

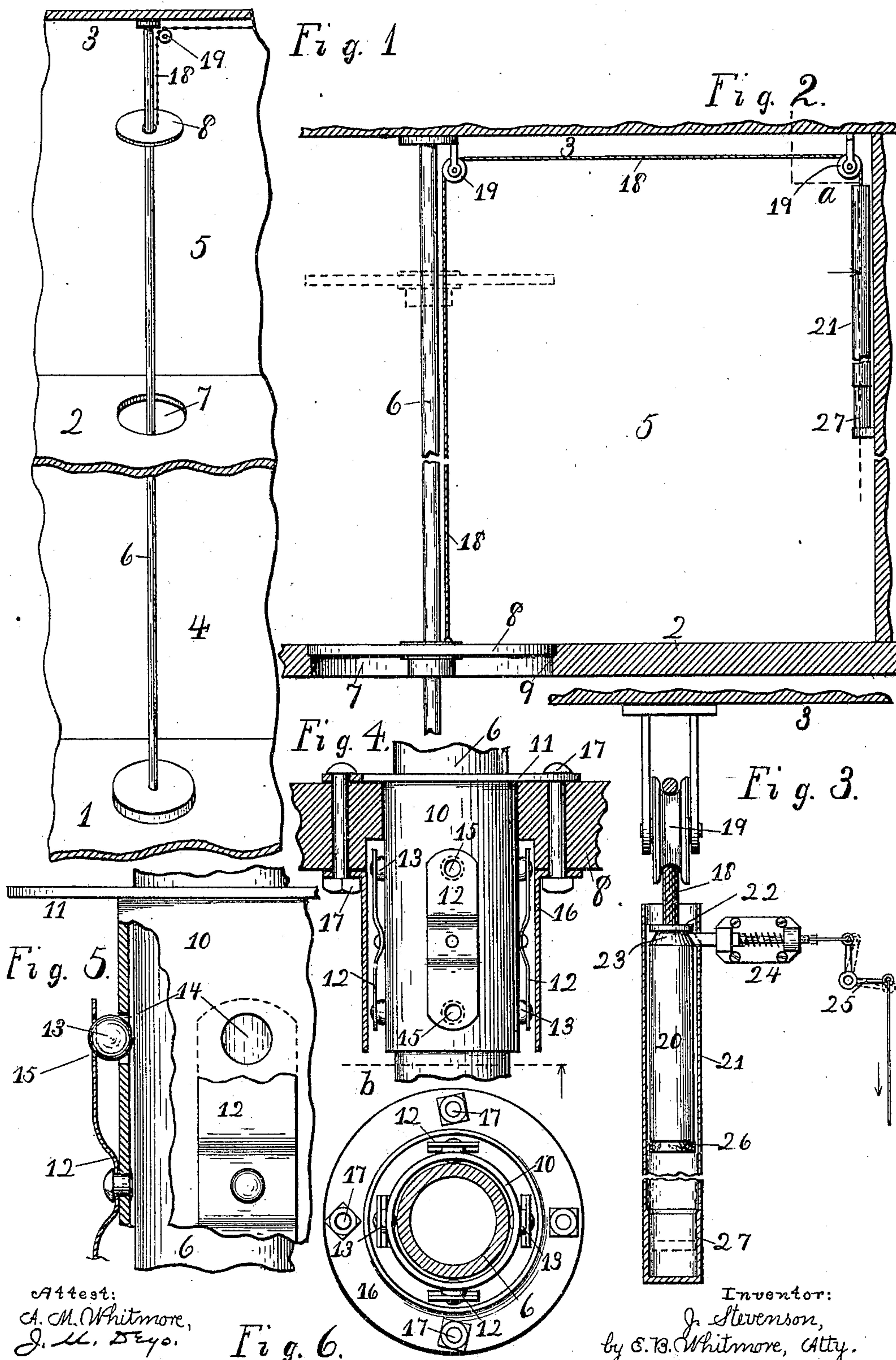
No. 837,007.

PATENTED NOV. 27, 1906.

J. STEVENSON.

MEANS FOR CLOSING SLIDING POLE HOLES.

APPLICATION FILED JULY 12, 1906.



UNITED STATES PATENT OFFICE.

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MEANS FOR CLOSING SLIDING-POLE HOLES.

No. 837,007.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed July 12, 1906. Serial No. 325,898.

To all whom it may concern:

Be it known that I, JOHN STEVENSON, of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Means for Closing Sliding-Pole Holes, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

In houses or buildings where fire-engines and other fire-extinguishing apparatus are kept, and where firemen lodge in the upper rooms, holes are made in the floors through which vertical poles are erected, reaching from the floor of a lower main room to the ceiling or upper part of the room overhead. These holes are usually circular, each being a yard more or less in diameter and concentric with the pole passing through it, these poles—termed “sliding poles”—being provided for the ready and quick descent of the firemen in the loft to the main floor below in case of an alarm of fire being sounded.

My invention relates to these matters, (this construction;) and the object of the invention, among others, is to provide a simple and convenient means for covering or closing the sliding-pole hole and for automatically uncovering it by means including the electrical apparatus usually employed to release the trip for unlocking the doors, sounding the gong, &c.

The manner of use and the advantages of the invention will be brought out and made to appear in the following description, reference being had to the accompanying drawings, which, with the reference-numerals marked thereon, form a part of this specification.

Figure 1 is a perspective showing some of the main features relatively in place. Fig. 2 is a side elevation, the section being along a vertical plane common with the axis of the pole, parts being broken out and other parts shown in two positions by full and dotted lines. Fig. 3 is an elevation of parts, showing the weight with inclosing tube and other associated parts detached, the section being on the vertical broken dotted line *a* in Fig. 2, parts being shown in two positions by full and dotted lines. Fig. 4 is a side elevation of parts associated with the cover, parts being in vertical diametrical section. Fig. 5 is an elevation of parts similar to Fig. 4, parts

being in central longitudinal section to fully show a bearing-ball, parts being broken away. Fig. 6 is a view of parts from beneath, (indicated by arrow in Fig. 4,) the pole being transversely sectioned, as at the dotted line *b*. Figs. 3 to 6, inclusive, are drawn to scales larger than those of Figs. 1 and 2.

Referring to the parts shown in the drawings, 1, 2, and 3 are respectively the first floor, the second floor, and the ceiling of an engine-house, 4 being the main room, and 5 the loft.

6 is a sliding-pole, commonly of tubular iron, passing vertically through the middle of a circular hole 7, Figs. 1 and 2, through the second floor 2, and secured by ordinary means at its ends, respectively, to the main floor 1 and the ceiling 3.

8, Figs. 1, 2, and 3, is a circular disk of wood or sheet metal to cover or close the aperture 7, being preferably constructed to rest upon an annular shoulder 9 of said opening, the upper face of the disk when in place being in the plane of the floor, as appears in Fig. 2.

The disk or cover 8 is pierced at its center to receive the pole 6 and provided with a concentric vertical cylindrical sleeve 10, Figs. 4, 5, and 6, of a diameter such as to move freely along the pole and provided at its upper end with a flange 11 to rest upon the cover, as shown. Upon the outer surface of the sleeve 10 are a series of longitudinal springs 12, secured at the middle, with the extended ends pressing bearing-balls 13 against the sliding-pole, as clearly shown in Fig. 5, to give the disk a rolling motion along the pole. Openings 14 are formed through the sleeve, as shown, to make way for the balls and permit them to come in contact with the pole, there being also small circular orifices 15 in the springs in which to receive the respective balls and hold them steadily to place against the pole. Outside of the springs and the bearing-balls is placed an inclosing thimble 16, formed with a flange to meet the under surface of the cover 8, fastening-bolts 17, Figs. 4 and 5, passing through both flanges and the cover, hold all parts in place.

To the upper surface of the cover 8 is secured a chain, cord, or cable 18, Figs. 1, 2,

and 3, for lifting the cover, the cable passing over pulleys 19, suspended from the ceiling. The extreme end of the cable is attached to an elongated weight 20, Fig. 3, incased in an inclosing-tube 21, disposed vertically at the side of the room 5 or against some convenient vertical object. This weight overbalances the weight of the cover, so that when left to act freely it will quickly raise the cover to the position shown in full lines in Fig. 1 and in dotted lines in Fig. 2, opening the passage or aperture 7 for the speedy descent of the firemen, as above stated. The weight is formed at its upper end with a head 22, Fig. 3, above a circular groove 23, some suitable spring-actuated catch-bolt 24 of common kind being provided to catch under the head, as clearly shown. This catch-bolt is secured outside of the tube 21 to act horizontally, the point of the bolt proper piercing the side of the tube to enter the groove 23 of the weight.

Fig. 3 shows the weight at the top of the tube 21, the cover 8 being correspondingly in place in the floor 2, closing the opening 7 therein, the weight being normally held by the catch-bolt. A bell-crank 25, connected with the electrical apparatus in the engine-house that releases the trip, acts to withdraw the catch-bolt and release the weight to instantly lift the cover and make way for the firemen to descend, as stated. The lower end of the weight is provided with a fibrous or soft yielding pad or body 26, and the bottom portion of the tube 21 is contracted at 27, so that when the weight descends after being released it will be cushioned and stopped without violence. The yielding part 26, while moving freely along within the upper or larger portion of the tube when entering the reduced part 27, fits substantially air-tight and so cushions the weight against the air compressed beneath.

The construction is such that the disk or cover 8 when raised by the weight is above the heads of the occupants and out of the way, it being normally in place in the floor to render the latter continuous around the pole and prevent accidents and also to prevent upward drafts through the hole and the passage of dust upward from beneath.

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

1. A device of the character described having, in combination with an apertured floor and pole passing therethrough, a disk slidable upon the pole adapted to cover the hole in the floor, a vertically-movable weight to control the disk, a flexible element connect-

ing the disk and the weight, and means to hold and control the weight.

2. In a device of the character described, an apertured floor and a fixed pole occupying the aperture, a disk to close the aperture held to move upon the pole, a sleeve in the disk surrounding the pole, and means for giving the disk a rolling motion upon the pole.

3. In a device of the character described, an apertured floor and a pole occupying the aperture, a disk movable upon the pole and adapted to close the aperture, a perforated sleeve in the disk in position to encircle the pole, antifriction-balls carried by the sleeve, and means for holding the balls against the pole and for controlling the vertical motions of the disk.

4. In a device of the character described, a floor with hole therein and a vertical fixed pole passing through the center of the hole, a disk pierced by the pole adapted to close said hole in the floor, a sleeve in the disk coaxial with the pole and formed with a series of openings, a series of balls occupying said openings, a series of springs on the sleeve to press the balls against the pole, an inclosing thimble for the springs secured to the disk, and means for moving the disk longitudinally upon the pole.

5. In a device of the kind described, an apertured floor and pole passing there-through, a disk on the pole to close the aperture, a sleeve in the disk having perforations, a series of bearing-balls in the perforations, a series of springs on the sleeve to press the balls against the pole the springs having apertures to hold the balls, and means for moving the disk upon the pole.

6. In a device such as described, having an apertured floor and pole therein, a disk on the pole, a controlling-weight for the disk, cord connection for the disk and the weight, and a current-controlled catch-bolt to engage the weight.

7. In a device such as described, having an apertured floor and pole therein, a disk on the pole, a controlling-weight for the disk, cord connection for the disk and the weight, a confining tube with reduced end for the weight, the latter having a yielding part to enter the reduced part of the tube.

In witness whereof I have hereunto set my hand, this 9th day of July, 1906, in the presence of two subscribing witnesses.

JOHN STEVENSON.

Witnesses:

ENOS B. WHITMORE,
ADA M. WHITMORE.