

No. 700,221.

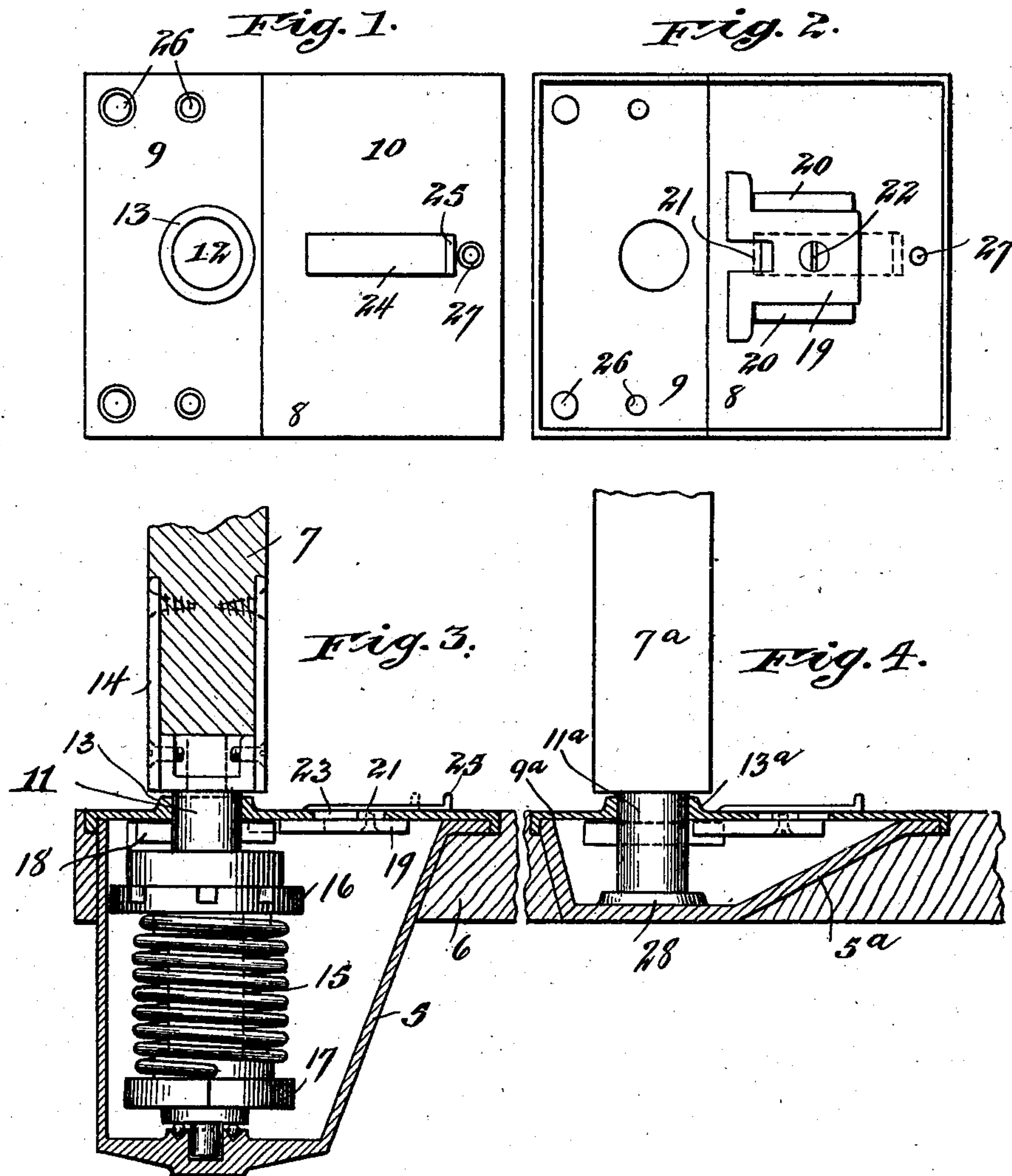
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T. G. MORRIS.

FLOOR HINGE.

(Application filed Mar. 27, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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FLOOR-HINGE.

SPECIFICATION forming part of Letters Patent No. 700,221, dated May 20, 1902.

Application filed March 27, 1901. Serial No. 53,029. (No model.)

To all whom it may concern:

Be it known that I, THOMAS G. MORRIS, of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Floor-Hinges, of which the following is a specification.

My invention relates to hinges for doors and similar swinging structures, and has been designed more especially as an improvement in that class of hinges known as "floor-hinges," in which the door or other swinging member is supported in operative position through the agency of a pair of vertically-disposed pivot-bolts or pintles, one of which has a rotatable bearing in the floor or sill under the base or lower edge of the door and the other of which has a similar bearing in the door frame or casing above the top or upper edge of the door, said pintles both being disposed in the vertical axis about which the door swings and having their inner ends fixedly secured in the lower and upper edges of the door or in suitable keepers attached thereto.

Hinges of the above-described class have heretofore been constructed in such a manner as to permit the door to swing open freely on either side of its closed position, the pintle of the hinge being ordinarily provided with a spring and suitable intermediate clutch or stop devices between the spring and the pintle, whereby the spring tends to close the door after the latter has been opened in either direction. Heretofore, so far as I am aware, doors thus hung have been retained in open position against the action of the spring or any other force tending to close them by a weight, wedge-block, hook, or similar independent device acting on the outer or open end of the door.

The object of my present invention is to provide a simple and easily-operated device directly connected and associated with the hinge itself, whereby the door may be readily locked in its open position on either side of its intermediate or closed position and may be as readily unlocked, the locking and unlocking being effected, preferably, by a push of the foot on the part of the operator; and to this end my invention consists in an interlocking device associated with the pintle of the hinge and operating in the manner hereinafter described and claimed.

My invention in its preferred form is illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of the top plate or cover of the casing containing the hinge-pintle, showing one element of my improvement applied thereto. Fig. 2 is a similar view in bottom plan. Fig. 3 is a central vertical section through the casing, showing the hinge-pintle and its associated mechanism including my improvement in elevation and engaging the bottom edge of the door; and Fig. 4 is a view similar to Fig. 3 and showing my invention applied to a simple and elementary form of hinge unprovided with a closing-spring.

Referring to the drawings, 5 designates a suitable metal casing set into a mortise or hole formed in or through the floor or sill beneath the door 7.

8 designates as an entirety a suitable top plate or cover for the casing 5, such cover being preferably formed, as shown, in two parts 9 and 10. In the bottom of the casing is journaled a vertically-disposed pintle or pivot-bolt 11, the upper end of which passes through and is journaled in a hole 12, formed through a boss 13 on the upper face of the member 9. That portion of the pintle lying above the boss 13 is squared or flattened on opposite sides and engages a correspondingly-shaped hole or socket formed in a keeper 14, secured to the lower edge of the door 7.

At 15, 16, and 17 I have shown in Fig. 3 a closing-spring and intermediate cooperating devices between the latter and the pintle; but as these latter form no part of my present invention they need not be more particularly described.

Referring now more particularly to the device forming the subject-matter of my present improvement, 18 indicates one member of my locking device, which in the form illustrated consists of a horizontally-disposed bolt or pin rectangular in cross-section and passing transversely through the body of the pintle 11 just below the plate or cover 8 and projecting a certain distance on either side thereof. 19 indicates the other cooperating member of the lock, which in the form shown consists of a slidable plate held between parallel guides 20 on the under face of the member 10

and having formed in that side thereof which lies nearest the pintle 11 a slot or recess 21 of a size to receive either end of the pin 18. This slotted plate 19 is slidably secured on the under face of the plate 10 by means of a screw-bolt 22 passing through a slot 23 in said plate and engaging a slide 24, located over the slot 23, the said slide being preferably provided with an upturned end or projection 25, which latter may conveniently be engaged by the foot of the operator to cause the locking member 19, through the described connections, to engage and disengage the pin 18, as desired.

26 and 27 indicate suitable holes formed through the plates 9 and 10, respectively, whereby said plates may be secured, as by screws, in the horizontal flange of the casing 5.

In Fig. 4 I have shown my invention applied to the simplest form of floor-hinge, the latter comprising merely a vertical pintle 11^a, resting in a boss 28, formed on the base of the casing 5^a, and having its upper end journaled in a boss 13^a, formed on the plate 9^a, and entering a suitable socket in the lower edge of the door 7^a.

The elements of my invention as applied to a simple form of hinge, such as that last described, are identical in construction, application, and mode of operation to the same, as shown in Figs. 1 to 3, inclusive, and are therefore indicated by the same reference numerals.

The operation of my invention will be readily understood from the foregoing description, but may briefly be described as follows: When the door is in its closed position, the spring 15 is inactive and the plane of the door is at right angles to that indicated in Figs. 3 and 4. At such a time it will be evident that the pin 18 occupies a position also at right angles to the position shown in Figs. 3 and 4, which position is at right angles to the longitudinal axis of the sliding locking member 19. When now the door is open to the extent of ninety degrees, the pin 18 will thereby be brought into longitudinal alignment with the slot 21 in the plate 19, and thereupon the operator by pushing inwardly with his foot upon the projection 25 will force the plate 19 into locking engagement with the adjacent end of the pin 18, as indicated in Fig. 4, and the door will thereby be securely held in its open position. A simple reverse of this operation separates the interlocking parts 18 and 19 and permits the door to be closed by its spring 15, as in Fig. 3, or by manual means, as in Fig. 4.

It will be obvious from the foregoing description that the improvement constituting my present invention is not limited in its application to any particular form of floor-hinge, it being essential only that the hinge shall comprise as one of its elements a main pintle or pivot bolt or similar element.

The form of hinge-containing casing shown and described is by no means essential, and so far as the application of my invention is

concerned the casing might be entirely omitted, the hinge being set in a mortise or recess in the floor or sill and the sliding element 19, with its operating parts, being disposed in another groove or mortise adjacent thereto. Preferably, however, a containing casing for the lock mechanism will be employed, or at least a metallic plate, such as 8, made either integral or in parts, as shown, in order to afford a secure upper bearing for the hinge-pintle and also an adequate support for the cooperating locking member 19. I wish it also to be understood that my invention is not limited to a device in which a transverse pin fixed in the hinge-pintle is engaged by a slidable slotted cooperating locking member. It will be obvious that any number of lateral projections formed integral with or otherwise secured on the pintle would be the equivalent of the transverse pin 18, the greater the number of these projections employed the greater being the number of positions at which the door may be held open. In practice, however, it is usually desirable to maintain the door in an open position on either side of its closed position at right angles to the latter. For that purpose the pin 18, projecting on diametrically opposite sides of the pintle, is obviously sufficient and affords a simple and inexpensive means for effecting the desired result. A construction in which the movable element was carried by the pintle and the stationary element supported by the casing-cover would be the obvious converse of what I have shown and described and would be within the spirit and intended scope of my invention. It is also obvious that the slotted character of the sliding member 19 is not essential, since a simple sliding bar engaging the pin 18 on the proper side thereof to resist the closing tendency of the spring might be employed in place thereof. The essential features of my invention are comprised in the combination with the hinge-pintle or similar element of a floor-hinge, of a pair of interlocking elements in association therewith, one of the elements being carried by or formed on the pintle and the other being disposed adjacent thereto and one of the elements being movable into and out of locking engagement with the other.

I claim—

1. In a floor rotatable hinge, the combination with the hinge-pintle of a pair of interlocking elements associated therewith, one of which elements is fixed with respect to the pintle and the other of which is disposed adjacent thereto and projects above the floor and is adapted to be moved by the foot of the operator into and out of locking engagement with the fixed element whereby the door is maintained open or permitted to close.

2. In a floor rotatable hinge, the combination with the hinge-pintle and its containing casing of a fixed lateral projection carried by said pintle and a sliding member carried by the top plate of the casing adapted to be

moved into and out of lateral engagement with said projection to maintain the door open or permit it to close.

3. In a floor rotatable hinge, the combination with the hinge-pintle of a series of fixed lateral projections carried by said pintle, and a sliding member disposed adjacent the pintle and adapted to be moved into and out of lateral engagement with one of said projections, in the manner and for the purpose described.

4. In a floor-hinge, the combination with the hinge-pintle and its containing casing of a pin extending transversely through said

pintle immediately below the top plate of the casing and projecting laterally therefrom, a slotted plate slidably secured to the under face of the top plate and movable into and out of engagement with the projecting ends of said pin, and means disposed on top of said top plate, connected with said slotted plate, adapted to be actuated by the foot of the operator.

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