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HINGED DOOR

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Fig. 1

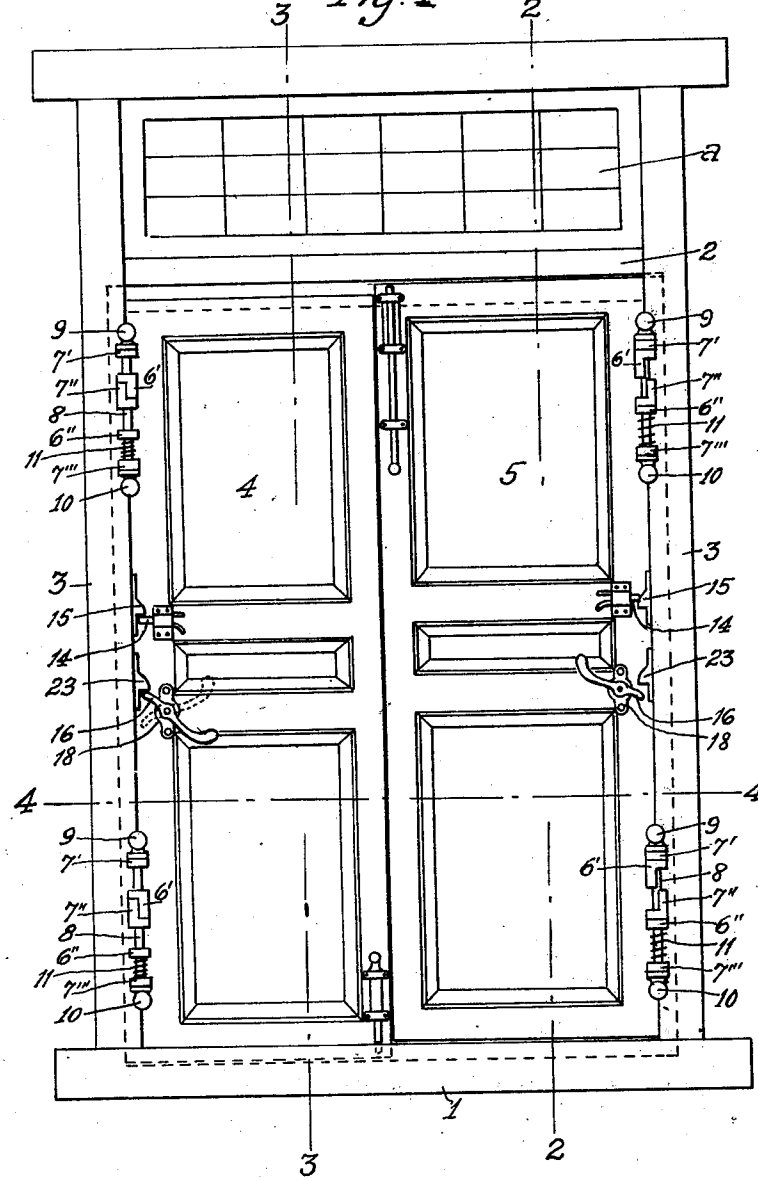
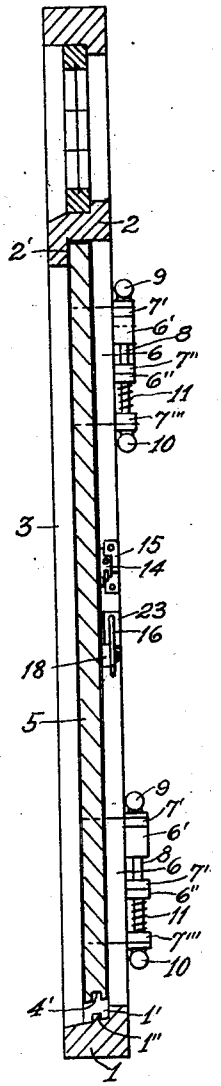


Fig. 2



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Fig. 7

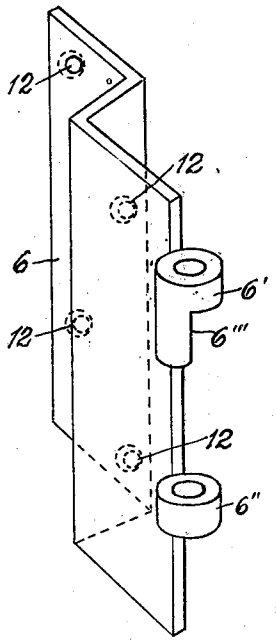


Fig. 8

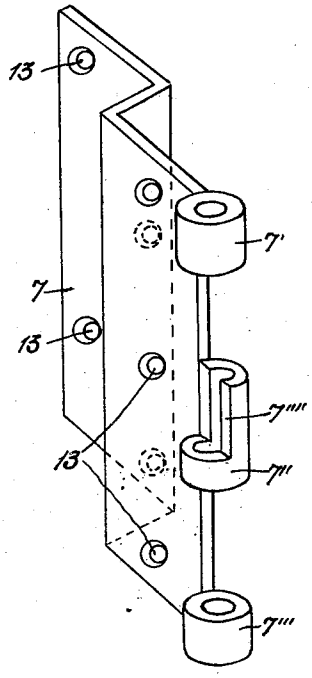


Fig. 3

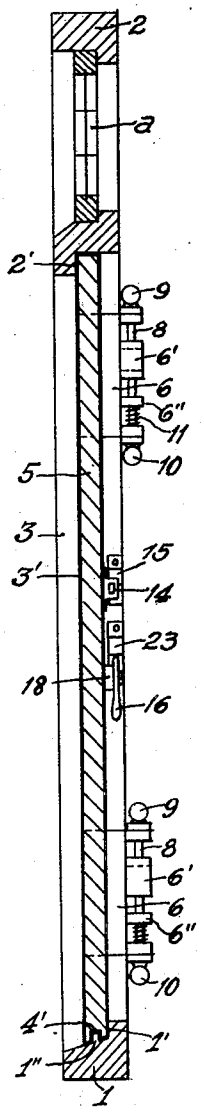


Fig. 9

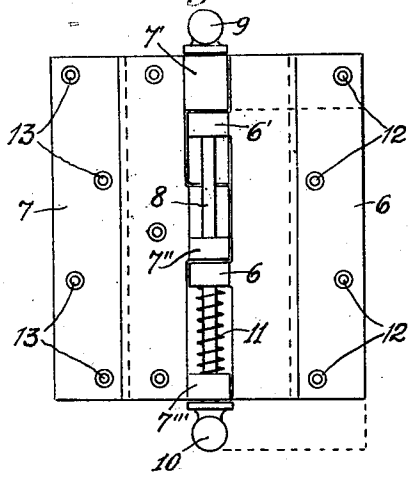


Fig. 10

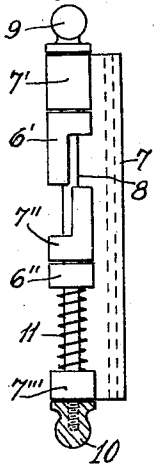
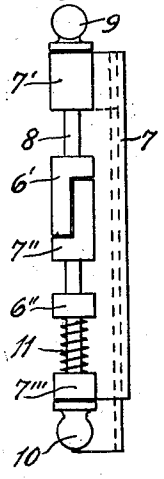


Fig. 11



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Fig. 4

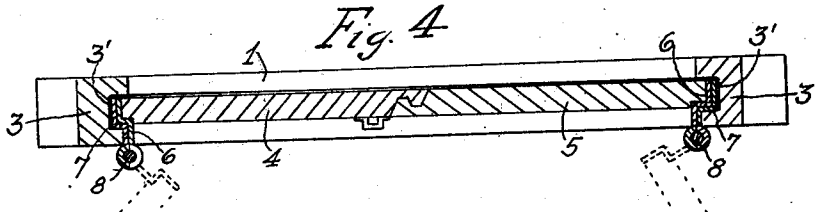


Fig. 16

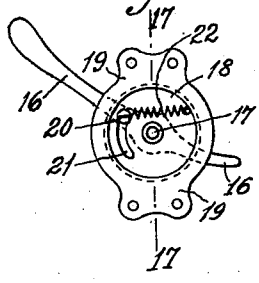


Fig. 17

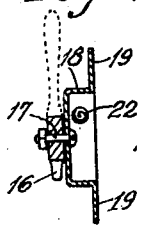


Fig. 5

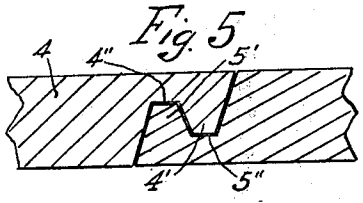


Fig. 6

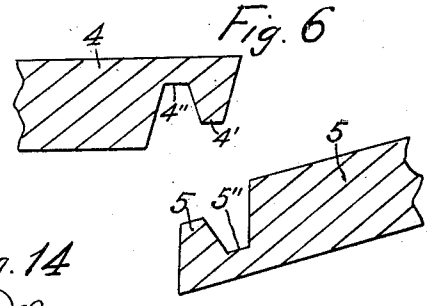


Fig. 13

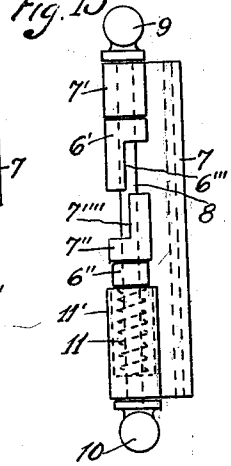


Fig. 14

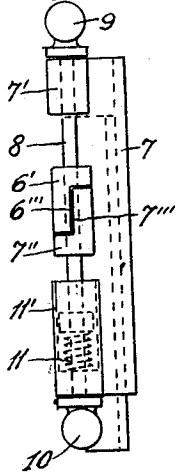


Fig. 15

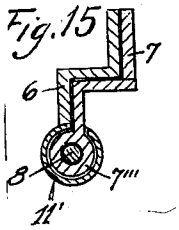
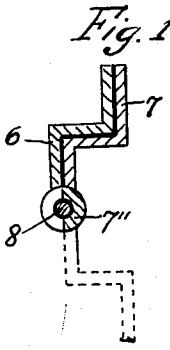


Fig. 12



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Patented Sept. 16, 1930 1,775,681

UNITED STATES PATENT OFFICE

MANUEL MARIÑO, OF HABANA, CUBA

HINGED DOOR

Application filed June 14, 1927. Serial No. 198,811.

The invention relates to hinged doors and its main object is to provide a hinged door, window, shutter, etc., provided with a novel closure system, whereby the usual water sheds of said doors become absolutely unnecessary, for the doors are absolutely watertight and prevent the entrance of water through the fissures or joints of the door leaves with the lintel, threshold and jambs and offering, furthermore, a complete safety against any attempt made to force open with criminal purposes the door where such closure system is used.

Another object of this invention is to provide a hinged construction contributing to the tight closure of the door leaves against the door jambs of the frame.

And a further object is to provide a holding device for the door leaves in their closed position, with means to operate same in order to open each door leaf.

The invention is described with reference to the figures of the enclosed drawing, in which:—

Fig. 1 is an inside elevation of a door provided with the closure which is the subject matter of this invention.

Fig. 2 is a vertical section on the line 2—2 of Fig. 1.

Fig. 3 is a vertical section on the line 3—3 of Fig. 1.

Fig. 4 is a horizontal section on the line 4—4 of Fig. 1.

Fig. 5 is a horizontal section of the joint between two door leaves at a larger scale, showing the door leaves together.

Fig. 6 is a horizontal section similar to that of Fig. 5 showing the door leaves separated.

Fig. 7 is a detail showing in perspective one of the halves of the hinge.

Fig. 8 is a detail showing in perspective the other half of the hinge.

Fig. 9 is a front elevation of the hinge in open position.

Fig. 10 is an elevation of the hinge closed in the open position of the door leaves.

Fig. 11 is an elevation of the hinge closed in the closed position of the door leaf.

Fig. 12 is a horizontal section of the closed hinge.

Fig. 13 is an elevation of a modified form of the closed hinge in the open position of the door leaf.

Fig. 14 is an elevation of the same modified form of the hinge in the closed position of the door leaf.

Fig. 15 is a horizontal section of this modified form of the hinge.

Fig. 16 is a detail showing a front view of the lever device used to bring the door to its closed position,

And Fig. 17 is a vertical section on the line 17—17 of Fig. 16.

In the Figures 1 to 4 of the drawings is shown a gap for a door provided with a frame comprising threshold 1, lintel 2, and jambs 3, the gap above the lintel 2 being covered by a shutter *a* and below the lintel 2 by two door leaves 4 and 5, which are hinged to the jambs 3 by means of specially constructed hinges which shall be described later on.

The door leaves 4 and 5 are adapted to have a sliding motion on notches 3′ formed in the inner faces of the jambs 3 and also in recesses 1′ and 2′, formed in the threshold 1 and lintel 2 of said frame, the recess 1′ of the threshold 1 having an inner face slightly inclined outward and a rib 1″ on same to adjust with a groove 4′ or 5′ formed, respectively, on each of the lower faces of the door leaves 4 and 5.

The door leaves 4 and 5 are joined to the jambs 3 of the frame by two or more hinges (Figs. 5 to 10) comprising two metallic plates 6 and 7 of Z shape in transverse cross section, adapted to overlap one upon the other and to be inserted by one of its extreme portions and by its middle portion within the notch 3′ of the jamb 3, the remaining extreme

portion of plates 6 and 7 projecting out of the door and the frame, the plate 6 having on its outside edge two integral bushings 6′ and 6″, and the plate 7 three spaced bushings 7′, 7″ and 7‴, of which bushings 6′ and 7″ have a complementary angular cut indicated by 6‴ and 7⁗, and upon the bushings of plate 6 coming to register with those of the other plate 7, through the openings of the bushings is passed a pin 8 that has at an end a button 9 and at the other end has a screw thread for a nut or stud 10 to thread upon, there being a spring 11 coiled around the pin 8 and between bushings 6″ and 7‴, which spring is adapted to force upwards plate 6, the latter being fixed to the side of the door 4 or 5 with regard to plate 7, fixed within the notch 3′ of the jambs 3 of the frame. The plates 6 and 7 have series of openings 12 and 13, suitably distributed and through which pass the screws that fix them, respectively, to the door leaf and the frame.

In Figures 13 and 14, is shown a modified hinge, in which the coil spring 11 has been covered by a sleeve 11′ fitted upon bushing 7‴.

The door leaves 4 and 5 have on their free edges a deep midway cut forming a tooth 4′ and an adjacent corresponding groove 4″ on the door leaf 4 having their faces at an angle and on the door leaf 5 the cut forms a tooth 5′ and an adjacent corresponding groove 5″, both having their faces at an angle and being adapted to clamp the tooth 4′ of the door leaf 4 with the groove 5″ of the door leaf 5 and just the same way, the cut or groove 4″ of the door leaf 4 with the tooth 5′ of the door leaf 5. (Figs. 5 and 6.)

Furthermore, each of the door leaves 4 and 5 is provided with a spring actuated latch 14, which cooperates with a detent 15 fixed to the jamb 3 of the frame, in order to lock in its closed position each door leaf. In order to operate this locking latch and keep each door leaf shut, the latter has on its inner face and spaced at a certain distance below the latch 14, a small hand lever 16 pivotally mounted upon an horizontal pin 17 fixed to the outside wall of a small box 18 fixed by means of a flange 19 integral with same and by means of a set of screws passing through holes of that flange on the inner face of each door leaf the small lever 16 having a stem 20 passing into the box 18 through an arched slot 21 formed in the outside wall of said box 18, to which stem is tied the end of a coiled spring 22 joined at its other end to a fixed point in the peripherial wall of said small box 18. The small box hand lever 16 works together with a detent 23 fixed to the side of the jamb 3 of the frame, so that when the end of said lever 16 rests against the shoulder of the detent 23 and forces the handle of the small lever downwards, it will bring down the door leaf until the latch 14 is retained under the detent 15.

In the drawings is shown the door leaf 5 open, the groove 5′ of same being separated from the rib 1″ of the threshold 1 of the frame, the upper edge of said door leaf 5 resting into the recess 2″ of the lintel 2. The hinges will be then in the position shown in Figures 9 and 10 of the drawings, that is, that the coil spring 11 will force the plate 6 upwards together with the door leaf 5 and the latch 14 will stay raised upon the detent 15. In order to close this door leaf 5, it will only be necessary to bring it down, which is done by operating the hand lever 16 as previously explained until the latch 14 is caught under the detent 15 and in this closed position, the groove 5′ of the door leaf 5 will adjust upon the rib 1″ of the lintel 1, constituting a veritable dovetailed joint. In the hinges the plate 6 will have been forced down against the tension of the spring 11 until adjusting in a complementarywise way the angular recess 6‴ of the bushing 6 with the angular recesses 7⁗ of the bushing 7″. In order to open again the door leaf 5 it will suffice to disconnect the latch 14 of the detent 15 and to rotate upwards the handle of small lever 16 against the tension of spring 22 to enable the end of small lever 16 to be disengaged from detent 23 and then the tension of the spring 11 of each hinge will force the plate 6 upwards, carrying with same the door leaf 5 until it takes the position shown in Figure 2.

The same way the door leaf 5 opens and closes, the door leaf 4 does open and close too, there being formed a tight joint between same by means of the cuts 4′, 4″ and 5′, 5″.

From the foregoing construction it will be readily apparent the impossibility of the water entering the lower edge joint of the door leaves 4 and 5 with the lintel 1′ of the frame, nor through the joint between that door leaves 4 and 5 and the corresponding door jambs 3 of the frame, due to the perfect closure afforded by the hinges with the door jambs 3 this invention rendering useless the water sheds of any kind heretofore employed on the outside of doors, shutters, etc., to keep the water out.

Furthermore, the assembling between the lower edge of each door leaf and the lintel of the frame provides a very strong grip between these parts, rendering the door practically safe against any criminal attempt to force it open.

Though I have thus described the invention, I do not wish to limit the scope of same to the above specified details, because many modifications can be introduced in the mentioned construction without departing from the spirit or main principle of the invention, which is as hereinafter claimed for.

What I claim is:—

1. A door hinged for swinging movement and also for restricted vertical movement, and having a fixed keeper, a spring to raise the door, a spring-actuated latch to engage under the keeper when the door is in closed and lowered position, a second fixed keeper, and a lever pivotally mounted on the door and arranged for coaction with the second keeper to force the door downwardly against the action of the first named spring and thereby cause the latch to engage under the first-named keeper.

2. A door and hinging and locking means therefor, as claimed in claim 1, including also a spring active to normally disengage the lever from the second keeper.

In witness whereof I affix my signature.

MANUEL MARIÑO.