving as a guide for shoulders *k³*. The drawing shows the latch-shoulder *k³* extended over hatch-cover *k*, ready to rest on cross-piece *i i*, and shows notch *k⁹*, which receives the tongues *e'* and *f'* of guide-posts *e* and *f*. When the hatch-covers *h* rest on hatch-covers *k*, the counteracting hinges *k⁴* are pressed down by that weight and shoulders *k³* are drawn back to be flush with the edges of hatch-cover *k*; but when all the hatch-covers *h* have been distributed and the hinges *k⁴* are thus relieved of any weight thereon the springs *k⁵* raise them, and thereby force the shoulders *k³* out from the edges of said covers *k*, ready to rest on the hatch-opening cross-pieces *i i*, their notches *k⁹* engaging the tongues *e' f'* in the same manner as shoulders *h²* of hatch-covers *h* rest on their cross-pieces *i i*. The covers *h* have notches *h'*, which engage the tongues *e'* and *f'*. The cross-piece *g* being notched out at *g'* to slide on guide-posts *e* and *f* forms the top guide-bar of the elevator-car, whereto the cable *x* is fastened. This guide-bar *g* has two lever-boxes *l l* securely attached

to it at right angles, which lever-boxes ll contain the levers m , provided with operating-lever-arms m^2 . In the drawing the right-hand lever-box l is opened, showing the lever m with its two operating-arms m^2 thrown out and extended over the sides of the elevator-car, ready for operation. The lever m is pivoted in the middle part of the bottom piece of box l , allowed to slide on its slot m' for a longitudinal movement, whereby and by the side movement the operating-arms m^2 , being properly pivoted at m^3 and m^4 , are extended for operation or drawn back. This lever mechanism is securely held in place by the cover l^2 , hinged to bottom piece l at l^3 , and by dowel-pin m^6 , entering at m^5 . This dowel-pin m^6 is also used when cover l^2 is closed to check the forward movement of the lever m . When the elevator-car is ascending to lift the hatch-covers k and h off of the shoulders j^3 of supports j , the lever-boxes ll will strike the cross-pieces k^2 of the hatch-cover k , raising said cover, and with it the hatch-cover h , the same resting firmly on the top of the elevator-car, while the extended lever-arms m^2 will strike the supports j , traveling in grooves j^2 , as previously referred to, thus turning and holding the supports j back on their pivots j' until the hatch-covers k and h , now loaded on the elevator-car, have passed while descending to be distributed over their respective hatchways, when springs j^4 press the supports j back into their receiving position. If it is desired to clear the hatchways of their hatch-covers k and h , the lever-arms m^2 are drawn back and the elevator-car ascends, slowly lifting the hatch-covers k and h one after the other off of the cross-pieces i , where they have been resting, and while pressing the supports j back with their sides the shoulders j^3 of supports j are pushed in under the last of the hatch-covers by means of springs j^4 as soon as the edge of shoulder j^3 has been passed.

Now the above specification shows that by sending the elevator-car up in the elevator-shaft from any floor the hatch-covers can be taken off of the supports automatically and distributed consecutively over the different hatch-openings, and in the same manner the hatch-covers are removed off of the hatch-

openings and replaced on the shoulders of the supports, and then the elevator-car comes down again to the lower floor.

I am aware that prior to my invention hatch-covers for hatchways in elevator-shafts have been made. I therefore do not claim such a combination broadly; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with an elevator-shaft, of a guide-bar of a car, a hatch-cover adapted to be carried by said guide-bar, arranged in the upper part of the elevator-shaft, adapted to engage and retain said cover, pivoted arms arranged in the upper part of the shaft, having grooves on one side, and levers, carried by said guide-bar, having their ends adapted to engage and slide in said grooves to disengage said cover from said arms.

2. The combination, with an elevator-shaft, of a guide-bar of a car, a hatch-cover adapted to be carried by said guide-bar, spring-pressed arms, arranged in the upper part of the elevator-shaft, adapted to engage and retain said cover, said arms having grooves on one side, and levers carried by said guide-bar, having their ends adapted to engage and slide in said grooves to disengage said cover from said arms.

3. The combination, of an elevator-shaft, a hatch-cover having laterally-projecting and slidably-movable strips adapted to engage ledges in the shaft, and means for retracting said strips to permit the movement of said cover.

4. The combination with an elevator-shaft, of a hatch-cover, having lateral projecting strips, said strips having secured thereto blocks adapted to slide in grooves in the cover, hinge connection between said blocks and cover, and springs normally holding said hinges in such position that said shoulders will be extended.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS WALKER.

Witnesses:

GEORGE LANGFORD,
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