R. J. ROATH.

LATCH.

APPLICATION FILED MAR. 2, 1921.

1,403,638. Patented Jan. 17, 1922.

Fig. 1.

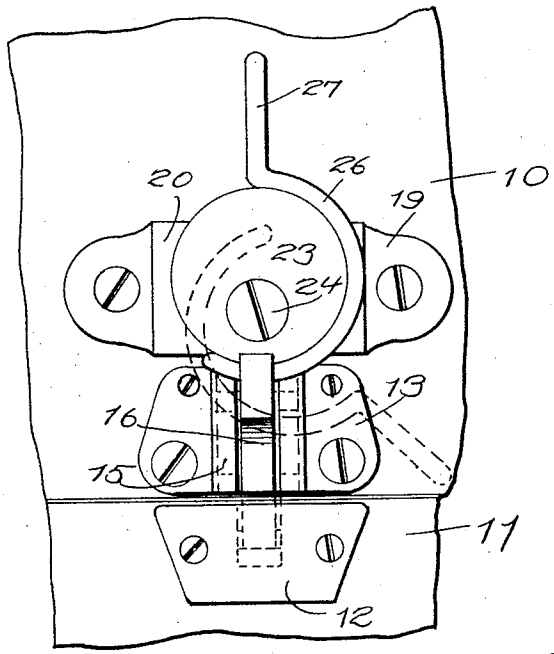


Fig. 2.

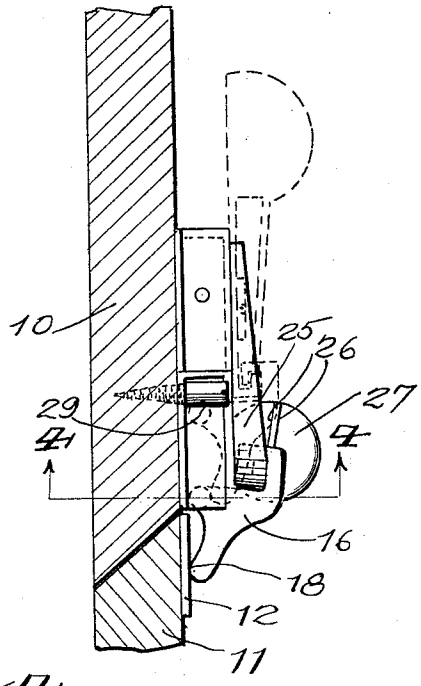


Fig. 3.

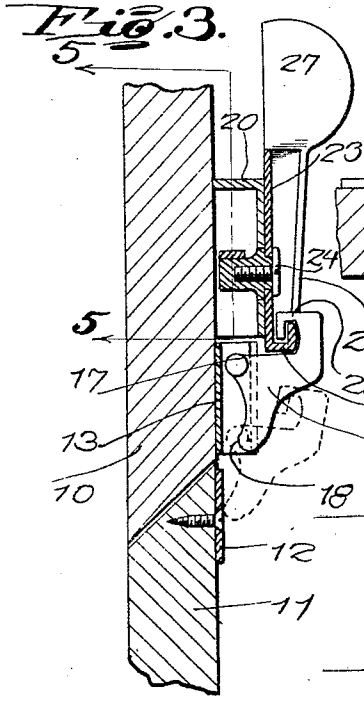


Fig. 4.

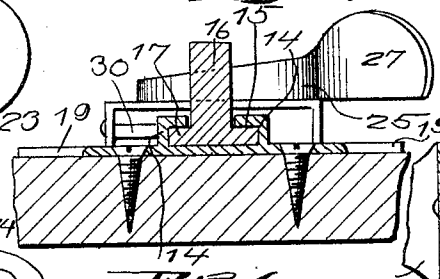


Fig. 5.

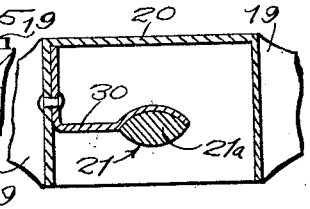


Fig. 6.



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LATCH.

1,403,638. Specification of Letters Patent. Patented Jan. 17, 1922.

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To all whom it may concern:

Be it known that I, ROLLIN J. ROATH, a citizen of the United States, residing at Ogden, in the county of Weber and State of Utah, have invented certain new and useful Improvements in Latches, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in latches, and more particularly to a latch adapted for use in holding closed doors and other hinged closures which must be compressed in position.

An important object of the invention is to provide a latch of this type, the locking part of which is simultaneously shiftable and rotatable, the shifting of the locking part bringing the same into alinement with the closure to be held in position and the rotation thereof causing the compressing of the closure to insure proper seating thereof. A structure of this type is particularly well adapted for use in connection with the doors of grain elevators in flour or grain mills wherein a very close seating of the door is necessary in order to prevent dusting out of the chute.

A further object of the invention is to provide a latch wherein the locking part when withdrawn is automatically held in withdrawn position whereby the breakage commonly occurring due to engagement of the door with the locking part in its return to closed position is prevented.

Other objects and advantages of the invention will become apparent throughout the course of the following description.

In the accompanying drawings wherein for the purpose of illustration is shown a preferred embodiment of my invention and wherein like reference characters designate like parts throughout,

Figure 1 is a plan view showing my lock, the parts being shown in the released position in solid lines and the locked position in dotted lines;

Figure 2 is a side elevation thereof, showing the parts in solid lines in the locked position and the dotted lines in the released position;

Figure 3 is a longitudinal sectional view taken therethrough;

Figure 4 is a section on the line 4—4 of Figure 2;

Figure 5 is a section on the line 5—5 of Figure 3, and

Figure 6 is a top plan view of the pivot pin.

Referring now more particularly to the drawings, the numeral 10 indicates a chute or receptacle, and the numeral 11 a door adapted to coact with the chute or receptacle to close the same. The door 11 is preferably provided at the locking point with a wear plate 12. To the chute or receptacle adjacent the door and alined with the wear plate 12 thereof, a guide plate 13 is secured which embodies upstanding parallel flanges 14 directed toward the wear plate and each provided upon its upper extremities with inwardly directed flanges 15.

The numeral 16 indicates a locking part slidably fitting between the inner or adjacent edges of the flanges 15 and embodying oppositely extending pivot portions 17 extending beneath the flanges 15 and preferably slidably engaging the inner or adjacent faces of the flanges 14. The locking part 16 embodies a rear extension 18 which, when the locking part 16 is slid toward the door within the guides adapted to overhang the wear plate 12 so that rotation of the locking part upon its pivots 17, will cause the underface of the extension 18 to engage the plate to wedge or cam the door or closure 11 into position.

Secured to the chute or receptacle 10 by means of ears 19 is a casing 20 having rotatably mounted in the upper wall thereof, a pin 21. The pin 21 has its upper end extending through the plate and polygonal in form for coaction with a similarly shaped opening formed eccentrically in a disc 23, the disc being held in position by means of a headed screw 24 or the like. The lower portion 21^a of the pin 21, or that portion projecting into the casing 20, is ovoid in cross section for a purpose presently to appear.

The plate 23 is provided upon a portion of its periphery with an upstanding marginal flange 25 which is tapered throughout its length and which is provided at its upper extremity with an inwardly directed flange 26 overhanging the plate. An extremity of the flange 25 is turned outwardly from the plate to form a gripping or operating handle 27. The locking part 16 embodies a tongue 28 passing about the flange 26 and engaging therebeneath.

An inspection of the drawings will, it is believed, render the operation of my device obvious, but the same is herein set forth in

order that it may not be misunderstood. When the locking part is in the position shown in Figure 1 the extremity 18 thereof is fully withdrawn so that it lies beyond the path of movement of the adjacent edge of the door 11. If it is desired to lock the door the gripping portion 27 is engaged and the disc 23 rotated, the outer surface of the flange 25 thereof engaging the locking portion and causing the same to shift longitudinally because of the eccentric mounting of the plate 23. Rotation of the locking part 16 about its pivot except as imparted thereto by the increase in height of the flange 25, is effectually prevented by the tongue 28 and at the same time a positive rotation is given to this locking part so that at the time the locking part is properly positioned upon the wear plate it applies considerable pressure thereto. In order to prevent warping and twisting of the plate 23 from the strain to which it is subjected in rotating the locking part and wedging the door 11 in closed position, I provide upon the plate 13 at the end thereof adjacent the casing 20, a pair of upstanding supports 29 which engages the under surface of the plate 23 as the same approaches the operative position at opposite sides of the point at which the strain is applied thereto and fully support the same. In order that the disc 23 may be held against accidental rotation when in either the operative or inoperative position, I secure within the casing 20 a spring 30 engaging against the ovoid portion 21^a of the pin 21.

From the foregoing it is believed to be obvious that I have constructed a latch which is particularly well adapted for use in that it enables very solid closure of a door and at the same time permits of the locking member being completely withdrawn so as to prevent its engagement by the door when moving through the closed position. It will furthermore be obvious that the construction as hereinabove set forth is capable of some change in modification without materially departing from the spirit of my invention, and I accordingly do not limit myself to such specific structure except as hereinafter claimed.

What I claim is:

1. In a latch, parallel guides, a locking member longitudinally shiftably and pivotally mounted within said guides, a rotatable disc disposed adjacent said guides and provided with an eccentric flange, said flange being tapered longitudinally, said flange embodying portions having interlocking engagement with said locking member whereby said locking member is simultaneously longitudinally shifted within said guides and rotated about the pivot thereof when said disc is rotated.

2. In a latch, parallel guides, a locking member longitudinally shiftably and pivotally mounted within said guides, a rotatable disc disposed adjacent said guides and provided with an eccentric flange, said flange being tapered longitudinally, said flange embodying portions having interlocking engagement with said locking member whereby said locking member is simultaneously longitudinally shifted within said guides and rotated about the pivot thereof when said disc is rotated, and means associated with said disc for retaining said disc in adjusted position.

3. In a latch, parallel guides, a locking member longitudinally shiftably and pivotally mounted within said guides, an eccentrically pivoted disc disposed adjacent said guides and provided with a marginal cam flange, embodying a portion having interlocking engagement with a portion of said locking member.

In testimony whereof I hereunto affix my signature.

ROLLIN J. ROATH.