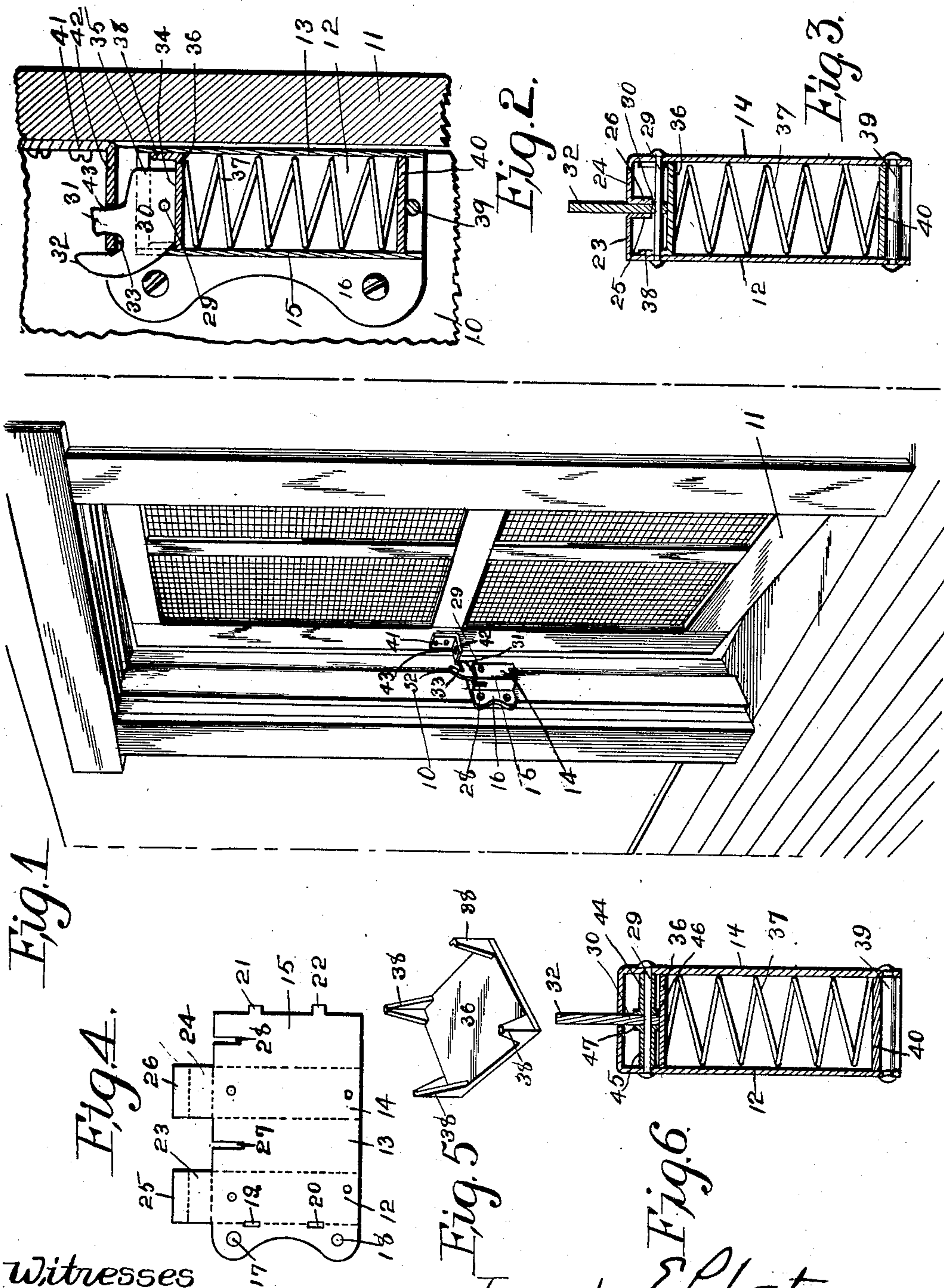


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AUTOMATIC DOOR CATCH.
APPLICATION FILED DEC. 13, 1905.

998,138.

Patented July 18, 1911.



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AUTOMATIC DOOR-CATCH.

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Specification of Letters Patent. Patented July 18, 1911.

Application filed December 13, 1905. Serial No. 291,638.

To all whom it may concern:

Be it known that I, EDWARD L. WATROUS, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented a certain new and useful Automatic Door-Catch, of which the following is a specification.

The objects of my invention are to provide an automatic door catch of simple construction, which is designed to exert sufficient force to draw the door to a completely closed position as it approaches this position, and to maintain the door yieldingly in a closed position and against a suitable amount of resistance so that while the door can be opened by pressing against it from the inside or drawing upon it from the outside with a reasonable amount of force, this door will be maintained closed and in a completely closed position constantly by the use of my catch, which is very desirable for use in connection with which my device is particularly adapted, although it may be used elsewhere when the results it accomplishes are sought to be obtained.

A further object is to provide a catch which will be easily thrown from its most forwardly to its rearwardly position by the action of the part of the device secured to the door as the door closes, and it will not so easily be released from its most rearwardly position as the door swings open; that is, the amount of force for swinging the latch from its inner to its outer limit of movement has to be greater than from swinging this latch from its outer to its inner position.

A further object is to provide a device in which the operative parts are largely protected and the danger of breaking them or damaging them in operation, or when out of operation is reduced to a minimum.

My invention consists in certain details in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my device attached to the door frame and door

as in use. Fig. 2 is a vertical, sectional view of the casing, cut parallel with the back of the casing, and showing the operative parts of the device. Fig. 3 is a vertical, sectional view of the casing cut at right angles to the sectional line in Fig. 2. Fig. 4 is a detail view of the sheet metal casing as it appears before being folded. Fig. 5 is a detail, perspective view of the sliding plate which retains the upper end of the spring in position, and the latch yieldingly at its limits of movement, and Fig. 6 is a sectional view of a modified form of the device, the section line being drawn through substantially the same points as in Fig. 3.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate the door frame, the numeral 11 to indicate the screen door with which it is particularly desirable to use my device. I have provided a casing which is designed to surround the operative parts of the device, including the latch and spring which maintains it, which casing is preferably stamped out of a single piece of sheet metal in the shape shown in Fig. 4, and then bent around so as to provide a back 12, a forward side 13, a front 14 and a rear side 15. The back 12 has an extension 16 with two openings 17 and 18 in it designed to receive screws for securing the casing to the door frame 10. This back also has two slots 19 and 20 in it designed to receive two projections 21 and 22 respectively from the edge of the rear side 15, so as to securely lock the rear side 15 and the back 12 in position relative to each other. The back portion 12 and the front portion 14 have the extensions 23 and 24 which are bent toward each other, and these extensions 23 and 24 have the members 25 and 26 bent downwardly at right angles to their body portions so that the members 25 and 26 will be substantially parallel with each other, and a sufficient distance apart to admit the latch, hereinafter described, between them.

In the upper ends of the front and rear sides 13 and 15 I have cut the slots 27 and 28, which are designed to be in line with the opening between the members 25 and 26, so that the latch has sufficient freedom of

movement to accomplish the results desired. The members 25 and 26 prevent the latch, hereinafter described, from moving laterally as it is operated by the closing and opening 5 of the door.

Extending across the casing and connecting the sides 12 and 14 is a pin 29, on which the latch 30 is pivotally mounted. This latch has two jaws 31 and 32 at its upper 10 end which forms an opening 33 between them designed to receive the part of the casing secured to the door. The lower portion of the latch 30 has two flat edges 34 and 35 substantially at right angles to each other, 15 the edge 34 being the longer of the two edges, and being designed to rest against the plate 36 which is maintained in its upper limit of movement by the spring 37 when the door is in a closed position, and the latch 20 at its inner limit of movement. When the door is open the edge 35 rests upon the plate 36, and the latch is at its forward limit of movement. The plate 36, which constantly engages the lower edges 34 and 35 25 of the latch has four upwardly extending lugs 38 which are designed to slide on the inner portion of the casing as the plate is moved upwardly and downwardly by the action of the spring and the latch.

30 I have provided a pin 39 which connects the lower ends of the back and front portions 12 and 14, upon which a detachably secured plate 40 is placed, upon which the spring 37 rests. If the spring becomes weak 35 at any time; that is, its tension is not sufficient, or it is too great, it may be removed by simply removing the pin and bottom portion, and a new spring put in its place.

I have provided a bracket preferably 40 made of angle iron, the back portion 41 of which is designed to be secured adjacent to one edge of the interior of the door, and the outwardly extending portion 42 of which has an opening 43 in it designed to receive 45 the jaw 31 of the latch 30 when the door is in a closed position.

In use and assuming that the latch is in the position shown in Fig. 1, and the door is about to be closed, the outer edge; that is, 50 the edge farthest away from the door, as it is swung toward its closed position enters the opening 33 between the jaws 31 and 32 and engages the jaw 32 and forces the catch from the position shown in Fig. 1 to that 55 shown in Fig. 2, partially against the resistance of the spring. The spring maintains the plate 36 firmly against the edge 34 of the latch and holds the door in a closed position against a reasonable amount of pressure. 60 When the door is opened, the operator pushes against it and the latch through the bracket is drawn from the position shown in Fig. 2 to that shown in Fig. 1. The jaw 31 is so shaped that but little, if any, danger 65 will be experienced in the jaw 31 slipping

in the opening of the door on account of its construction.

In the modified form of the device, the members 25 and 26 are omitted, and the sleeves 44 and 45 are mounted outside of 70 the pin 29 to provide a suitable bearing to take the place of the members 25 and 26, and to prevent any lateral movement of the latch. Aside from this detail change, the modified form presents no features different 75 from the ordinary form.

This device may be applied to and used on any variety of swinging doors or windows or in other places where an automatic separable catch is desired. 80

Having thus described my invention what I claim and desire to secure by Letters Patent of the United States, therefor is—

1. A door catch comprising, in combination, a sheet metal casing provided with a 85 slot at one end, a latch pivoted in said casing and having a pair of substantially parallel jaws extending through said slot, said latch being provided with two edges at substantially right angles to each other, a 90 plate slidably mounted in said casing to engage said latch, a coiled spring within the casing for yieldingly holding said plate toward the latch, and a substantially L-shaped bracket having one arm thereof provided 95 with an opening for interlocking with one of said jaws, the other arm of said bracket being adapted to be secured to one edge of the door.

2. A door catch comprising, in combination, a sheet metal casing provided with a 100 slot at one end, a latch pivoted in said casing and having a pair of substantially parallel jaws extending through said slot, said latch being provided with two edges at 105 substantially right angles to each other, a plate slidably mounted in said casing to engage said latch, said plate comprising a single piece of sheet metal having corner pieces extending at right angles to the body 110 of the plate to form guides for preventing the plate from tilting within the casing, a coiled spring within the casing for yieldingly holding said plate toward the latch, and a substantially L-shaped bracket having 115 one arm thereof provided with an opening for interlocking with one of said jaws, the other arm of said bracket being adapted to be secured to one edge of the door.

3. A door catch comprising, in combination, a hollow casing consisting of a single 120 piece of sheet metal bent into substantially rectangular form and provided with a slot at one end, a lateral extension on the back of said casing for securing the same to the 125 door frame, a latch pivoted in said casing and having a pair of substantially parallel jaws extending through said slot, said latch being provided with two edges at substantially right angles to each other, a plate 130

slidably mounted in said casing to engage
said latch, a coiled spring within the casing
for yieldingly holding said plate toward the
latch, and a substantially L-shaped bracket
5 having one arm thereof provided with an
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door.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
