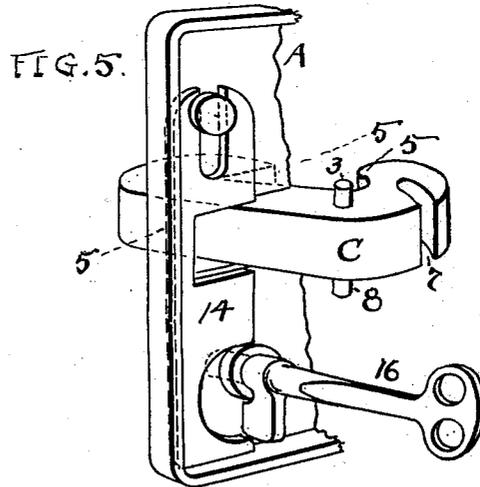
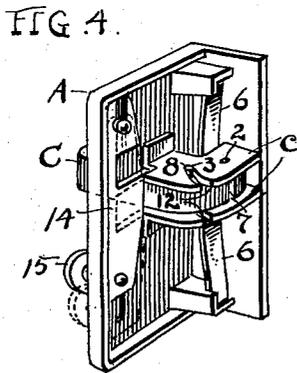
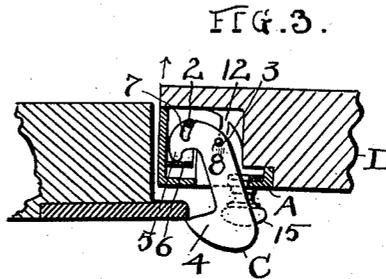
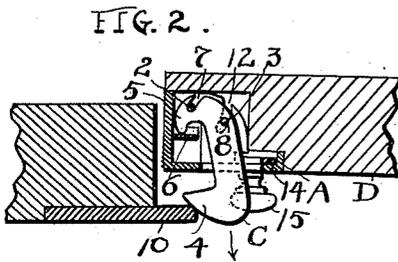
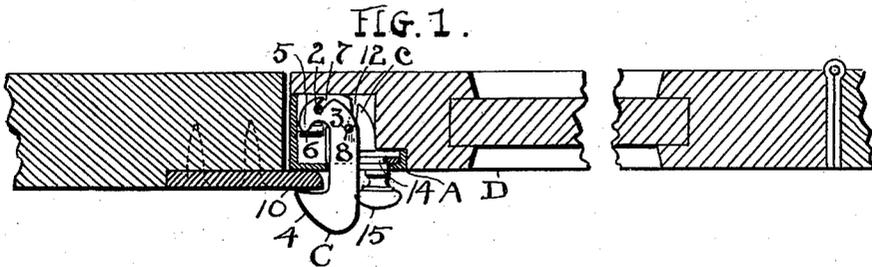


J. L. ZESIGER.
DOOR CATCH AND LOCK.
APPLICATION FILED DEC. 10, 1900.

NO MODEL.

2 SHEETS—SHEET 1.



ATTEST

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FIG. 6.

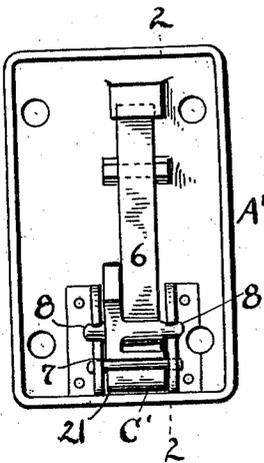


FIG. 7.

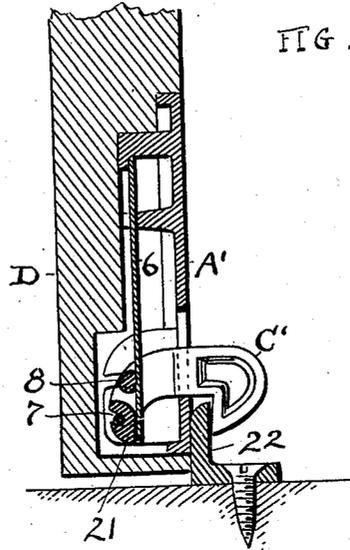


FIG. 8.

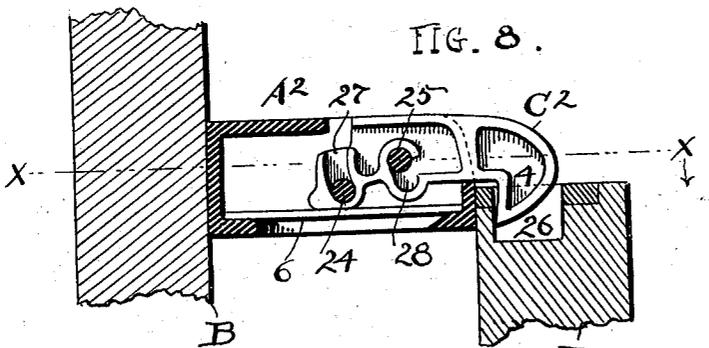
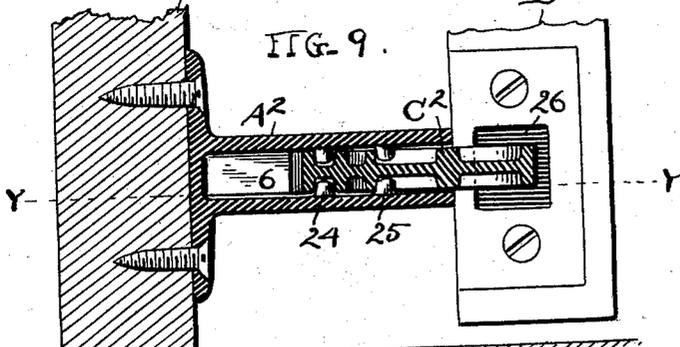


FIG. 9.



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UNITED STATES PATENT OFFICE.

JOHN L. ZESIGER, OF CLEVELAND, OHIO.

DOOR CATCH AND LOCK.

SPECIFICATION forming part of Letters Patent No. 719,976, dated February 3, 1903.

Application filed December 10, 1900. Serial No. 39,257. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. ZESIGER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Door Catches and Locks; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in a combined door catch and lock; and the invention consists in the construction and combination of parts substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a cross-section of a portion of a door and of a section of a door-casing and showing my improved catch and locking mechanism in position on the door and in engagement with a stop on the casing, as occurs when the door is closed, the said mechanism being taken on a transverse line immediately over the catch, corresponding substantially to line 5 5, Fig. 5. Fig. 2 is a view of the same parts exactly as shown in Fig. 1 with the catch in the act of closing. Fig. 3 is a view of the same parts as shown in Figs. 1 and 2 with the catch in opening position, as occurs when the door is being opened and the catch is about to release. Fig. 4 is a rear perspective elevation of the catch and its casing. Fig. 5 is a rear perspective view of parts shown in Fig. 4, but with a portion of the casing and other parts broken away and showing a key for opening the locking-latch in lieu of a button for sliding the latch, as appears in the preceding figures. Fig. 6 is a plain elevation of a modified form of the invention with the catch adapted to swing in a vertical plane and with other modifications, as hereinafter described. Fig. 7 is a sectional elevation of the device on line 2 2, Fig. 6. Fig. 8 is a further modification of the invention on line Y Y, Fig. 9, in which the catch is supported on the base-board of a room, and the door has a recess in its edge adapted to be engaged by the catch when the door is swung open, whereby the closing of the door is prevented except by hand. Fig. 9 is a sectional plan of the invention shown in Fig. 8 on line X X.

Referring now to the form of the invention disclosed in Figs. 1 to 5, inclusive, I show a combined catch and locking mechanism adapted to use quite generally on doors of various kinds, gates, blinds, shutters, and the like, and, as will be seen in the further description, is adapted to be automatically closed on a very easy spring resistance and to be opened on a different and harder resistance, but still without handling the catch, and, finally, to be locked, so that it cannot be opened at all. To these several ends the device comprises the right-angled casing A, adapted to be set into the edge of door D, relatively as seen in Fig. 1, at any convenient elevation from the bottom of the door. The said casing might also compass the opposite side of the door without affecting the invention, and this may be done if room demands it for the operation of catch C. It will be noticed, however, that the said catch is located to operate at the side of the door and on what in this case is the inside, so that, as shown, there is no outside exposure whatever of the catch mechanism nor disclosure of its location.

Catch C is a pivoted spring-pressed member with two centers or points of operation. Its first point is at 2, on which it closes, and its second point is at 3, on which it opens. It is closed in Fig. 1. In Fig. 2 it is closing, and in Fig. 3 opening. Notice that while the positions appear to be about the same in Figs. 2 and 3 they are really different and the operations are wholly different. This will appear by examining the structure and arrangement of the parts. Thus the catch C has an engaging tooth or catch proper, 4, a spring-bearing 5 at its opposite end turned in the same direction as tooth 4 from the body of the catch and adapted to bear on or to be borne upon by flat spring 6. It has a transverse groove or slot 7 in its heel, Fig. 5, and side pivot points or projections 8 forward of said channel.

In the casing member C lies between two side plates c, which are fixed to part A, and a pin 2 is secured at its ends in these plates and lies in open slot 7 and forms the fulcrum of pivot when the catch is closing and said catch is tilting backward to let the door close and itself drop in behind and engage upon the holding plate or stop 10, as in Figs. 1 and

2. Observe that in closing spring 6 has to yield but a little, and hence the movement of catch C is very easy from its normal position, as in Fig. 1, to its farthest swing rearward to pass engaging plate 10 and spring into locking connection therewith. Indeed, only the ordinary easy swinging of a door to close it without slamming is sufficient to throw catch C back, as is seen in Fig. 2, to effect engagement. As this occurs the pivot-points 8 on said catch travel back or out correspondingly in the open segmental slots 12 in confining-plates *c*, as seen in Fig. 2, while the bearing 5 on spring 6 slides sufficiently to accommodate this movement. Now when the door is to be opened the catch is intended to yield its grip, as is occurring in Fig. 3; but this is a wholly different operation from that illustrated in Fig. 2. It will be noticed that now the fulcrum or pivot center on which the catch turns is at 3, and that opening takes place through a pull instead of a push on the door. Hence in opening the door the catch has to be withdrawn from stop 10, and to do this it must be tilted relatively as in Fig. 3. As this occurs the pull comes directly on pivot-points 3, which are down to the end of their engaging slots 12; but the said points 3 are at the heel of catch C farthest from the spring, and tooth 4 projects in the opposite direction from this pivot and generally engages at or near its own point or stop 10. Hence the pull on tooth 4 is not only rendered indirect by its relation to pivot 3, but a tendency is set up to throw said tooth back from its engagement, because the direct pull is far to its rear. Spring 6 comes into play at this juncture and gives a spring resistance to the opening operation, and since it is located so far from fulcrum 3 there is greatly-increased downward movement of bearing-point 5 as compared with the operation of closing, as in Fig. 2, where the pivot center is much nearer said point, and hence greater resistance of spring to overcome in opening the door. When the catch is disengaged from stop 10, it is instantly thrown back again to normal position, as in Fig. 1.

It will be noticed as a feature of the foregoing construction and operation that in opening or closing the catch C tilts on its pivots and that it always moves away from the bearing not being used. Thus if it tilts on points 2 the pivot-bearings 8 move outward in slot 12. If it pivots at 3, the cross pivot-pin 2 moves outward in slot 7, and this occurs alternately in opening and closing the catch. The long arm of the catch from pivot 3 to the spring accounts for the greatly-increased spring resistance to overcome in opening the door as compared with closing it. This construction furnishes a positive and practical catch for a door which is automatic in both opening and closing and which opens and closes under wholly different conditions so far as spring resistance is concerned, as already described. Then if it be desired to

lock the door, say, from the inside, as in the case of a screen-door, the locking is easily effected by moving slide 14 up behind the catch C, as in Fig. 4, and preventing it from being swung outward on its pivots. Knob 15, engaged with slide 14, enables this to be done. In Fig. 5 I show a key 16 for operating slide 14 from the outside, and in this view said slide is down or back out of locking position, the reverse from Fig. 4. The said sliding lock is withdrawn also in Figs. 1, 2, and 3.

Figs. 6 and 7 show the operating parts as in the foregoing figures; but here the invention is modified for attachment to the bottom of a door to engage a stop fixed on the floor. The casing A' is therefore substantially flat, with rearward projections for supporting one end of spring 6, and catch C' has a side projection 21, against the inside of which the other end of spring 6 bears. This side projection enables the spring to lie parallel to catch C' instead of at right angles thereto, as in the foregoing views, and is constructed with the slot or channel 7 and pivot-points 8, as in Figs. 1 to 5. It engages right-angled stop 22, supposed to be fixed to a floor; but the use of the device is not limited, and it may be employed on shelves or wherever it is found to be of service.

In Fig. 8 I show a further modification, wherein the device is supported by its casing A² on what may be the base-board B of a room, and the inner sides of the casing have inward projections 24 and 25, corresponding to the pivots 2 and 3 in Figs. 1, 2, and 3, working in segmental grooves or slots 27 and 28 in the sides of catch C². The door D has a recess 26 in its edge, which is engaged by tooth 4 on catch C², and the operation is substantially the same as in the foregoing views so far as engagement and disengagement of the parts are concerned. Here again there is no limit put upon the uses to which the device may be applied. In these latter views spring 6 rests on ledges at its ends and the catch bears on its middle, while in Figs. 6 and 7 the catch bears on a free end of the spring. These details are in a sense unimportant, as the effect on the catch is the same in all cases. The outer edge of the catch is rounded at an inclination where it strikes the stop 10 or its equivalent in the other views, so that in closing it will glance off or swing back as it strikes said stop. Then as it passes said stop it swings by spring-pressure into engagement therewith.

What I claim is—

1. The combination of a door-catch with a casing in which the catch is pivoted on two different centers of rotation at different distances from the engaging end of the catch, substantially as described.

2. The combination of a door-catch and a casing therefor and two different sets of pivot centers on which the catch turns according as it is opened or closed, and a spring bearing upon the catch, substantially as described.

3. A rotatable door-catch and a casing therefor, in combination with a spring engaging the catch, said catch having two pivot-points at different distances from the point where
5 the spring engages, whereby the spring action is varied according as the hinge turns on one pivot or the other, substantially as described.

4. In door-catches, the combination of a
10 casing and a catch therein and a spring bearing upon the inner end of the catch, said catch having two sets of pivot-points at different distances from its inner end and the spring bearing upon the end of the catch behind both
15 said pivot-points, substantially as described.

5. The combination of the door and the casing and the catch having two different pivot centers in the casing and a spring bearing

upon the catch, behind its rear pivot, the said catch and casing being constructed to allow
20 the catch to yield lengthwise in opening the door, substantially as described.

6. The combination of the casing and the catch having two pivot centers and slots at each center adapting the catch to turn away
25 from the pivot center which for the time is not being used, and a spring bearing upon the inner extremity of the catch, substantially as described.

Witness my hand to the foregoing specification this 27th day of November, 1900.

JOHN L. ZESIGER.

Witnesses:

M. A. SHEEHAN,
R. B. MOSER.