

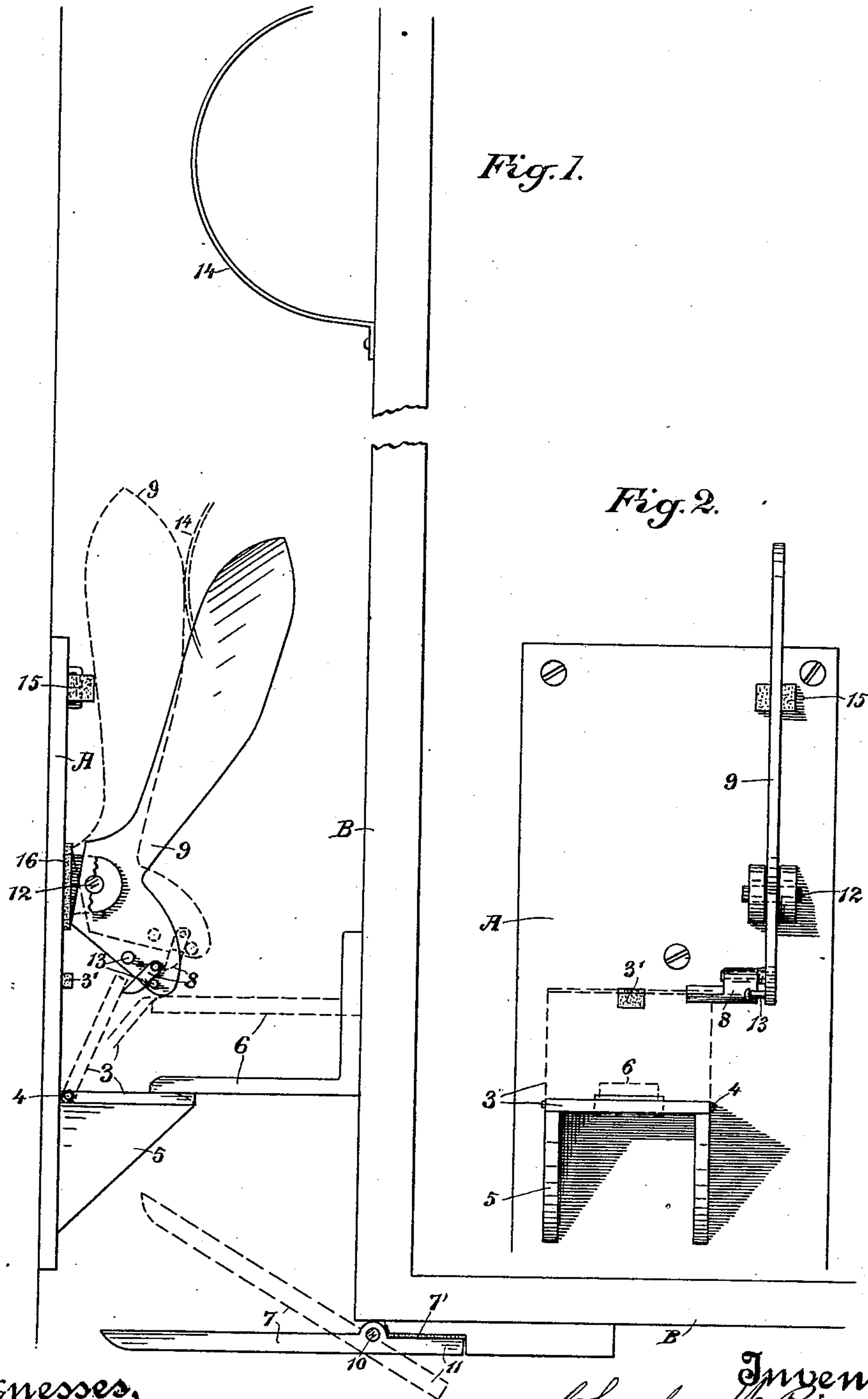
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C. W. PIERCE & A. McMAHON.
AUTOMATIC DUMB WAITER STOP.

(Application filed Dec. 13, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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AUTOMATIC DUMB-WAITER STOP.

SPECIFICATION forming part of Letters Patent No. 669,266, dated March 5, 1901.

Application filed December 13, 1900. Serial No. 39,624. (No model.)

To all whom it may concern:

Be it known that we, CHARLES W. PIERCE and ARTHUR McMAHON, citizens of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Automatic Dumb-Waiter Stops; and we hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to improvements in automatic stop devices for dumb-waiters or elevators.

It consists, essentially, of a hinged rest upon the wall of the well in which the cage travels, a cam-lever carrying a pawl or catcher by which the rest is engaged when lifted, a step upon the cage adapted to lift the rest in the upward travel of the cage and by which the cage is supported upon the rest, a pivoted projecting member upon the cage below the step which lifts the rest into engagement with the pawl in the upward movement of the cage and out of the way of the step in the downward movement of the cage, a shoe upon the cage above the step which engages the cam-lever in the descent of the cage and releases the rest, and of details more fully explained in the following specification and accompanying drawings and pointed out in the accompanying claims.

Figure 1 shows the lower portion of a cage and the stopping device in the side of the well. Fig. 2 is a face view of the stopping device.

The object of our invention is to furnish a simple, satisfactory, noiseless, and self-regulating means by which a dumb-waiter or elevator running from floor to floor of a building can not only be stopped and securely held at any desired landing, but may freely descend without interruption from the stops or rests upon which the cage is supported at any of these landings.

Having reference to the drawings, A is a base-plate fastened upon the wall of the well in which the dumb-waiter B runs. The dumb-waiter or cage is carried by a rope or cable, as usual.

3 is a rest or stop hinged at 4 and supported upon the brackets 5, secured to the plate A. A rubber cushion 3' prevents the stop strik-

ing noisily against the plate A and also prevents its resting against the plate.

Upon the cage is a projection or step 6, which engages the stop 3 in the following manner: As the cage rises the step simply strikes on the under side of the stop, lifts the latter, which falls back again as soon as out of contact with the step, and forms a rest upon which the cage is supported. However, as the cage is to descend some means must be provided by which this stop can automatically be released. To effect this and to permit the ascent and descent and stopping of the cage at will, we have provided a hinged lifter 7 upon the cage, by which the stop is raised and engaged by a pawl or catcher 8 upon a cam-lever or trigger 9. This lifter is secured below and in line with the step 6 and has its end projecting a little beyond the end of the step in order that the stop may be lifted high enough as surely to be engaged by the pawl. The lifter is hinged at 10 and has a rearward extension 11, which prevents the lifter swinging below a horizontal line, while at the same time it is allowed to swing upward in order on the descent of the cage to ride over the stop if the latter should be down. A rubber cushion 7' deadens the sound caused by the dropping of the lifter. The lever or trigger 9 is fulcrumed on the plate A, as at 12. Its longer arm forms a cam portion, and on its shorter arm is the pawl 8, whose swinging movement is limited by the pins 13. Cushions of rubber or other resilient material are placed at 15 and 16, by which the concussion of the respective arms upon the base-plate is relieved. As the cage ascends the step merely lifts the stop, which drops back again in horizontal position on the bracket as soon as the step leaves it. The lifter, however, next hits the stop and raises the latter, so that it is caught by the pawl, where it is held till the descent of the cage, when a projection or shoe 14 strikes the cam-arm of the trigger, lifts the latter, and releases the stop from the pawl. Thus the movement of the cage automatically controls the position and operation of the stop. It is also of great advantage to have a cage run as noiselessly as possible. Except where the face of the stop strikes and rests upon the

bracket we have, as shown, provided rubber buffers in all cases where the striking of the metal parts would cause annoyance.

As some sort of a signal is necessary to tell of the approach of a cage to a landing the click caused by the falling of the stop against the bracket serves in lieu of means—as, for example, an electric bell, &c.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In an elevator stop device, the combination of a horizontal rest or stop upon the frame in which the elevator runs and hinged so that it may be swung upwardly; a support by which the rest or stop is prevented from swinging below a horizontal line; a cage, and a projection thereon for engaging the rest or stop whereby the cage is supported; means carried by the cage for elevating the rest or stop out of the path of movement of the cage; means for holding the rest or stop elevated; and means for releasing the rest or stop from its elevated position.

2. In an elevator stop device, the combination of a movable horizontal rest or stop in the elevator-shaft; a support for said rest or stop; a cage; a projection on the cage adapted to rest upon said support; means carried by the cage for removing the rest or stop out of the direct line of movement of the cage; means for holding the rest or stop thus inactive, and means for releasing the rest or stop to allow it to return to normal position.

3. In an elevator stop device, the combination of a hinged rest or stop upon the wall of the well or frame in which the cage runs, a support for the rest or stop adapted to sustain the latter in a horizontal position, a cage and a step upon the same by which the rest or stop may be lifted from its horizontal position on the support, means carried by the cage by which the rest or stop may be further lifted, and means by which it is held, when thus lifted, out of the way of the step when the cage is descending.

4. In an elevator stop device, a hinged rest or stop upon the wall of the well in which the cage runs, means by which this stop is supported at right angles to the wall, said stop so hinged as to swing upwardly against the said wall, a step upon the cage by which the stop may be lifted and by which the cage is supported upon the stop, a projection upon the cage below and in line with the step by which the stop is raised and means by which the stop is engaged when thus raised, and

means by which the stop may be automatically released.

5. In an elevator stop device, a hinged rest or stop upon the wall of the frame in which the elevator runs, said stop capable of swinging upwardly toward the wall, means by which it is supported from swinging below the horizontal, a step upon the cage by which this stop is lifted and by which the cage is supported upon the stop, a hinged projection or lifter upon the cage and below the step, said lifter capable of swinging upwardly, but prevented from swinging below the horizontal, and a pawl or catcher, said lifter adapted to raise the stop into engagement with said pawl or catcher, and means by which the stop may be released from this catcher.

6. In an elevator stop device, a hinged rest or stop upon and supported at right angles to the wall of the frame in which the cage travels, means upon the cage by which this stop is lifted and by which the cage is supported upon this stop, a lever secured upon the wall of said frame, a pawl or catcher upon the shorter arm of said lever by which the stop is engaged when lifted, means upon the cage for lifting the stop thus into engagement with the catcher, the other arm of the lever forming a cam portion and means upon the cage by which this cam-arm is engaged and the stop released from the catcher.

7. The combination in an elevator or dumb-waiter, of a hinged rest or stop upon and supported at right angles to the wall of the well or frame in which the cage of the elevator runs, a step upon the cage engaging the stop, and by which the cage is supported upon the stop, a hinged projection or lifter upon the cage and in line with and below the step, a lever upon the wall of the well, a pawl or catcher upon the shorter arm of the lever by which the stop is engaged when raised by said lifter, the other arm of said lever forming a cam portion which is engaged by a projection or shoe upon the traveling cage, and by which means the stop is released from the catcher, and cushions by which the noise caused by the striking of these various parts in the machine may be obviated.

In witness whereof we have hereunto set our hands.

CHARLES W. PIERCE.
ARTHUR McMAHON.

Witnesses:

PETER F. DEVINE,
MARY A. McMAHON.