

(No Model.)

A. NELL & T. J. CORCORAN.
GATE LATCH.

No. 507,155.

Patented Oct. 24, 1893.

Fig. 1.

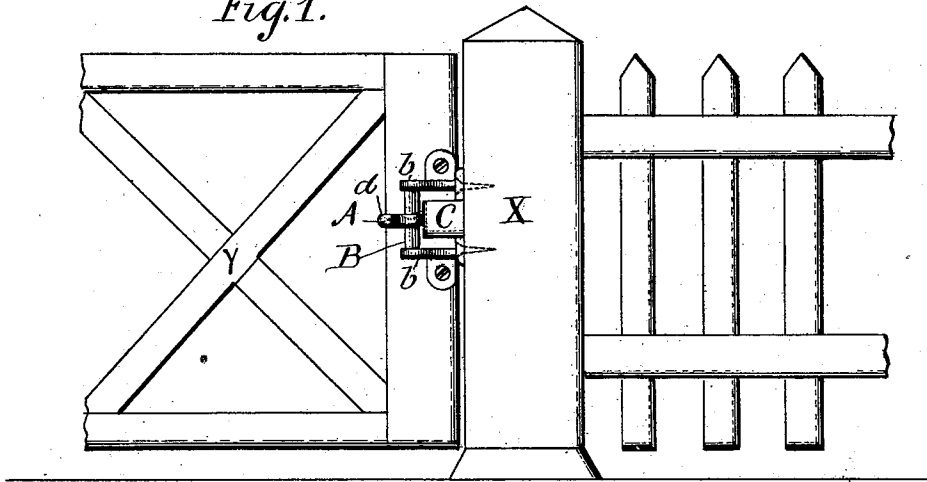


Fig. 3.

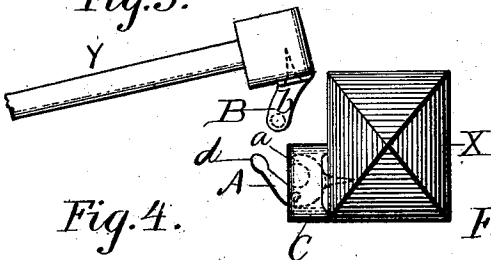


Fig. 2.

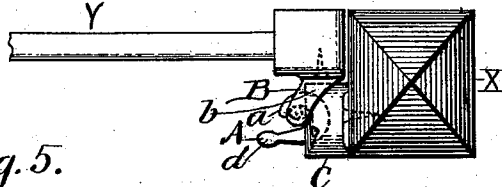


Fig. 4.

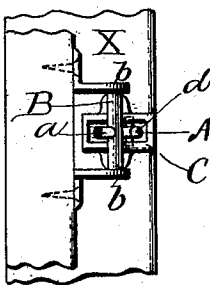


Fig. 5.

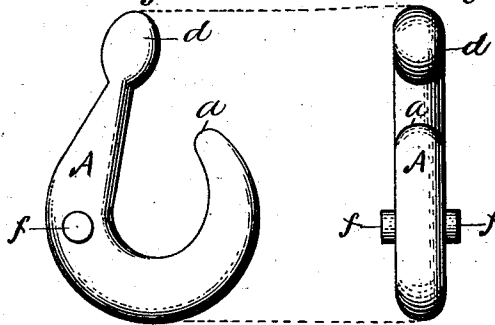


Fig. 6.

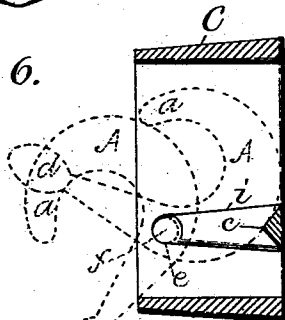


Fig. 7.

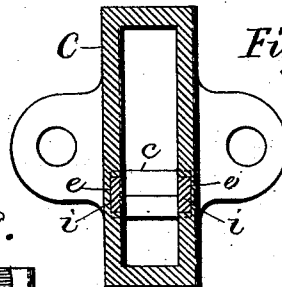
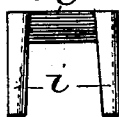


Fig. 8.



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UNITED STATES PATENT OFFICE.

ABRAHAM NELL AND THOMAS J. CORCORAN, OF PERU, INDIANA.

GATE-LATCH.

SPECIFICATION forming part of Letters Patent No. 507,155, dated October 24, 1893.

Application filed April 7, 1892. Serial No. 428,218. (No model.)

To all whom it may concern:

Be it known that we, ABRAHAM NELL and THOMAS J. CORCORAN, of Peru, in the county of Miami and State of Indiana, have invented certain new and useful Improvements in Gate-Latches, of which the following is a specification.

The invention relates to latches such as are employed to hold a gate in a closed position, which automatically latch when the gate is closed, and which are designed to be unfastened by the hand when it is desired to open the gate.

The object of the present invention is to produce an improved latch of this character, having especially in view certainty in automatic latching and ease in unfastening, combined with great simplicity in construction and durability of the parts.

The invention is illustrated in the accompanying drawings, wherein—

Figure 1, is a view from the inside of a gate showing the latch applied. Fig. 2, is a top view of the latch with the gate indicated in its closed position. Fig. 3, is a view similar to Fig. 2, but with the gate unlatched. Fig. 4, is a face view of the latch, that is, a view looking toward the face of the gate-post, the parts being here shown in the latched position. Fig. 5, illustrates the swinging latch A, by itself. Figs. 6, and 7, are respectively horizontal and vertical longitudinal sections of the frame or casing in which the swinging latch A, is journaled, and Fig. 8 is a view of the filling-piece.

The swinging latch A, and its casing C, are carried by the gate post X, while the gate Y, carries a fixed catch-bar B, which co-operates with the swinging latch A to hold the gate. The catch-bar B is simply a stationary upright bar carried by the gate at the front edge thereof in line with the swinging latch on the gate post. Its form and arrangement are immaterial, except that it is preferably in an upright position approximately parallel with the vertical axis of the gate; and it may either form a part of the gate itself or may be an independent piece rigidly secured to the gate as shown.

In the form illustrated in the drawings the catch bar B, consists of a short cylindrical spoke supported by a pair of brackets *b b*

which are secured to the inner face of the gate and hold the spoke or bar B, a short distance out from the face of the gate.

The swinging latch A, journaled in the frame or casing C, comprises a pivoted hook *a* adapted to engage the catch-bar B, and an operating lever *d* by means of which the pivoted hook is moved into and out of engagement with the catch-bar. The operating lever *d* is arranged to be moved automatically by the catch-bar when the gate is closed and to be moved by hand when the gate is to be opened.

The pivoted hook *a* constitutes the primary and characteristic feature of the improved gate-latch. It is so formed and pivoted that, when it is automatically moved into engagement with the catch-bar B, by means of the operating lever, it cannot be disengaged therefrom by outward pressure on the gate, and consequently it securely holds the gate in its closed position. The hook *a*, is sufficiently curved so that an outward motion imparted to the catch-bar through pressure upon the gate will not swing the hook back into its casing but will merely pull upon the pivots of the hook. The gate cannot be unlatched, therefore, except by manipulating the operating lever *d*. The curvature of the hook is, however, so planned that a very slight pressure upon the operating lever from the rear will cause the end of the hook to swing back of the line of pull of the catch-bar, thus releasing the catch-bar and permitting the opening of the gate. The hook has an evenly-curved concave inner surface with which the catch-bar co-operates, and it is rounded or beveled at its point as shown, so as to permit the hook to slip easily out of engagement with the catch-bar.

It will be noted that the hook *a*, in its normal position when the gate is open, is entirely within its casing C, while the operating lever *d* projects forward at an angle from the casing into the path of the catch-bar B, of the gate, (see Fig. 3.) When the gate is closed, the catch-bar B strikes the lever *d* and moves it back, thereby swinging out the hook *a* across the path of the catch-bar. The lever *d*, when the gate is latched, projects perpendicularly from the casing ready to be manipulated to unlatch the gate. When the

gate is unlatched by manipulation of the operating lever *d*, the hook *a* moves back with in its casing, and the operating lever is left projecting forward a short distance beyond the front of the casing as before ready to be again struck by the catch-bar on the closing of the gate.

A special casing C, for the swinging-latch A, is illustrated in the drawings, and is shown in detail in Figs. 6, and 7. This consists of a quadrangular frame adapted to be secured to the surface of the gate-post, having recesses *e e* in its opposite sides which serve as bearings for the pivots *f f* of the latch-hook *a*. Preferably the swinging latch A, is made separable from its casing C, as shown, the recesses *e e* being in the form of parallel grooves extending from the rear of the frame C, to a point near the front of the frame, and a U-shaped filling-piece *c* is provided, the legs *i i* of which fit in the grooves *e e* and maintain the pivots *f f* of the latch-hook at the forward ends of the grooves. The filling-piece *c* fits loosely in the grooves and does not interfere with the free swinging of the latch, and the filling-piece is kept in place simply by the bearing of the bridge *c* of the filling piece against the surface to which the casing is attached. This holds the latch properly as long as the casing is secured to the gate post, and when detached from the post the parts are not fastened together but are free to be taken apart. The interior space of the casing is sufficient to permit the proper swinging of the latch A, and any excessive movement of the latch is prevented by suitable stops. In the construction shown, the outward swinging of the latch is limited by the inner front edge of the casing, and its inward swinging is limited by the under surface of the bridge of the filling piece *c*, as indicated in dotted lines in Fig. 7.

One advantage of the present improved gate latch is its peculiar efficiency and convenience, due to the construction above described. Automatic latching is effected by the direct and positive action of the catch-bar upon the operating lever of the latch hook, instead of indirectly by a spring or by gravity devices; and, while the gate is held securely when latched, it can nevertheless be unfastened by a touch. It will be noted that the direction of movement of the hand in unlatching coincides with the direction of movement of the gate, so that the gate is unlatched and thrown open by a single motion, and no

further effort is required than would be expended in simply pushing the gate open were no latch employed.

A further advantage of the improved latch is its extreme simplicity. Having no parts which are complicated or liable to derangement, it is practically indestructible, even under severe usage. While the exact construction of latch illustrated in the drawings is very simple, it might be even more so, since, as a matter of fact, the swinging latch A, comprising in a single integral piece the latch-hook *a* and its operating lever, is alone sufficient to effect the purposes of the invention. Dispense with the casing C, pivot the swinging latch within a recess in the gate post itself, and make the front picket of the gate of proper diameter to co-operate with the latch, and every essential characteristic of the improved latch is obtained.

It would be no departure from the essential character of the invention to apply the swinging latch A, to the gate, so as to co-operate with a fixed catch-bar on the gate-post, which would be but a reversal of the construction herein set forth.

We claim as our invention—

1. A gate-latch comprising a non-gravital swinging hook *a* adapted to engage with a fixed catch-bar to secure the gate, and an operating lever *d* which is moved by said catch-bar to swing said hook *a* positively into engagement with said catch-bar, and which is moved by hand to disengage said hook and catch-bar, substantially as set forth.

2. A horizontally swinging latch mounted in a casing or recess, said swinging latch consisting of a latch-hook which has an inoperative position entirely within the casing or recess and an operating lever therefor which projects out of the casing or recess where it may be automatically actuated to swing out the latch-hook, substantially as set forth.

3. The casing C having interior grooves *e e*, and the swinging latch A having pivots *f f*, in combination with the U-shaped filling-piece occupying said grooves behind said pivots, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

ABRAHAM NELL.

THOMAS J. CORCORAN.

Witnesses:

JOHN W. O'HARA,
EDWARD E. REILLY,
JOHN W. BROWN.