D. E. SHRAUGER.

DOOR LATCH.

APPLICATION FILED NOV. 28, 1910.

998,592. Patented July 18, 1911.

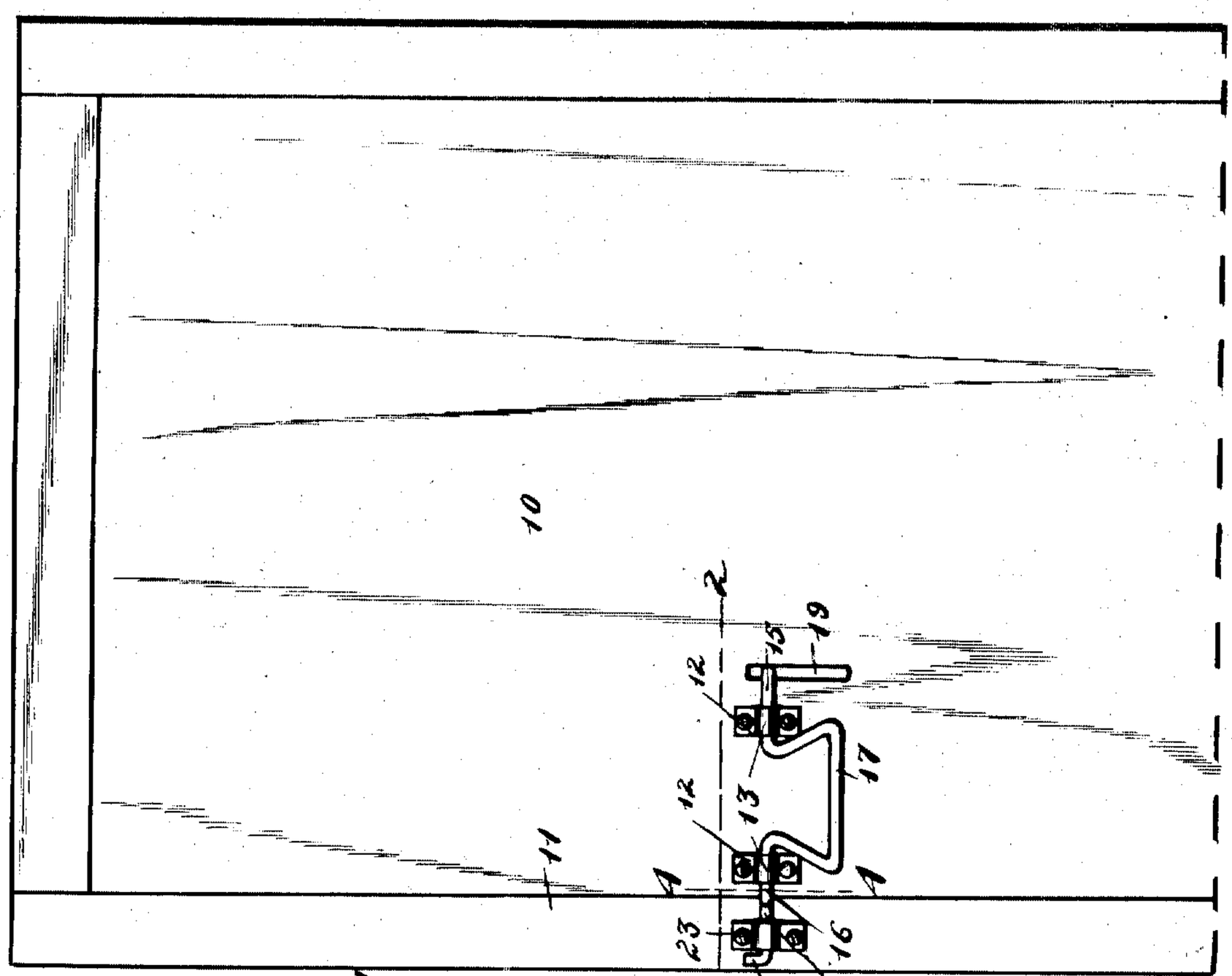


Fig 1

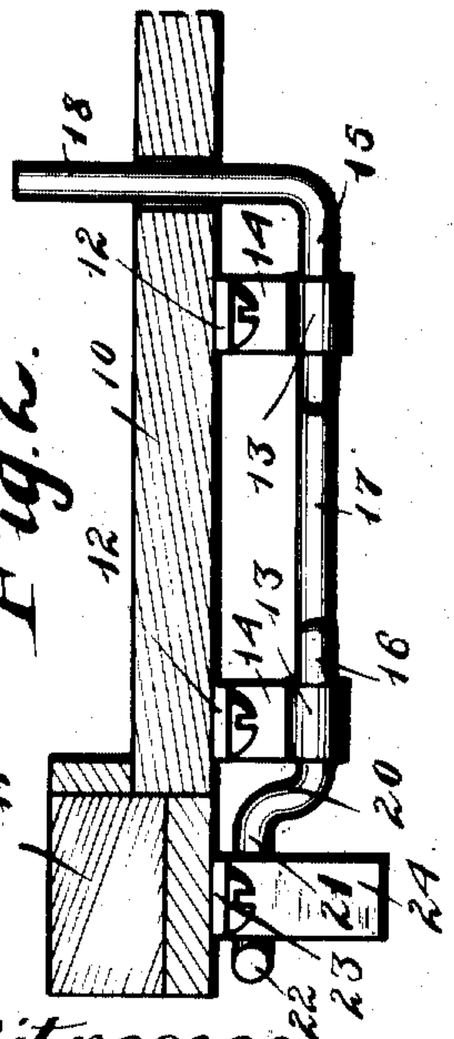


Fig. 2.

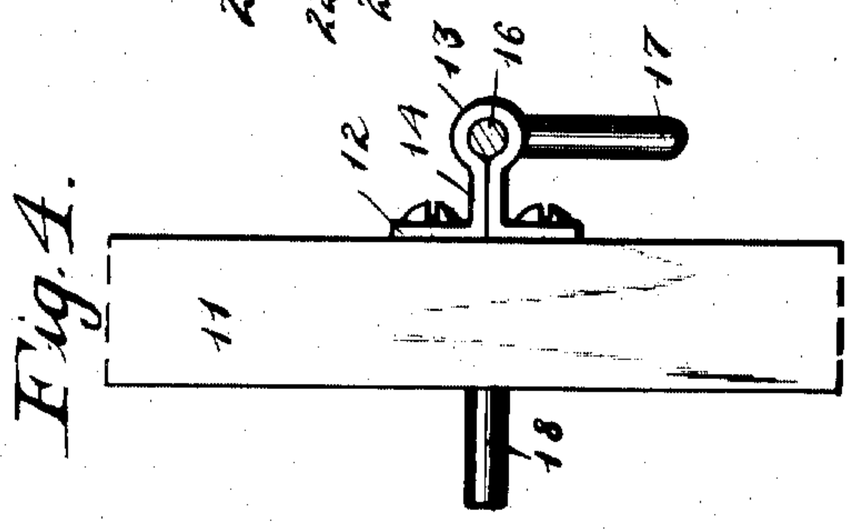


Fig. 4.




Fig. 3.

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# UNITED STATES PATENT OFFICE.

DARIUS EDGAR SHRAUGER, OF ATLANTIC, IOWA.

## DOOR-LATCH.

998,592. Specification of Letters Patent. Patented July 18, 1911.

Application filed November 28, 1910. Serial No. 594,562.

*To all whom it may concern:*

Be it known that I, DARIUS E. SHRAUGER, a citizen of the United States, residing at Atlantic, in the county of Cass and State of Iowa, have invented a certain new and useful Door-Latch, of which the following is a specification.

The object of my invention is to provide a door latch, of simple, durable and inexpensive construction that may be readily and easily applied to a door and door frame and that is so arranged that the handle portion will hang straight downwardly in a position spaced apart from the door so that an operator may readily and easily grasp it; and also to provide a retaining member for the door frame in which the retaining hook is close to the door frame so that it will not obstruct the passageway through the door opening; and also to provide a latch device in which the operator may easily grasp the handle portion and then by one single movement of pulling it toward him perform the double function of releasing the latch from the retaining member and opening the door; and also to provide a latch device which may be operated from the inside of the door by simply pressing upon the latch member and pushing it outwardly.

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 shows a side elevation of a door, and door frame having my improved latch device applied thereto. Fig. 2 shows a sectional view on the line 2—2 of Fig. 1, on an enlarged scale. Fig. 3 shows a detail, edge view of a door frame having my improved latch device applied thereto and shown in locked position, the dotted lines showing the latch device removed from the retaining member, and the parts in position for opening the door, and Fig. 4 shows a sectional view on the line 4—4 of Fig. 1 on an enlarged scale.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate the door and 11 the door frame. The latch device comprises two supporting brackets 12, each of which is preferably made of a single piece of sheet metal comprising a central loop 13 and a shank portion 14 which projects outwardly a considerable distance from the base of the bracket so that the loop portion 13 stands spaced apart from the door to which the base portion of the bracket is attached, as clearly illustrated in Figs. 2 and 4.

The latch proper is preferably formed of a single piece of metal rod having two bearing portions 15 and 16 in line with each other and mounted in the loops 13. Between the loops 13 a handle portion 17 is formed to hang straight downwardly. At one end of the rod is a second handle portion 18 projecting horizontally through a slot 19 formed in the door. At the end of the bearing portion 16 the rod is provided with a crank arm 20 that extends inwardly toward the door and on the end of the part 20 is an engaging portion 21 for the receiving member, which engaging portion is extended parallel with the bearing portions 15 and 16 and at the end of said engaging portion is an upturned end 22.

The receiving member for the latch is designed to be attached to the door frame and is formed with a base 23, a flat top portion 24, an inclined portion 25 extending downwardly from the outer end of the part 24 and toward the door frame, and a shoulder 26 at the rear of the inclined portion adjacent to the door. The part 21 of the latch member is so arranged relative to the inclined surface 25 that when the door is swung to a closed position the part 21 will strike upon the inclined portion 25 and tilt the latch device slightly enough to permit the part 21 to pass in the rear of the inclined portion and to lie against the shoulder 26 as shown in Fig. 3.

It is obvious that the latch device made, as shown in the drawings, is of very simple, inexpensive and durable construction. Furthermore, it is efficient for all of the purposes for which a device of this kind is intended; that is to say, it will hold a swinging door firmly against being accidentally unlatched and it will also hold a sliding door against being unlatched on account of the upturned end 22. Furthermore, by having the depending handle 17 spaced apart from the door and the part 21 projected toward the door frame, I accomplish the desirable result of providing a handle that may be easily grasped by the operator as there is room between the handle and the door for the insertion of the operator's fingers, and I also provide for a short retaining member

with the shoulder 26 close to the door frame thus obviating the objection of having the retaining member projecting a great distance from the door frame. Furthermore, my improved latch device may be readily and easily operated from the inside of the door by means of the extension handle 18.

I claim as my invention:

1. An improved door latch, comprising supporting means to be attached to a door and having bearings therein spaced apart from the parts of said supporting means that are designed to engage said door, a latch member pivotally mounted in said bearings and comprising two journal portions in line with each other mounted in said bearings, a handle between them normally depending downwardly, a crank arm on one end of said latch member extended horizontally inward toward the door to which the latch device is attached, a part at the inner end of said crank arm extended horizontally parallel with the said journal members, and a retaining member having a shoulder on its under surface to be engaged by the last mentioned part of the latch member.

2. An improved door latch, comprising supporting means to be attached to a door and having bearings therein spaced apart from the parts of the said supporting means that are designed to engage said door, a latch member pivotally mounted in said bearings and comprising two journal portions in line with each other mounted in said bearings, a handle between them normally depending downwardly, a crank arm on one end of said latch member extended horizontally inward toward the door to which the latch device is attached, a part at the inner end of said crank arm extended horizontally parallel with the said journal members, a retaining member having a shoulder on its under surface to be engaged by the last mentioned part of the latch member, and an upwardly inclined extension on the latch member to engage said retaining member.

3. An improved door latch, comprising supporting means to be attached to a door and having bearings therein spaced apart from the parts of said supporting means that are designed to engage said door, a latch member pivotally mounted in said bearings and comprising two journal portions in line with each other mounted in said bearings, a handle between them normally depending downwardly, a crank arm on one end of said latch member extended horizontally inward toward the door to which the latch device is attached, a part at the inner end of said crank arm extended horizontally parallel with the said journal members, a retaining member having a shoulder on its under surface to be engaged by the last mentioned part of the latch member, and an extension on one end of the latch member designed to extend through a slot in said door to be grasped by an operator on the side of the door opposite from the side to which the latch device is attached.

4. An improved latch, comprising two bearing members designed to be secured to a door and each having a shank to extend outwardly from the door and a loop at the outer end of the shank spaced apart from the door, a latch member formed of a single piece of metal rod and comprising two straight journal portions in line with each other, a handle member between the journal portions extended straight downwardly, an extension on one end of the latch member to project through said door so that it may be grasped by an operator on the side of the door opposite the side to which the latch is attached, a crank arm on the latch member extended horizontally toward the door to which the latch is attached, an engaging member extended horizontally from the end of said crank arm in line parallel with said journal members, and an upturned end on the end of said engaging portion, and a retaining member designed to be attached to a door frame and having on its under surface an inclined portion extended downwardly and toward the door frame, and a vertical shoulder at the lower end of said inclined portion, the space between the vertical shoulder and the door frame being only sufficient to receive the engaging portion of the latch member, substantially as and for the purposes stated.

Des Moines, Iowa, November 11, 1910.

DARIUS EDGAR SHRAUGER.

Witnesses:
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