

C. EYTALIS,
SLIDING DOOR LATCH.
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Patented Nov. 19, 1912.

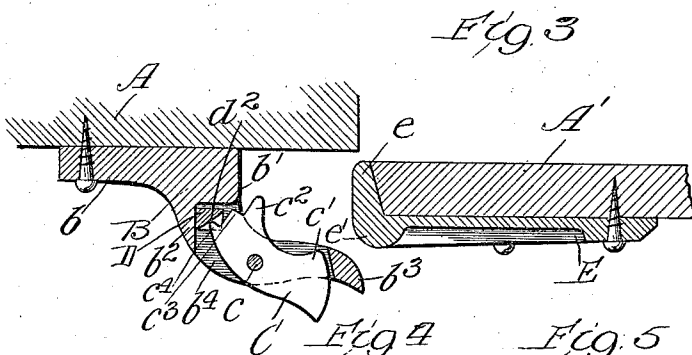
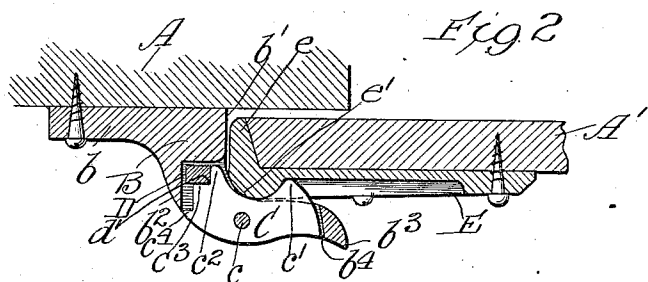
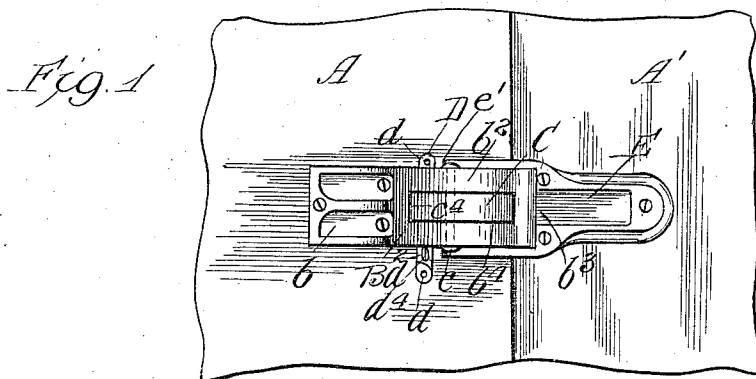
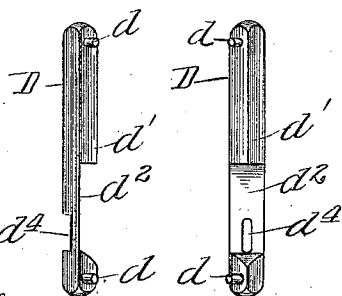
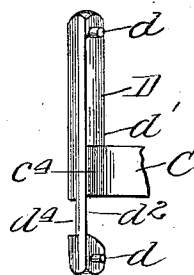


Fig. 6



Witnesses
Harry B. White,
Ray White.

By

Inventor
Charles Eytalis
W. W. Withenbury
Atty.

UNITED STATES PATENT OFFICE.

CHARLES EYTALIS, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-SIXTH TO EUGENE BAREN, ONE-SIXTH TO ROBERT WEINBERG, AND ONE-SIXTH TO JOSEPH BUTKUS, ALL OF CHICAGO, ILLINOIS.

SLIDING-DOOR LATCH.

1,044,872.

Specification of Letters Patent.

Patented Nov. 19, 1912.

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To all whom it may concern:

Be it known that I, CHARLES EYTALIS, a subject of the Czar of Russia, and residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Sliding-Door Latches, of which the following is a complete specification.

This invention relates to improvements in door latches and more particularly to an automatically locking latch for sliding doors.

Heretofore sliding doors for freight cars or for other constructions have usually been equipped with a staple and hasp for securing them in closed position, but such devices usually require considerable time and labor for their operation, since it is necessary for the operator to place the hasp over the staple and then insert some article usually a pin in the staple to hold the hasp in place.

The object of this invention is to provide a latch adapted to be automatically thrown into locking position by the closing of the door and thereby entirely obviating the necessity for the expenditure of any time or labor in securing the door after it is closed.

It is also an object of the invention to provide a device adapted to release the door by simply raising a gravity acting locking bolt, so that when the bolt is raised and the door slid open, the catch is automatically thrown out of locking position and the bolt is held from returning to locking position until the door is again closed.

It is a further object of the invention to provide a very cheap and quickly acting door latch for sliding doors and which is capable of being locked with a seal or with any preferred kind of lock.

The invention consists of the matters hereinafter described in the specification and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a fragmentary view showing the latch in side elevation and in closed position. Fig. 2 is a longitudinal section of the latch showing the catch in plan view and locked in closed position. Fig. 3 is a view similar to Fig. 2 but showing the door partly open and the catch

in position to be operated to locking position by the closing of the door. Figs. 4 and 5 are perspective views of the locking bolt. Fig. 6 is a fragmentary detail showing the means for holding the locking bolt in elevated position.

As shown in said drawings: A and A' indicate respectively fragmentary portions of a side of a car or building and a sliding door therefor, the latter of which may be hung in any desired manner. Rigidly engaged upon the side A and adjacent the door opening is a bracket which is indicated as a whole by B and which may be of any desired material, but preferably of cast metal. Said bracket as shown, comprises an attaching plate *b* adapted to be rigidly engaged to the side of the car with its inner end *b'* a short distance from the door opening. An arm *b²* extends from the end *b'* of said plate to a point approximately flush with the door opening, as shown more clearly in Figs. 2 and 3, and is curved outwardly a sufficient distance from the side of the car to permit the edge of the door to pass between the same and the side A. The outer end *b³* of said arm is also curved outwardly to form a deflector or guide to force the door against the car when being closed. Said arm is provided with a longitudinal slot *b⁴* in which is pivoted the catch C by means of a rivet or bolt *c* which passes through the arm and through said catch near its center. Said catch is provided on the inner side of the forward end with a nose *c'* which is rounded on both its front and rear sides to provide cam surfaces, and which, when the catch is in locking position, as shown in Fig. 2, projects into the recess between the arm and the side A. An aperture is provided through said arm and opens from above and below into the rear end of said slot, and slidably but non-rotatively engaged therein is the gravity acting locking bolt D. Said bolt, as shown more clearly in Fig. 1, is of greater length than the vertical thickness of the bracket B so as to permit of considerable vertical movement and may be provided at its ends with any suitable means for limiting such movement. As shown however it

is provided with laterally projecting pins or lugs d which engage against the top and bottom of the bracket and thereby limit the movement of the bolt.

5 The bolt, as shown more clearly in Figs. 4 and 5, is rectangular in cross section for approximately one half of its length from the top downwardly thereby providing a corner d' , which when the bolt is at the lower limit 10 of its movement, as shown in Figs. 1 and 2, projects down into the slot. For a distance below said corner d' the bolt is cut away diagonally to provide a flat face d^2 , which, 15 when the bolt is at the upper limit of its movement, lies within said slot behind the catch, as shown in Fig. 3. The lower end of said bolt is rectangular in shape and an aperture d^4 is provided through the bolt near 20 its lower end in which a seal or padlock may be engaged if desired. Near the rear end of the catch C and projecting from the inner face thereof is a contact finger c^2 which, when the catch is in open position, as shown 25 in Fig. 3, projects into the space between the arm b^2 and the side A, into the path of the door. At the rear of said finger c^2 is a shoulder c^3 , adapted when the bolt is down and the catch is closed to engage behind the 30 corner d' of the bolt, as shown in Fig. 2, and prevent the forward end of the catch from swinging outwardly. When the bolt is raised, however, to bring the flat diagonal face d^2 at the rear of the catch, said shoulder may pass sufficiently to permit the nose c' 35 to be retracted into the slot, as shown in Fig. 3, and a flange c^4 at the rear of said shoulder and toward the outer side of the catch therefrom, swings into contact with the face d^2 and prevents further outward movement of 40 the forward end of the catch. At the same time said flange has moved beneath the lower end of the corner d' and prevents the bolt from dropping until the catch is again returned to locking position. Rigidly engaged 45 on the door A' in alinement with said arm is a plate E which may also be a casting and is provided with a flange e on its forward end which engages around the edge of the door. On the forward end of said plate is 50 a rounding rib e' , which is preferably of greater length than the thickness of the catch C, and behind which the nose c' engages when the catch is in locking position.

The operation is as follows: When it is 55 desired to open the door the bolt D is raised, thereby removing the corner d' from behind the shoulder c^3 of the catch and bringing the flat face d^2 up into the slot. The door is now free to open and as it is 60 opened, the rib e' on the door plate engages the nose c' and forces it back into the slot. This action brings the flange c^4 around against the face d^2 of the bolt and not only prevents further action of the catch but,

by engaging beneath the corner d' of the 65 bolt, prevents the bolt from falling until the catch is again returned to locking position. In opening the catch the contact finger c^2 is projected into the path of the door, and 70 when the door is closed the rib e' engages said finger and forces it rearwardly, thereby swinging the forward end of the catch inwardly and bringing the nose c' behind said rib. At the same time the flange c^4 is moved 75 outwardly from beneath the corner d' and the bolt falls by the action of gravity and the catch is again locked. When used upon cars a seal may be placed in the aperture d^4 to prevent the bolt being raised, or when 80 used for other than car doors any suitable lock may be engaged therein.

I claim as my invention:

1. In a device of the class described the combination with a bracket of a catch pivoted thereon, a notched sliding bolt in said 85 bracket adapted to lock said catch when in one position, and means on the catch adapted to engage in said notch and prevent the bolt from returning to locking position when 90 the catch is open.

2. In a device of the class described the combination with a bracket of a sliding bolt therein having a recess in one side thereof, a catch pivoted in said bracket to swing 95 transversely of the bolt and having a shoulder thereon adapted to enter said recess and abut against said bolt and limit its movement in one direction, and a shoulder above the recess in the bolt adapted when the bolt is in 100 one position to rest on said catch.

3. In a device of the class described the combination with a member adapted to be supported adjacent a door opening, of a catch pivoted therein, a movable bolt in said 105 member movable transversely of the catch, means on the bolt adapted to limit its movement in either direction and means on said catch adapted to throw the catch to locking position.

4. The combination with a member adapted 110 to be supported adjacent a door opening and to hold the door from swinging outwardly when the door is closed, of a catch pivoted therein, a vertically movable bolt at the rear of said catch and adapted when 115 at the lower limit of its movement to hold the catch in closed position, means on the catch adapted to hold the bolt in elevated position when the catch is open, and means 120 for automatically releasing said bolt when the door closes.

5. In a device of the class described the combination with a bracket having a slot therein, of a catch pivoted in said slot and provided with a shoulder at its rear end, a 125 vertically movable bolt in said bracket adapted when at the lower limit of its movement to engage said shoulder and hold the catch

in closed position, means on the bolt adapted to limit its movement in either direction, means on said catch adapted to hold the bolt in elevated position when the catch is open and means for closing said catch and releasing said bolt.

6. In a device of the class described the combination with a bracket adapted to be engaged to a wall adjacent a door opening and to permit the door to enter between the same and said wall, of a catch pivoted on said bracket and adapted to project from the inner face of the bracket when in closed position, a contact finger on the rear end of said catch adapted to project from the inner face of the bracket when the catch is open, a vertically movable bolt adapted when at the lower limit of its movement to lock the catch in closed position, means on the bolt adapted to limit its movement in either direction, means adapted to hold the bolt in elevated position when the catch is open, and means adapted to engage said finger and close the catch and release the bolt.

7. In a device of the class described the combination with a bracket adapted to be engaged to a wall at the side of a door opening, of a plate adapted to be engaged to a door and project between the bracket and wall when the door is closed, a laterally swinging catch pivoted in said bracket and adapted to lie concealed in the bracket and to engage said plate when the door is closed, a finger on the catch adapted to project into the path of the plate when the door is open, and a longitudinally movable bolt in said bracket adapted to lock the catch in closed position.

8. In a device of the class described the combination with a bracket of a catch pivoted therein, a longitudinally movable bolt having a shoulder on one side thereof beneath which the rear end of the catch is adapted to pass, and a pair of shoulders on the rear end of the catch adapted to engage the bolt and prevent outward movement of the catch at both limits of its movement.

9. In a device of the class described, the combination with a bracket of a laterally swinging catch pivoted therein and having an inwardly directed projection on each end, a bolt having a shoulder thereon beneath which the rear of the catch projects when at one limit of its movement, there being a pair of shoulders on the catch adapted to engage against the bolt at either limit of movement of the catch and hold the catch from outward movement and means adapted to enter behind the bracket and engage one of said projections to throw the catch and cause the other projection to lock said means behind the bracket.

10. In a device of the class described the

combination with a bracket of a laterally swinging catch therein, a vertically movable bolt adjacent said catch, and a pair of shoulders on the catch adapted to engage against the sides of the bolt when the bolt is in one position and prevent both inward and outward movement of the catch.

11. A door latch, comprising a bracket having an aperture therethrough, a vertically movable bolt in said aperture, said bolt having a shouldered notch therein, a catch pivoted on the bracket and adapted when in open position to have one end project into said notch and support the bolt, and shoulders on said end adapted when the bolt is in its lowermost position to engage opposite sides of the bolt and hold the catch from movement in either direction.

12. A door latch, comprising a bracket, a catch pivoted on the bracket and having a projection at each end, either of which projections is adapted to project from the face of the bracket dependent upon the position of the catch, a locking bolt slidably mounted in the bracket and adapted to lock the catch in closed position, and a member adapted to move along the face of the bracket and contact one of the said projections and thereby move the other projection behind the member.

13. In a device of the class described the combination with a bracket, of a catch pivoted therein and adapted to move in a horizontal plane, a finger on the rear end of the catch and adapted when the catch is in release position to project beyond the face of the bracket, a bolt vertically movable in the bracket at the rear of the catch, a projection on the rear end of the catch adapted to engage the bolt and hold the catch in closed position, a notch in the bolt adapted to permit the projection to pass when the bolt is raised, and a projection on the catch adapted to contact with the back of the notch and prevent further movement of the catch.

14. In a device of the class described the combination with a bracket, of a catch pivoted therein to move in a horizontal plane, a bolt slidably mounted on the bracket and adapted to move transversely of the catch and when in one position to lock the catch in closed position, and when in another position to permit the catch to be opened, and horizontally movable means adapted to throw the catch to closed position.

15. In a device of the class described the combination with a bracket, of a catch pivoted therein and having a projection at each end, a bolt slidably mounted in the bracket at the rear of the catch and having a notch for the passage of the rear projection when the bolt is in one position, and

having a shoulder adapted to engage said rear projection and hold the catch in closed position, and a movable plate adapted to throw the catch to closed position and adapted to be held from movement by the front projection on the catch.

In testimony whereof I have hereunto

subscribed my name in the presence of two witnesses.

CHARLES EYTALIS.

Witnesses:

W. W. WITHEBURY,

W. A. SWAREN.

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