(No Model.)

A. A. PAGE.

LATCH.

No. 429,948. Patented June 10, 1890.

Fig 1

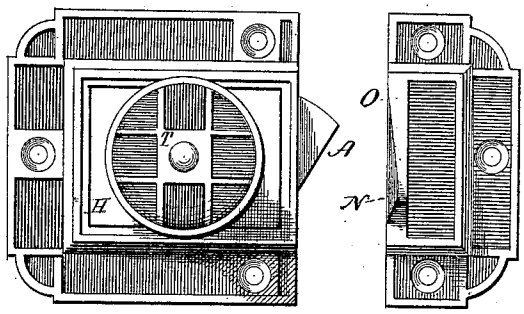


Fig 2

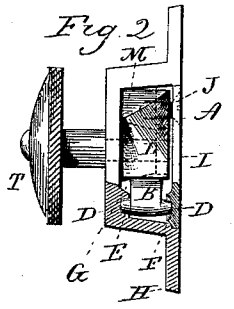


Fig 3

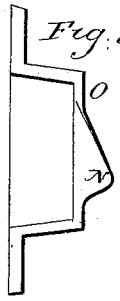
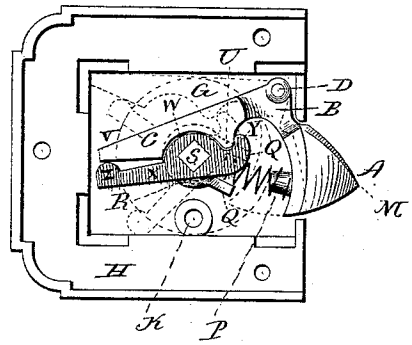


Fig 4



Witnesses
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UNITED STATES PATENT OFFICE.

ALBERT A. PAGE, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE SARGENT & COMPANY, OF SAME PLACE.

LATCH.

SPECIFICATION forming part of Letters Patent No. 429,948, dated June 10, 1890.

Application filed September 23, 1889. Serial No. 324,756. (No model.)

To all whom it may concern:

Be it known that I, ALBERT A. PAGE, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Latches; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in front elevation of one form which my improved latch may assume, with the strike separated from it and shown just to one side; Fig. 2, a view of the latch in end elevation looking toward the nose of the bolt; Fig. 3, a view of the strike in inside elevation, and showing the cam thereof in its relation to the nose of the bolt; Fig. 4, a view of the latch in inside elevation, with the retracted position of the bolt indicated by broken lines.

My invention relates to an improvement in latches, the object being to reduce frictional resistance and strain to the minimum, and to produce a simple, strong, and reliable latch of few and readily made and assembled parts.

With these ends in view my invention consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claim.

As herein shown, the latch-bolt consists of a beveled nose A, having a short shank B, and of a tail C, merging into the said shank and forming about a right angle with the same and the nose. Two small pivots D D, respectively formed upon the opposite faces of the bolt at the angle thereof, enter shallow pockets E and F, the former being located in one of the outer corners of the chamber G in the case H, and the other being located in one of the corners of the plate or cap I, which closes the said chamber, and which is secured to the case by a screw J entering a threaded stud K rising within the said chamber. The nose of the bolt is shaped to form a winding bevel L, beginning at its lower outer edge and extending diagonally in a circular line to its inner upper edge, where it merges into a drop-off M, as best shown by Fig. 2 of the drawings. The said beveled nose of the bolt co-operates with a cam N of opposite inclination formed upon the inner edge of the strike O, which conforms in general outline and ornamentation to the case H. A pin P, formed upon the inner face of the nose, is provided for the engagement of one end of a coiled spring, the opposite end whereof is held in place between two small ears Q Q, projecting outward with a slight upward inclination from the perforated stud R, which forms a bearing for the spindle S of the knob T. The operation of the said spring is to sustain the nose of the bolt in a normally-thrown position, in which it is shown in full lines in the drawings. The inner face of the tail of the bolt is provided near its forward end with a tooth U, and at its rear and outer end with an inclined bearing-surface V, being cut away, as at W, between the said tooth and bearing-surface to clear the stud R, before mentioned, and the two-armed lever X, which is rigidly attached to the inner end of the knob-spindle. The forward end of the said lever X is provided with a bent finger Y, which co-operates with the tooth U to turn the bolt on its pivots, and retract its nose, as shown by broken lines in Fig. 4 of the drawings. The opposite end of the said lever is provided with a straight finger Z, for co-operation with the inclined bearing-surface V upon the tail of the latch in turning the latch upon its pivots and retracting its nose. Under this construction the nose of the bolt is retracted within the case by turning the knob in either direction, the bent finger and tooth operating to retract the bolt by its tail by pulling the same inward, and the bearing-surface and straight arm operating to retract the bolt by lifting its tail and thus swinging its nose inward.

My improved latch operates with very little friction and with the minimum of strain upon its several parts, and particularly in automatically relocking when the winding bevel of the nose of the bolt engages with the oppositely-inclined cam of the strike, causing the bolt to retire with only a small surface, which is constantly changed in contact with the strike.

By making the nose of the bolt and its catch

at a right angle with each other, and pivoting them within the case at a point eccentric to the knob-spindle, I am enabled to make the parts very strong, and at the same time heavy and compact, whereby I secure a very strong latch of small size. Moreover, the leverage obtained by my improved construction causes the bolt to respond very quickly to the turning of the knob.

It is apparent that in carrying out my invention some changes from the construction herein shown and described may be made. I would therefore have it understood that I do not limit myself to the exact form and arrangement of parts herein set forth; but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

What I claim is—

In a latch, the combination, with a knob and a knob-spindle, of an operating-lever having a short bent finger extending forward and a longer straight finger extending rearward and in line with the said short finger, and a bolt hung diagonally in front of the operating-lever, and having a beveled nose and a tail located at an angle with respect to each other, the latter extending parallel with the fingers of the operating-lever, and having a tooth for engagement by the bent finger of the lever, and a bearing-surface for engagement by the straight finger thereof, and the bent finger and tooth co-operating to pull the bolt inward, and the straight finger and bearing-surface co-operating to retract the bolt by lifting its tail, substantially as described.

ALBERT A. PAGE.

Witnesses:
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