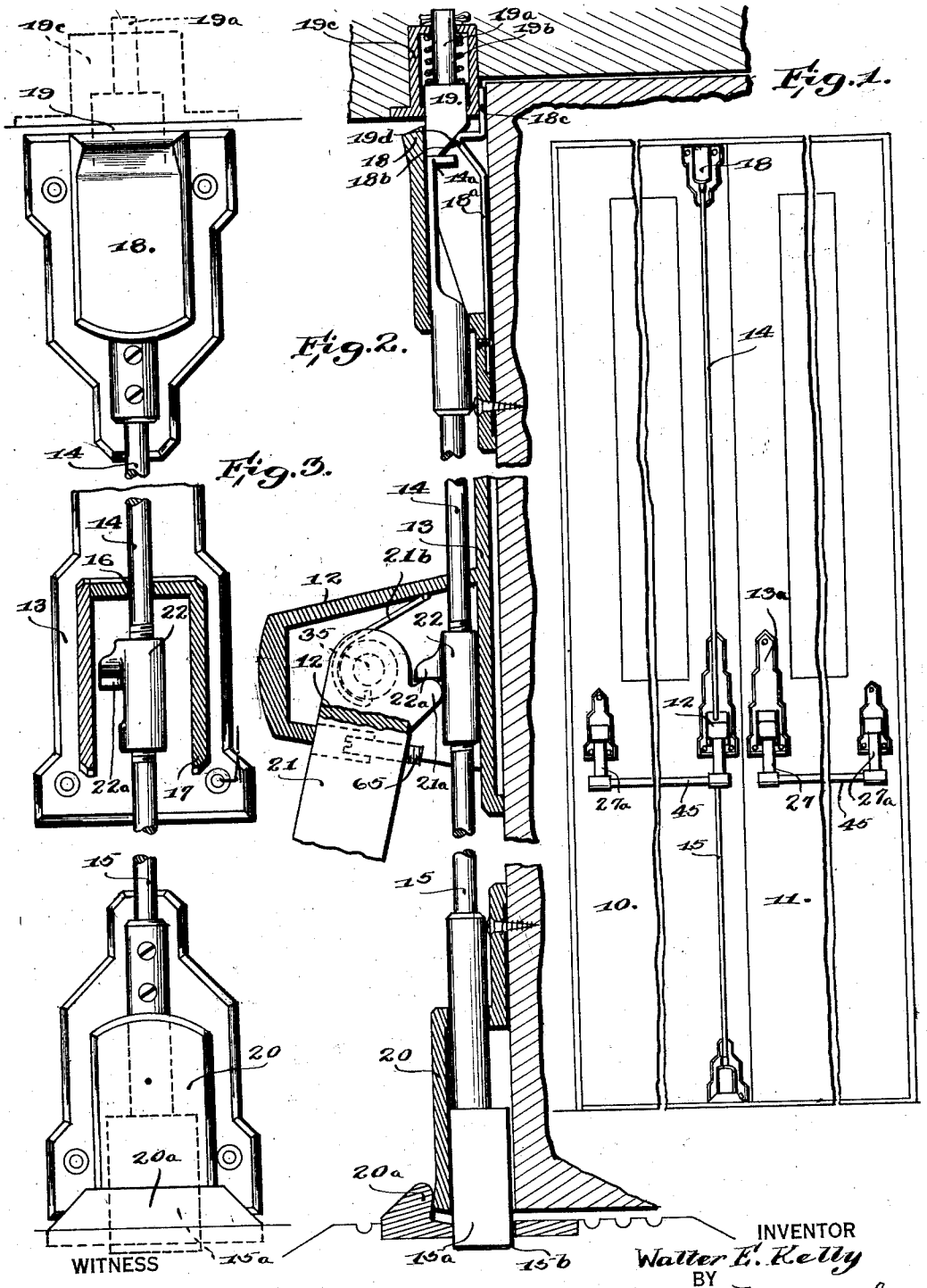
Feb. 9, 1932. W. E. KELLY 1,844,767

ATTACHMENT FOR DOORLOCKS

Filed Oct. 5, 1929 2 Sheets-Sheet 1



WITNESS

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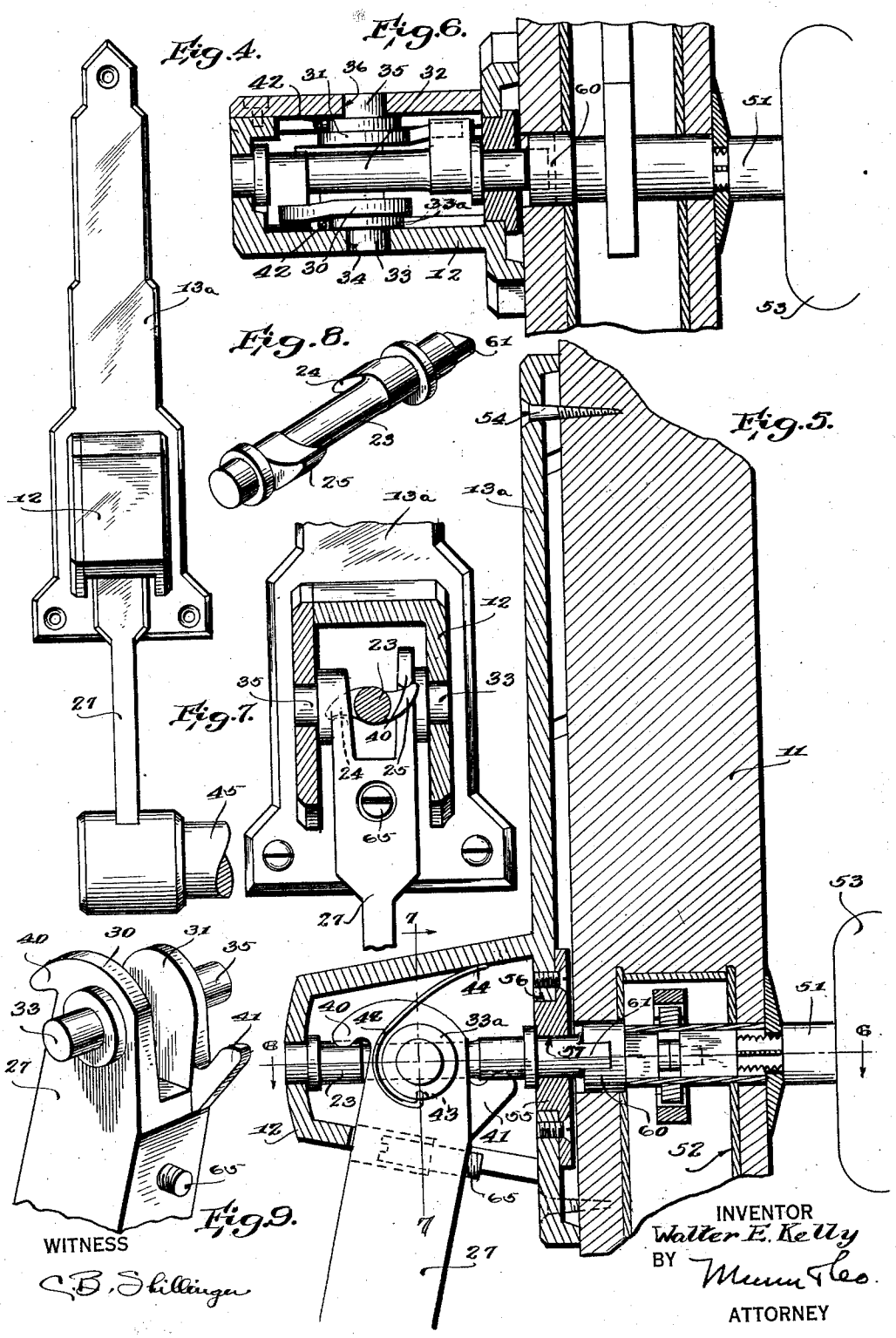
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UNITED STATES PATENT OFFICE

WALTER E. KELLY, OF PORTLAND, OREGON

ATTACHMENT FOR DOORLOCKS

Application filed October 5, 1929. Serial No. 397,630.

This invention relates to a panic bolt attachment for standard door locks.

An object of the invention is the provision of a bolt and operating means therefor commonly termed a panic bolt and operating means for the standing leaf of a pair of swinging doors, in which the operating means will operate the top and bottom bolts with the application of a very small force thereto with consequent reduction of noise and jar usually incident upon the operation of similar devices.

A further object of the invention is the provision of a panic bolt for the standing leaf of a pair of doors which is adapted upon the operation thereof to open position to maintain the bottom bolt in an upward position out of engagement with the floor, thereby eliminating the dragging of said lower bolt with consequent scraping of the floor.

A further object of the invention is the provision of an attachment for standard door locks in which a portion of the spindle is removed and a specially constructed spindle attached thereto without necessitating any changes in the standard equipment of the lock, the attachment including an auxiliary spindle having cams adapted to engage fingers on a swingably supported lever so that when the lever is operated by the usual panic bar the auxiliary spindle and the standard spindle will be rocked for releasing the usual bolt from its keeper.

A further object of the invention is the provision of a panic bolt attachment for standard door locks in which an auxiliary spindle is provided and which is constructed for ready attachment to the standard spindle of the door lock and provided with cams or similar elements adapted to be engaged by fingers or lugs projecting from opposite sides of the swingably mounted lever, the axis on which the lever swings being in the same horizontal plane with the axis of the auxiliary spindle so that when the usual panic bar is moved to rock the lever the auxiliary spindle and likewise the standard spindle of the door lock will release the bolt from its keeper, a spring being employed for returning the auxiliary spindle and likewise the spindle of the lock to its normal inoperative position.

This invention will be best understood from a consideration of the following detailed description, in view of the accompanying drawings forming a part of the specification; nevertheless it is to be understood that the invention is not confined to the disclosure, being susceptible of such changes and modifications which shall define no material departure from the salient features of the invention as expressed in the appended claim.

In the drawings:

Figure 1 is a view in elevation of a door showing my panic bolt attachment applied thereto;

Figure 2 is a vertical section showing my panic bolt attachment applied to the door in Figure 1;

Figure 3 is a front view in elevation partly in section of the panic bolt attachment shown in Figure 2;

Figure 4 is a detail view in elevation, showing the bracket or housing for the panic bolt attachment;

Figure 5 is a vertical section through a door equipped with the standard lock and door knob, showing my panic bolt attachment applied thereto;

Figure 6 is a horizontal section, taken along the line 6—6 of Figure 5;

Figure 7 is a vertical section, taken on the line 7—7 of Figure 5;

Figure 8 is a view in perspective of an auxiliary spindle; and

Figure 9 is an enlarged fragmentary view in perspective of a lever forming part of the panic bolt attachment.

Referring more particularly to the drawings, 10 and 11 designate a pair of doors. The door 10 is provided with a casing 12 mounted on a plate 13 which is secured to the door. Rods 14 and 15 extend, respectively, through a passage 16 in the casing 12 and through an opening 17 in the bottom of the casing. The rod 14 extends upwardly terminating in a trip member 14^a adapted to engage the latch member 19 provided with a spindle 19^a and positioned in the casing 19^c mounted in the

upper door jamb. This latch member 19 is normally urged downwardly by the spring 19^b. The trip member 14^a is guided in its operation in a casing member 18 positioned adjacent the top of the door. Comprised within this casing 18 is a pressure leaf spring 18^a providing the projecting portion 18^b adapted to engage the trip member 14^a in raised position and a portion 18^c adapted to engage the wall of the casing 19^c, all for a purpose soon to be described. The rod 15 extending downwardly is guided in the casing member 20 mounted adjacent the base or lower portion of the door. This rod 15 comprises at the end thereof the lower panic bolt member 15^a adapted for operation within the casing 20 and into and out of locking engagement with the slot 15^b provided in the sills, which is also provided with the striking plate 20^a for engagement with the casing member 20 for stopping the door at a desired position in a well known manner. Adjustably joining the rods 14 and 15 is the threaded collar 22 provided with a lug 22^a for the actuation of the rods 14 and 15 by the pivoted panic door operating lever 21 which is suitably journaled in the casing 12, as shown at 35, and provided with the actuating lug 21^a thereof for engagement with the lug 22^a on the adjustable sleeve 22. This panic operating lever 21 is provided with the adjustable bolt 65 adapted to engage the plate 13 for the purpose of limiting the movement of said lever 21, as will be easily understood.

The operation of this portion of my device from the foregoing description may be easily understood. Pressure exerted by an operator on panic bar 45 integrally connecting lever 27^a and lever 21 moves said lever 21 anti-clockwise from the position shown in Figure 2 and by means of the engaging lugs 21^a and 22^a raises the rods 14 and 15. This operation elevates the lower bolt 15^a to an inoperative position and forces the upper latch or bolt 19 which is mounted on the door jamb upwardly against the pressure of the spring 19^b until said member 19 clears the outer and upper end of casing member 18. At this point the door swings outwardly permitting the leaf spring member 18^a to swing outwardly from the door and engage the trip member 14^a, thereby securing the rods 14 and 15 in elevated position during the swinging or opening movement of the door. The rods 14 and 15 are maintained in the upper position by this leaf spring 18^a as long as the door is open thereby preventing the lower bolt 15^a from scraping or otherwise contacting the floor. When the door has swung shut the portion 18^c of the leaf spring 18^a engages the casing 19^c and is forced backwardly into close engagement with the door as appears in Figure 2. Prior to this movement the shoulder 19^d of the upper latch or bolt 19 has engaged with the upper end of casing member 18 and been elevated to a position sufficient to clear said casing. When the door closes the latch or bolt member 19 assumes its position as shown in Figure 2 and the leaf spring trip engaging member 18^a having been forced backwardly in engagement with the door releases the trip 14^a for automatic repositioning as shown in said Figure 2. The spring 21^b throws the panic bar back into inoperative position.

Referring particularly to Figures 4 to 9 inclusive I have provided panic bar means for releasing the swinging door of a pair of doors at the same time permitting the usual release thereof by the conventional knob on the outside. In this part of the device the housing 12 similar to the housing 12 of Figures 1 to 3 extends outwardly from the plate 13^a and is provided with bearings to receive the opposite ends of an auxiliary spindle 23. The spindle has cams 24 and 25 projecting laterally therefrom and disposed upon the opposite ends of the upper end of a lever 27.

The upper end of the lever 27 is bifurcated to provide a pair of spaced arms 30 and 31 to receive the reduced portion 32 of the spindle 23. The arms 30 and 31 are provided with a trunnion 33 received within a bearing 34 formed at the side wall of the casing 12, as shown more particularly in Figure 6. The arm 31 has a trunnion 35 received within a bearing 36 formed in the other side wall of the casing.

A finger 40 extends laterally from the upper end of the lever 27 and is adapted to engage the cam 25 while the finger 41 extends from the opposite side of the lever and is adapted to engage the underface of the cam 24. A spring 42 has its end, shown at 43, fastened to bosses of the trunnions 33 while a portion, as shown at 44, engages the upper wall of the housing 12 in order to return the spindle to its normal inoperative position after the usual panic bar 45 has been released.

It will be noted that a second lever 27^a is pivoted, to the door 11 in spaced relation with the lever 27. The free ends of the levers are connected by the panic bar 45, so that the lever 27 which is connected to the lever 27^a by the panic bar 45 when rocked by said bar will operate the auxiliary spindle 23 which is adapted to have its inner end connected to a standard spindle 51 as will be presently explained. This construction is employed in the attachment in connection with the standard door lock 52 which is operated exteriorly of the door 11 by means of the spindle 51 and a knob 53. In this case the plate 13^a is extended upwardly and secured at 54 to the door 11. A bushing 55 is mounted in an enlarged opening 56 in the plate 13^a which in turn has a bearing 57 to receive the inner end of the auxiliary spindle 23.

The inner bifurcated end 60 of the spindle

51 receives the reduced portion 61 of the spindle 23. The bifurcated portion and the reduced portion of the spindle 23 have flat faces which are in contact with each other so that when the knob 53 is revolved not only the spindle 51 will be rocked but the spindle 23 will likewise be revolved without acting on the lever 27.

A stop 65 in the form of a bolt is secured in the lever 27 and is adapted to engage the plate 13[a] for limiting the inward movement of the lever 27 when it is rocked upon its trunnions 33 and 35.

The operation of this portion of my device is as follows: The device is adapted to be operated not only by the panic bar 45 but by the knob 53. When the bar 45 is moved the levers 27[a] are rocked causing the finger 40 to press downwardly on the cam 25 while the finger 41 presses upwardly on the cam 24, thereby causing rocking of the auxiliary spindle 23. When the bar 45 is released the spring 42 will return the auxiliary spindle 23 and likewise the lever 27 to its normal inoperative position.

As is easily understood, the usual locking mechanism, shown at 52, is adapted to be operated from the interior of the room by means of the panic bar 45 and the levers 27 and 27[a] or the lock may be actuated to release the bolt from its keeper exteriorly of the room or building by means of the door knob 53.

It will thus be seen that the top latch has been designed to prevent the push rod and bolt from dropping when the standing leaf is in an open position. By the above described construction, a noiseless release for the push rod, top and bottom bolt is provided and the complete push rod and lever equipment is perfectly balanced thereby preventing noisy operation. A very soft spring may be employed at 19[b] for seating the latch thereby providing a noiseless bolt.

The housing which may or may not support the rock shaft or bolt 23 is so constructed that it may be employed without any modification in right or left hand construction. The housings 18 and 20 are constructed exactly identical with one another thereby leading to simplicity of manufacture and desirable interchangeability.

I claim:

A panic bolt attachment for standard door locks comprising a casing provided with bearings, a spindle mounted in the bearings, a door locking means connected with the spindle, a lever having a pair of spaced arms pivotally mounted in the casing, the spindle being located between the arms, a cam on the spindle at one side of the pivot for the lever, a second cam on the spindle at the other side of the pivot, a finger on one arm engageable with one cam for moving the spindle in one direction, and a finger on the other arm engageable with the other cam for moving the spindle in the opposite direction, rocking of the lever causing rocking of the spindle whereby the door locking means will be actuated.

WALTER E. KELLY.