J. H. LAWRENCE.

LATCH.

APPLICATION FILED JUNE 18, 1915.

1,166,998.

Patented Jan. 4, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

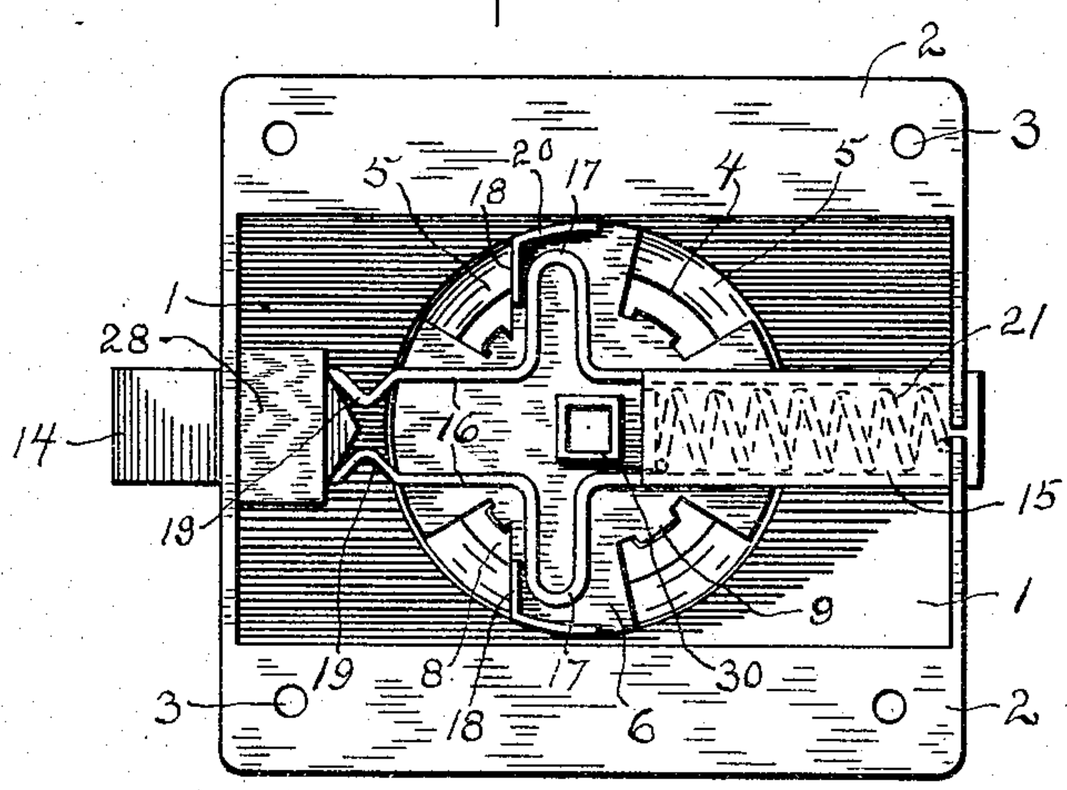
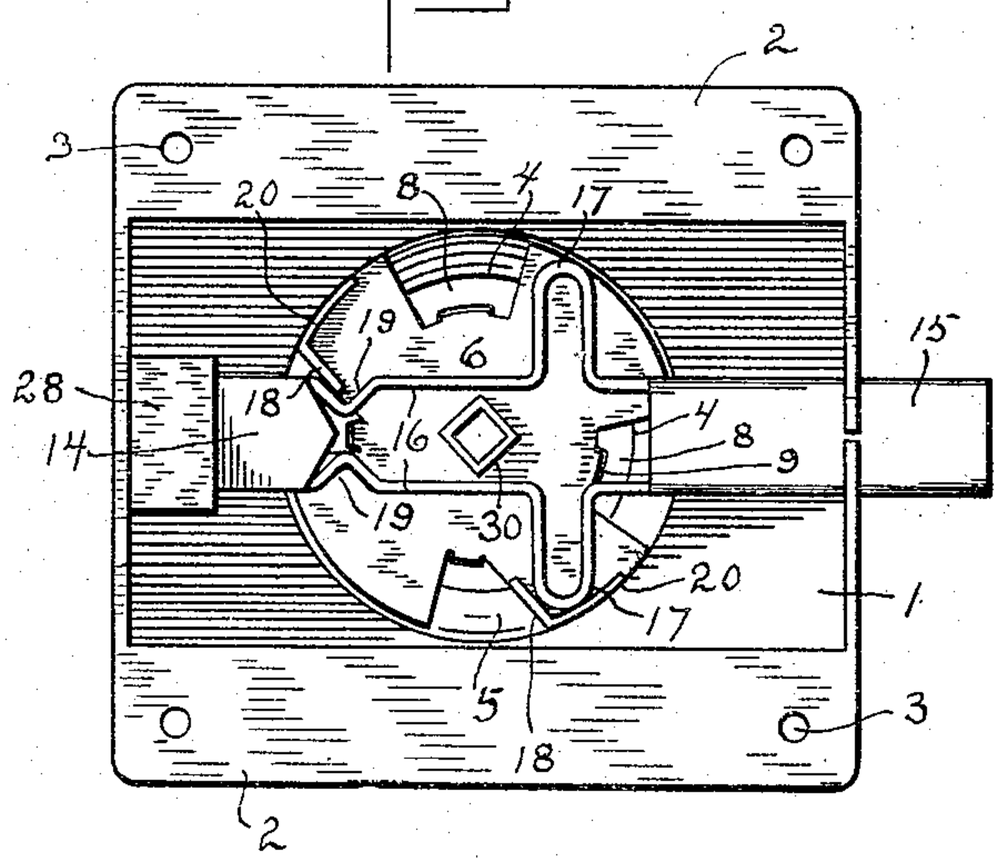


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

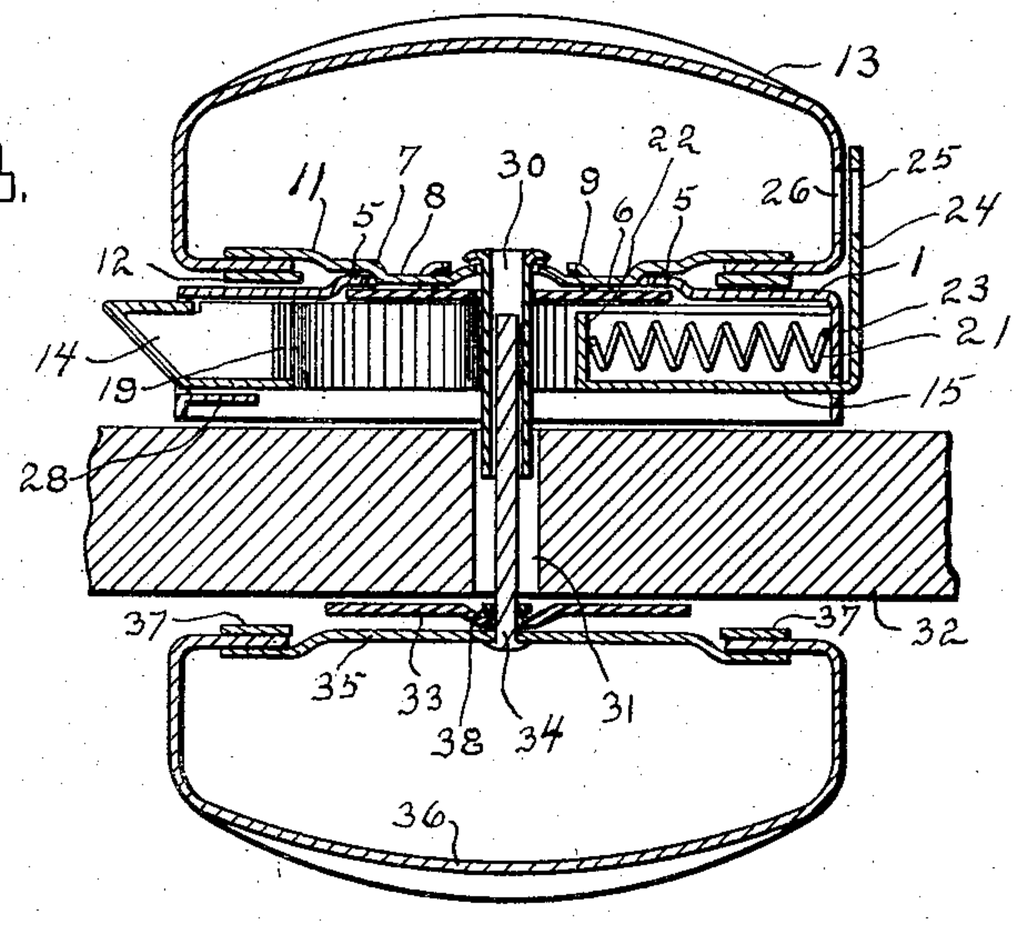


Fig. 4.

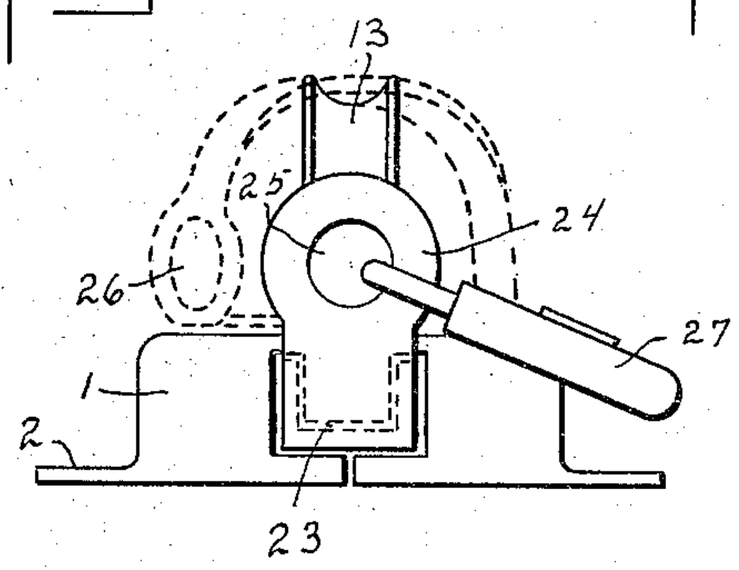


Fig. 5.

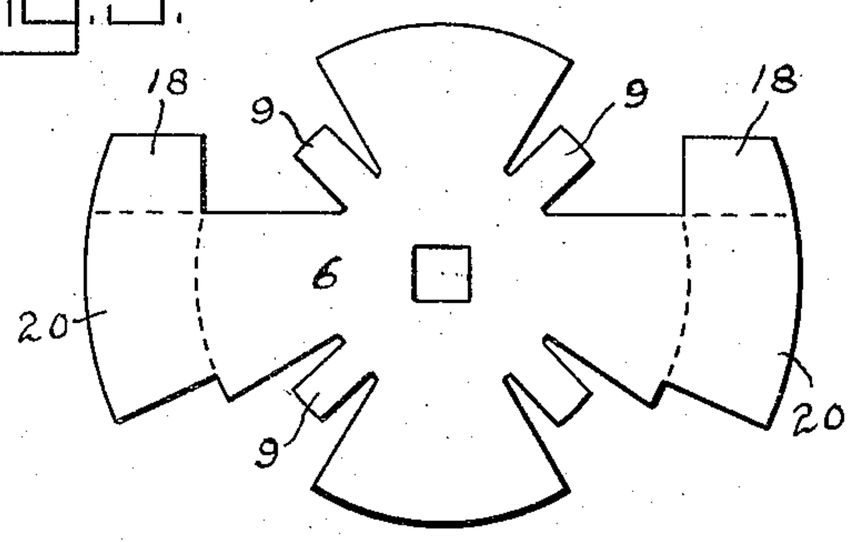
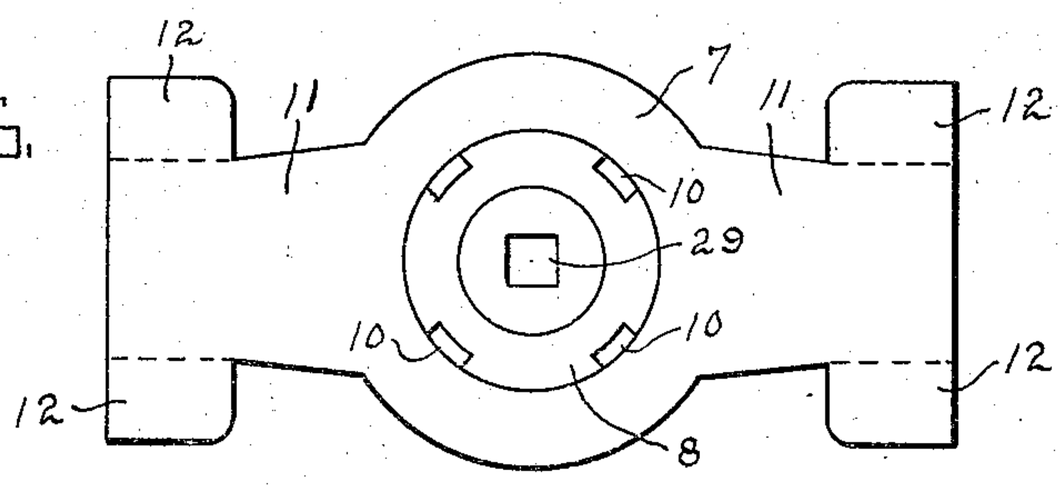


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN H. LAWRENCE, OF STERLING, ILLINOIS.

LATCH.

1,166,998. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed June 18, 1915. Serial No. 34,928.

To all whom it may concern:

Be it known that I, JOHN H. LAWRENCE, a citizen of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Latches, of which the following is a specification.

My invention pertains to latches, of that class which are employed in securing barn-doors, gates, and similar swinging objects in closed position.

The device is designed to be formed almost entirely of sheet-metal, resulting in a simple and durable construction and arrangement of the parts, and a minimum cost of production.

My invention also contains novel means whereby the same may be readily adjusted to closures of varying thicknesses, when the parts thereof are being secured in position; also means for locking the movable parts of the latch from movement, when the door or gate is closed.

In the drawings: Figure 1 is a plan view of the inner face of the latch, in position with the latch extended. Fig. 2 is a similar view, with the latch withdrawn. Fig. 3 is a vertical longitudinal section vertically of the latch and companion handle therefor. Fig. 4 is an end view of the latch. Fig. 5 is a plan view of a blank from which the plate 6 is formed. Fig. 6 is a plan view of the handle-plate 7, as the same appears before the handle is attached thereto.

1 represents a casing, provided with flanges 2, having openings 3 whereby such casing can be secured in place by screws or other fastening devices. The casing 1 is centrally provided with a circular opening 4, a portion of the casing surrounding such opening being pressed outwardly to form a rim 5.

6 is a plate of a modified Maltese cross pattern, which is positioned on the inner face of the casing 1, with its ends projecting into engagement with the rim 5. On the outside of the casing is a handle-plate 7, having a central depressed portion 8, projecting inwardly into the opening 4 of the casing, and in contact with the plate 6, to which it is attached by means of ears 9 on the plate 6 projecting outwardly through perforations 10 in the plate 7, and bent downwardly thereon.

The plate 7 is provided with oppositely disposed projections 11, having flanges 12 which are bent inwardly into engagement with the ends of a handle 13 to secure said handle to such plate. By turning the handle the plate 6 is given a partial rotation, for the purpose hereinafter set forth. By reason of the plates 6 and 7 embracing the casing at the edge of the opening 4 very snugly there is no looseness of the handle, such as would permit a lateral rocking thereof.

Slidable within the casing is a latch, comprising a bolt member 14 at one end thereof, and a housing 15 at the opposite end, such parts being united by plates 16, which are bent outwardly to form a pair of loops 17, adapted to be engaged by projections 18 on the plate 6. The plates 16 are also bent inwardly to form a pair of recesses 19, which accommodate the projections 18 when the plate 6 is turned, as shown in Fig. 2, or when thrown in the opposite direction. The bolt 14, housing 15, and plates 16 are preferably formed from one sheet of metal, stamped in the proper shape, and then bent to form the several parts. The plate 6 is also preferably formed from one piece of metal, as shown in Fig. 5, two of the ends of the plate being projected into flanges 20 with which the parts 18 are integral, the flanges 20 being first bent upwardly at a right angle to the plate 6, and then the projections 18 bent inwardly at approximately a right angle to the parts 20.

Within the housing 15 is a coiled spring 21, one end of which bears against the end 22 of the housing and the other end against a projection 23 at the end of the casing. By this means the bolt 14 is held normally in extended or locking position, and returned thereto after having been withdrawn. It will be evident that by turning the handle 13 in either direction one or other of the projections 18 will engage the adjacent loop 17 to move the bolt inwardly, as shown in Fig. 2. The ends of the loops are preferably rounded, as shown, whereby the parts 18 have a partial rocking action thereon, reducing the friction of such parts. The outer end of the housing 15 is on the outside of the casing 1, and is projected upwardly into a tongue 24 provided with an opening 25, which is normally in register with a similar opening 26 in one end of the handle 13. By this means the handle and bolt can be secured together by means of a padlock 27, or similar fastening device, such locking preventing a side movement of the handle

to turn the plate 6 or an outward movement of the housing 15, resulting in a double locking of such parts. The bolt 14 passes through an opening in one end of the casing, a part of the casing being partially cut away to form such opening, and bent inwardly to provide a support or guide 28 for the bolt, so as to prevent displacement thereof on its inner movement.

The plate 7 is provided with a central opening 29, in which is fixed a sleeve 30, rectangular in cross-section, which sleeve is of sufficient length to project beyond the casing 1 at its inner end, and into an opening 31 formed in the door, indicated in part at 32. A plate 33 is adapted to be secured to the outer face of the door passing through an opening in which is a spindle 34, similar in shape to the sleeve 30, and capable of rotating the same. Fixed to the spindle 34 is a plate 35, with which is connected a handle 36, by means of ears 37. Release of the handle is prevented by means of a collar 38 on the spindle 34, on the inside of the plate 33. The parts 30 and 34 have a slidable or telescopic relation, so that the same are readily adjustable to doors of varying thicknesses. By means of the handle 36 and connecting parts the plate 6 can be easily actuated from that side of the door opposite to the latch, to withdraw the bolt.

The casing 1 can be formed of one sheet of metal, pressed into proper shape. The handle plate and appurtenant parts can also be formed from one piece of metal, as indicated in Fig. 6, and the plate 35 can be similarly produced. The handles 13 and 36 are also constructed of thin metal, bent into proper form. There are therefore no parts about the device which call for castings, or the labor that attends the making and finishing of such heavier parts.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is:

1. In a device of the class described, a casing adapted to be secured to the face of a door and provided with a central circular opening; a handle-plate having a suitable handle and provided with a circular depressed portion rotatable in said opening and a plurality of radial perforations; a plate on the inside of said casing provided with a pair of inwardly projecting lugs and having a plurality of ears adapted to engage said perforations and lock said plates together; a latch slidable in said casing comprising a bolt at one end thereof and a housing at the opposite end, united by a pair of plates; a pair of loops struck laterally from said last-named plates adapted to be engaged by said lugs to operate said latch; and means for holding said latch in extended position.

2. In a device of the class described, a casing adapted to be secured to the face of a door and provided with a central circular opening; a handle-plate having a suitable handle and provided with a circular depressed portion rotatable in said opening and a plurality of radial perforations; a plate on the inside of said casing provided with a pair of angular projections and a plurality of ears adapted to engage said perforations and lock said plates together; a latch slidable in said casing comprising a bolt and a pair of parallel plates struck outwardly into a pair of loops provided with rounded ends having a rocking engagement with said projections and inwardly bent portions to accommodate the movement of said projections; and means for holding said latch in extended position.

3. In a device of the class described, a casing adapted to be secured to the face of a door and provided with a central circular opening, a handle-plate having a suitable handle and provided with a circular depressed portion rotatable in said opening; a plate on the inside of said casing rigidly attached to said handle-plate and provided with a pair of inwardly extending projections; a latch slidable in said casing comprising a bolt at one end thereof and a housing at the opposite end, united by a pair of plates, said housing being operable partially within and partially without said casing; a pair of loops formed laterally from said plates and adapted to be engaged by said projections; a spring in said housing adapted to hold said latch normally in extended position; and means on the outer end of said housing for engagement with said handle to lock the same from movement.

4. In a device of the class described, a latch adapted to be formed from one piece of sheet metal, comprising a bolt at one end thereof and a housing at the opposite end and a pair of plates uniting said bolt and housing and bent laterally at a central point to form a pair of loops with rounded engaging ends, and inwardly at a point between said bolt and loops to form a pair of angular recesses.

5. In a device of the class described, a casing adapted to be secured to the face of a door; a handle rotatably mounted in said casing and provided with an opening in one of its ends; latch-operating means connected with said handle; a latch slidable in said casing and provided with means cooperating with said latch operating mechanism; means for holding said latch normally in extended position; and a tongue projected from said latch on the outside of the casing, and provided with an opening normally in register with the opening in said handle, whereby said parts may be locked from movement.

6. In a device of the class described; a casing adapted to be secured to the face of

a door; and provided with a central circular opening; a handle held in rotatable relation to said casing; a plate on the inside of said casing, fixed to said handle, and provided with latch engaging means; a latch slidable in said casing and provided with means for engagement with said last named means; a sleeve fixed centrally of said handle and projecting through and beyond said casing; an auxiliary handle, secured to the opposite face of the door from that to which said casing is attached; and a spindle operable by said last-named handle, and having a sliding relation with said sleeve, said sleeve being operable thereby to actuate said latch from the opposite side of the door therefrom.

7. A device of the class described, comprising a casing, adapted to be secured to the face of a door, and provided with a central circular opening; a handle having a portion rotatable in said opening; a plate on the inside of said casing, rigidly secured to said handle, and provided with latch operating means; a latch slidable in said casing, comprising a bolt at one of its ends and a housing at the opposite end, united by a pair of plates, and provided with means for engagement with said last-named means; a sleeve fixed centrally of said handle and projecting through and beyond said casing; an auxiliary handle, secured to the opposite face of the door from the casing; and a spindle operable by said last-named handle, having a telescopic engagement with said sleeve, and adapted to operate the same to cause a movement of said latch from the opposite side of the door therefrom.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN H. LAWRENCE.

Witnesses:
W. N. HASKELL,
FRANK W. HASKELL.