Sept. 4, 1928. 1,683,553

A. L. KERR

LATCHING MECHANISM

Filed Oct. 25, 1927

Fig. 1.

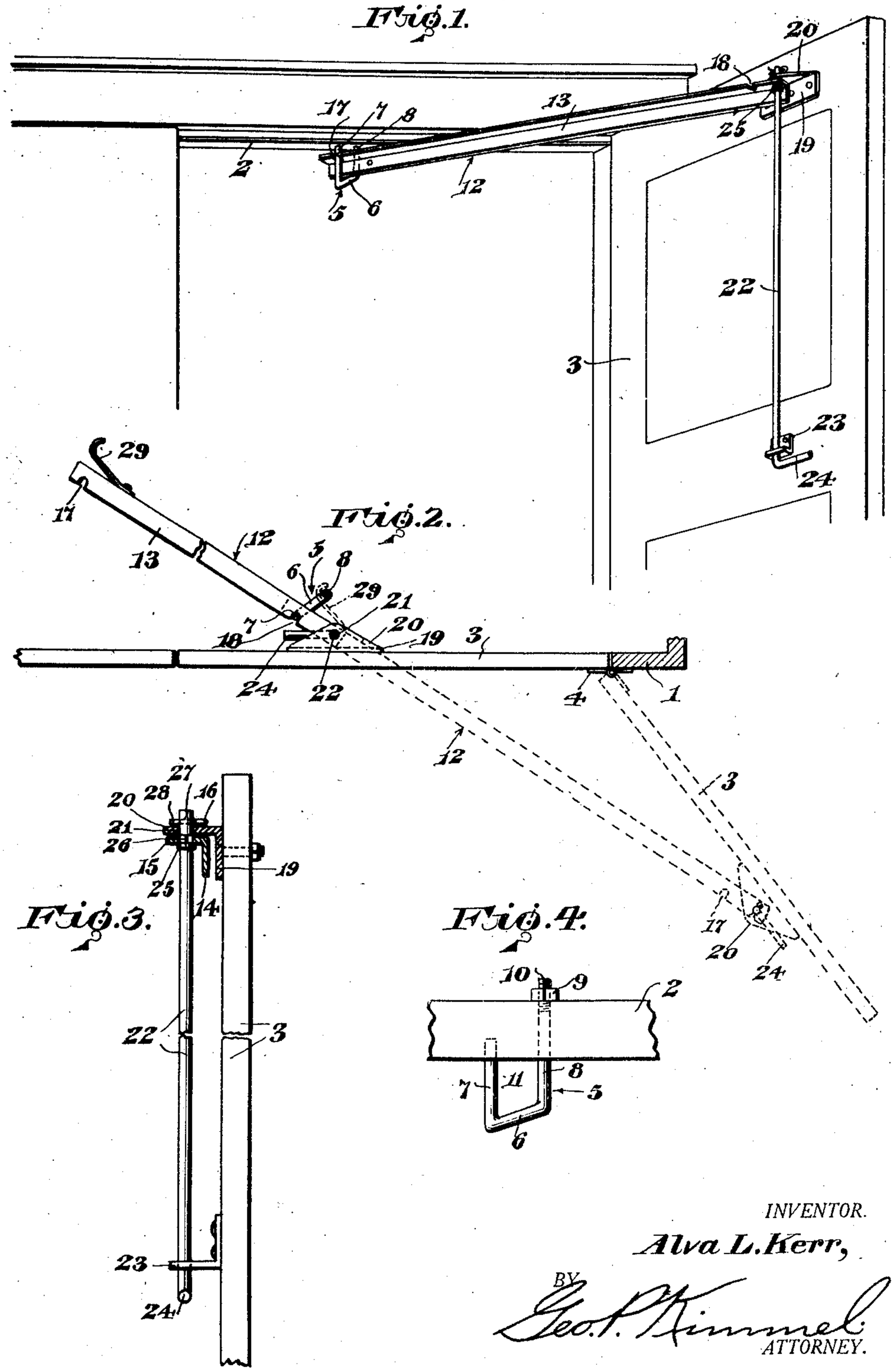
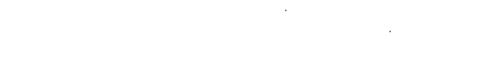


Fig. 2.

Fig. 3.

Fig. 4.



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Patented Sept. 4, 1928. 1,683,553

UNITED STATES PATENT OFFICE.

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LATCHING MECHANISM.

Application filed October 25, 1927. Serial No. 228,622.

This invention relates to a latching mechanism, designed primarily for use in connection with garage doors, but it is to be understood that a latching mechanism, in accordance with this invention, may be employed for any purposes for which it is found applicable, and the invention has for its object to provide, in a manner as hereinafter set forth, a mechanism of the class referred to for securing a door in open and in closed position when occasion requires.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a latching mechanism for the purpose referred to which is simple in its construction and arrangement, strong, durable, compact, thoroughly efficient in its use, conveniently operated when it is desired to open the door from closed position and to close the door from open position, readily installed with respect to a door and door frame, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described, and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which fall within the scope of the claim hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:

Figure 1 is an elevation of a latching mechanism, in accordance with this invention, showing the adaptation thereof in connection with a door and door frame and further set to maintain the door latched in open position.

Figure 2 is a top plan view of a latching mechanism in accordance with this invention, and illustrating the position of the same in full lines when latching the door in closed position and in dotted lines when latching the door in open position.

Figure 3 is a fragmentary view in sectional elevation of the device as attached to a door.

Figure 4 is a perspective view of the keeper element of the latching mechanism and with said element secured to the top of the door frame.

Referring to the drawings in detail 1 denotes a door frame and the top thereof is indicated at 2. A door is illustrated and indicated at 3 and which is hinged to the door frame 1 as at 4. The foregoing elements are merely illustrated by way of example for the purpose of showing the adaptation of a latching mechanism in accordance with this invention for the purpose of latching the door in closed position and for latching it in an extended or open position.

A latching mechanism in accordance with this invention comprises a combined support and keeper element referred to generally at 5 and which is of yoke-shaped form and includes a base 6, a pair of arms 7, 8 and a securing nut 9. The arm 8 is of greater length than the arm 7 and the latter extends into the lower portion of the top 2 of the door frame. The arm 8 extends through the top 2 of the door frame and has its upper end threaded as at 10 and engaging the said threaded end is the securing nut 9 and which acts, in connection with the short arm 7 of the element to clamp the latter to the top 2 of the frame 1. The element 5 depends a substantial distance from the top 2, of the frame 1, to form a guide passage 11. The element 5 is disposed at an inclination or obliquely with respect to the lower face of the top 2 of the frame 1.

The latching mechanism further includes a latching element referred to generally at 12 and consisting of a bar 13 of angle shaped cross section and of substantial length. The bar 13 has a vertically extending leg 14 and a horizontally extending leg 15 and the latter projects from the upper end of the leg 14 and is formed with a polygonal shaped opening 16. The horizontal leg 15 at a point in proximity to its inner end is formed with a notch 17, and in proximity to its outer end with a notch 18. The notch 18 coacts with the arm 7 of the element 5 for the purpose of latching the door 3 in closed position and the notch 17 coacts with the arm 7 of the element 5 for the purpose of latching the door 3 in open or extended position. The element 12 is bodily shifted and extends through the guide opening 11 and rides upon the base 6 of the element 5. The element 5 is connected to the front 2 of the frame 1 so that the base 6 of said element will extend at an upward inclination from the arm 7 to the arm 8 and when the element 5 supports the element 12 it will be disposed at an inclination with respect to the latter and in this connection see Figure 1.

Connected to the door 3, near the top thereof and in proximity to the free edge of the

door body is a bracket 19 formed at its top with an inwardly directed extension 20 provided with an opening 21, and said bracket constitutes a support for a vertically disposed turning rod 22. Secured to the door 3, below the bracket 19, is an apertured keeper 23 through which extends the turning rod 22, and the lower end of the latter is provided with an angular extension 24 which constitutes a handle.

The turning rod 22, in proximity to its upper end is provided with a collar 25, and above the collar with a polygonal shaped portion 26 which is arranged in the opening 16. Above the polygonal shaped portion 26 the bar 22 is cylindrical and is formed with a transverse opening 27, through which extends a cotter pin 28. The rod 22 extends through the opening 21 and the cotter pin 28 is arranged over said extension 20 and said cotter pin 28, in connection with the angular end 24, keeper 23 and extension 20 couples the rod 22 to the door. The polygonal shaped portion 26 of the rod couples it to the element 12.

It will be assumed that the latching device is in position to latch the door closed, and when in such position the notch 18 receives the arm 7 of the element 5 and in this connection see Figure 2. If it be desired to open the door, the rod 22 is turned whereby the element 12 will be shifted clear of the arm 7 and as the door is moved to open position, the element 12 will be carried therewith, until the notch 17 receives the arm 7. The rear end of the element 12 is provided with a spring 29 which acts as a means to shift the bar towards the arm 7 when the rear end of the bar is at the element 5 and under such conditions the notch 17 will be caused to receive the arm 7 thereby locking or latching the door 3 in open position and in this connection see Figure 1. The spring 29 is of hook shape and engages with the arm 8 of the keeper 5 to limit the outward shift of the bar 12, so that it cannot pass entirely through the keeper whereby the door is prevented from opening too far. To release the door from open position, the rod 22 is given a turn, whereby the notch 17 is swung clear of the arm 7 and the element 12 can be moved rearwardly until the arm 7 engages the notch 18 whereby the door 3 will be latched in closed position. The mechanism not only provides means for holding or latching the door in closed position, but also for holding or latching the door in an extended or open position, and therefore it is thought the many advantages of a latching mechanism in accordance with this invention and for the purpose referred to, can be readily understood, and although the preferred embodiment of the invention is as illustrated and described, yet it is to be understood that changes in the details of construction can be had which will fall within the scope of the invention as claimed.

What I claim is:

A latching mechanism for the purpose set forth comprising a stationary, angularly disposed yoke-shaped keeper element providing a combined support and guide, a latching element of L-shaped cross section including a vertical and a horizontal leg and with the horizontal leg extending from the upper end of the vertical leg, said latching element slidably extending through said keeper element and having its vertical leg supported by the keeper element, said latching element bodily shiftable by a door on the opening and closing thereof, a combined releasing and door connecting means for said latching element connected to the horizontal leg thereof, the horizontal leg of said latching element being provided with a notch in proximity to its inner end and a notch in proximity to its outer end, the inner of said notches coacting with the keeper element to latch the door in open position and said outer notch coacting with the keeper element to latch the door in closed position, and an outwardly projecting spring anchored at its forward end to the outer face of said vertical leg in proximity to its inner end and coacting with one side of the keeper element to force the latching element against the other side of the keeper element when the latching element is shifted outwardly.

In testimony whereof, I affix my signature hereto.

ALVA L. KERR.