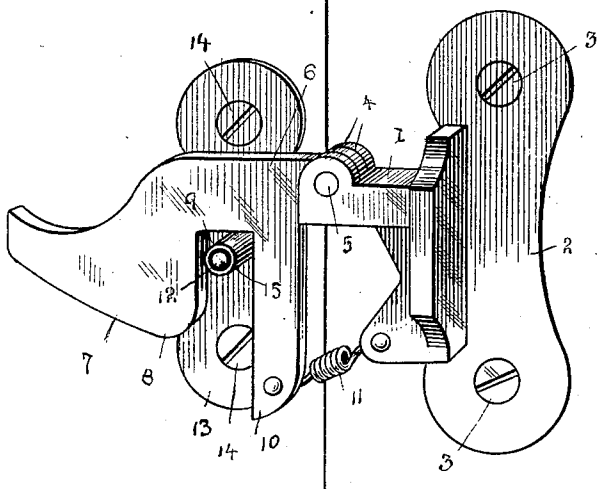
No. 691,520. Patented Jan. 21, 1902.

G. E. BALLARD.

LATCH.

(Application filed Apr. 24, 1901.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE E. BALLARD, OF PHILADELPHIA, PENNSYLVANIA.

LATCH.

SPECIFICATION forming part of Letters Patent No. 691,520, dated January 21, 1902.

Application filed April 24, 1901. Serial No. 57,214. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. BALLARD, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Latches, of which the following is a specification.

This invention relates to improvements in latches for doors.

The object of the present invention is to provide an improved construction of latch which is especially designed for use in connection with car-doors and which latch is entirely automatic in its operation, so that the same will effectually lock the door without the assistance of the person closing the door and at the same time will automatically unlock when it is desired to open the door, the latch being of that type primarily designed for use upon sliding doors.

A further object of the invention is to provide a latch which is extremely simple in construction and yet efficient in its operation and one which may be manufactured at trifling expense.

With these general objects in view the invention consists in the novel construction, combination, and arrangement of parts, as will be hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the appended claim.

In the drawing the figure is a perspective view of a latch constructed in accordance with the present invention.

Referring to the drawing, the numeral 1 designates a supporting-bracket, said bracket being substantially of an inverted-L shape, and connected to one side of the bracket is an attaching-plate 2, by means of which the bracket 1 is maintained in applied position, screws 3 or their equivalents being employed for this purpose. The horizontal shank of the bracket 1 extends from a laterally-extending vertical flange integral with the attaching-plate 2 and at its free end is provided with a pair of spaced parallel ears 4, and pivotally secured between said ears by means of a pin 5 is the latch 6. The latch is provided with a head 7, the under edge of which is beveled in a gradual manner from its forward end to its rear end, and said head at its rear end is rounded, as at 8, to provide an engaging nose. Spaced from the head 7, to constitute the rear wall or side is a notch 9, and lying in parallel relation to the rear edge of the head 7 is a downwardly-extending arm 10, the lower end of which projects below the lower edge of the head 7, and connected to the lower end of said arm is one end of a retractile spring 11, the other end of said spring being connected to the lower portion of the supporting-bracket 1. It will thus be seen that the spring 11 normally exerts its tension to draw the arm 10 toward the bracket 1, and thus hold the latch 6 in the proper operative engagement with the latch-pin.

The numeral 12 designates a pin with which the latch 6 is adapted to engage, and said pin is mounted upon an attaching-plate 13, secured in proper relation to the latch proper through the medium of screws 14 or their equivalents, and mounted upon the pin 12 is an antifriction-roller 15, which roller is in the form of a sleeve. It will thus be seen that through the medium of the roller 15 the friction between the latch 6 and the pin 12 is reduced to a minimum, said pin being relieved of direct contact with the latch proper.

As before premised, the present invention is primarily designed for use in connection with sliding car-doors, and in practice the latch is attached to the doors, as clearly shown in the drawing, the supporting-bracket 1 being applied to one door and the pin 12 being applied to the other in the proper relation to be engaged by the latch 6. The point of attachment is preferably near the upper ends of the doors in order to be out of the way, and it will be seen that when the doors are closed the head 7 of the latch 6 rides over the pin 12, and immediately upon the nose 8 passing beyond said pin the head 7 is drawn down by the spring 11, so that the pin 12 is engaged by the notch 9. In such position the latch effectually retains the doors closed; but when it is desired to open the doors it is simply necessary to apply sufficient pressure thereto to overcome the tension of the spring 11 upon the latch proper, 6. When this has been done, it will be seen that the head 7 moves upwardly, with the pin 5 as its center of movement, and when said head has moved upward a sufficient distance, turning upon the pin 12 as an axis, said head is freed from

engagement with said pin by the nose 8 riding over the same. This function or operation is attained by means of the latch being pivotally connected to one side of and above the locking-recess, so that when force is applied to pull the doors apart the latch rides upon the pin and is finally released from engagement. This permits the complete separation of the doors, and when such has been effected the spring 11 returns the latch proper to the position shown in the drawing, and in which position said latch proper is adapted to again engage the pin 12 when brought into the proper relation therewith.

While the form of the invention herein shown and described is what is believed to be a preferable embodiment thereof, the right is reserved to modify or vary the invention as falls within the spirit and scope thereof.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A latch, comprising a plate, adapted to be secured to the face of a door, formed with an outwardly-projecting vertical flange and a horizontally-projecting arm formed with bearing ears or lugs, a latch, pivotally supported between said lugs to one side of and above the locking-recess, formed with a head having an inclined under edge, a locking-recess and a vertical depending arm at the rear of the latch extending below the plane of the nose of the latch, and a retractile spring having one end secured to the lower end of the depending arm and the other end secured to the said plate, combined with a plate adapted to be secured to the other door, and formed with an outwardly-projecting pin, and an antifriction-roller on the pin to engage in the recess of the latch.

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

GEORGE E. BALLARD.

Witnesses:

RICHARD CONDON,

JAMES F. COURTNEY.