(No Model.) 2 Sheets—Sheet 1.

H. F. SPENCER & H. C. EGGLESTON.

Latch.

No. 233,711. **Patented Oct. 26, 1880.**

Fig. 1,

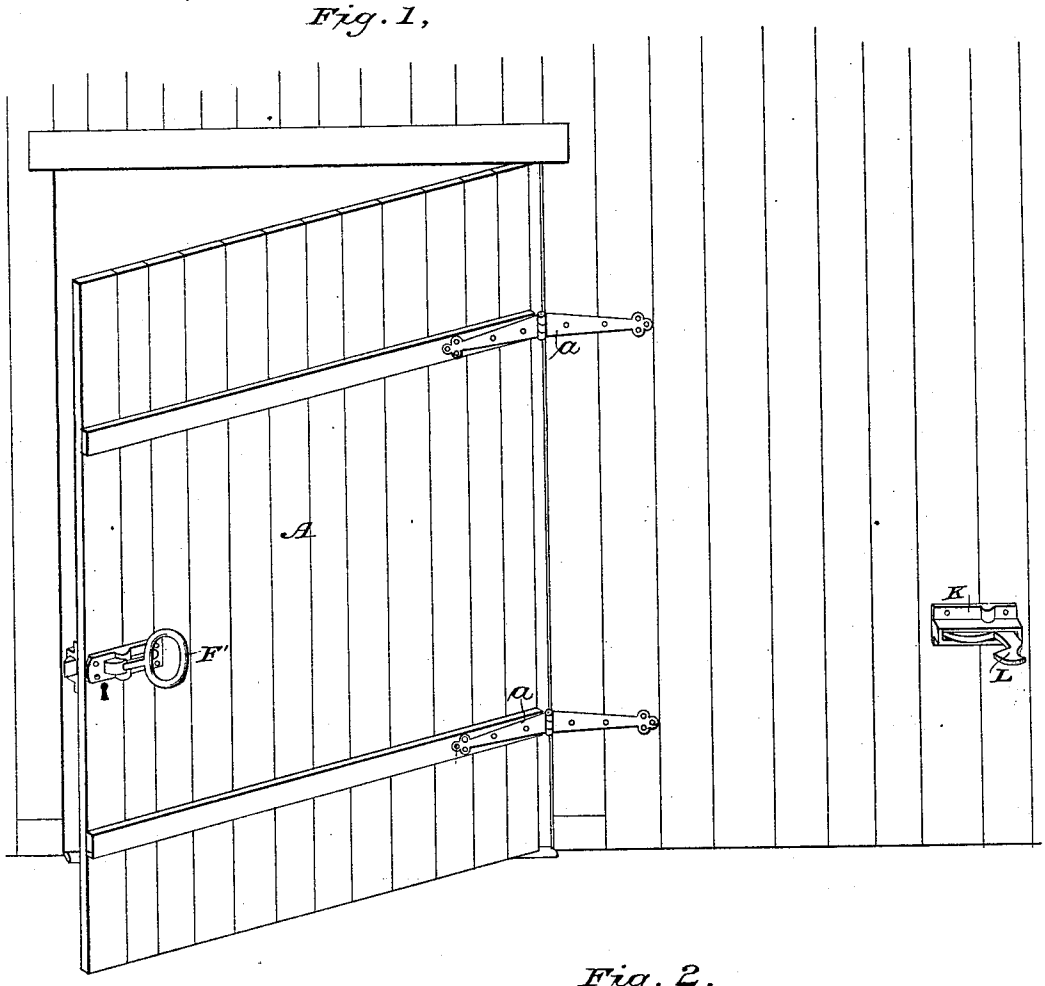
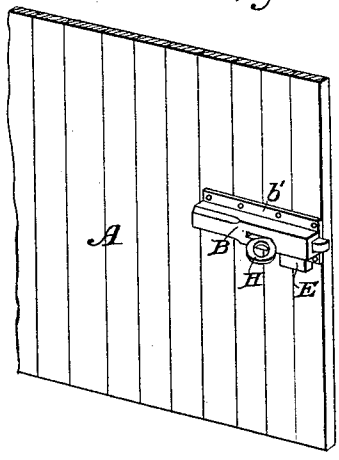


Fig. 2,



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(No Model.) 2 Sheets--Sheet 2.

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Fig. 3,

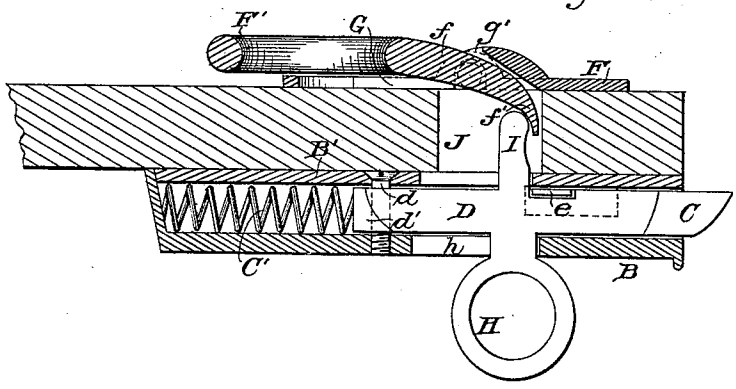


Fig. 5,

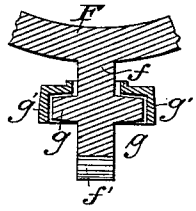


Fig. 4,

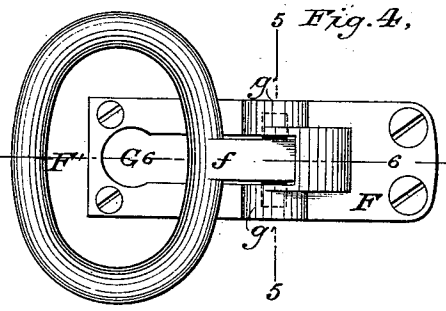


Fig. 6,

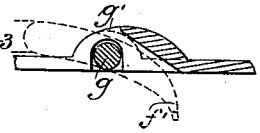
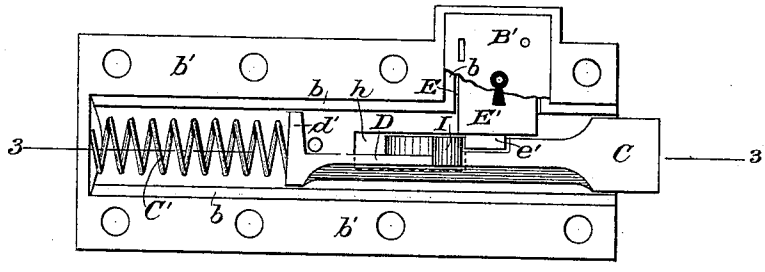


Fig. 7,



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UNITED STATES PATENT OFFICE.

HENRY F. SPENCER, OF RIPON, WISCONSIN, AND HIRAM C. EGGLESTON, OF HILLSDALE, MICHIGAN.

LATCH.

SPECIFICATION forming part of Letters Patent No. 233,711, dated October 26, 1880.

Application filed June 21, 1880. (No model.)

To all whom it may concern:

Be it known that we, HENRY F. SPENCER, of Ripon, in the county of Fond du Lac and State of Wisconsin, and HIRAM C. EGGLESTON, of Hillsdale, in the county of Hillsdale and State of Michigan, have invented certain new and useful Improvements in Door-Fastenings, of which the following is a specification.

Our object, mainly, is to improve that class of door-fastenings which are applied to heavy doors, such as those of barns, stables, &c.; and to this end our aim has been to secure strength and durability in the attachments or fastening devices, together with economy of manufacture and simplicity both in operation and in construction of parts.

The subject-matter claimed will hereinafter be designated after first fully describing our improvements by reference to the accompanying drawings, which show all of them as organized in the best way now known to us.

Figure 1 is a perspective elevation, showing a portion of a barn or similar building provided with a horizontally-swinging door and our improved devices; Fig. 2, a view of a portion of the door as seen from the inside. Fig. 3 is a view, partly in plan and partly in vertical section, on the lines 3 3 of Figs. 4 and 7, showing the latch-bolt, handles, &c.; Fig. 4, an elevation of the main or outside handle and its attachments or immediate connections; Fig. 5, a section on the line 5 5 of Fig. 4, parts being in a different position, or the handle raised or pulled out to withdraw the latch-bolt; Fig. 6, a detailed view, partly represented in dotted lines and in section on the line 6 6 of Fig. 4, to illustrate a feature in the construction not otherwise clearly shown. Fig. 7 is a view of the latch-bolt housing or case and lock-case detached, and as seen from the face or inside.

A latch-bolt housing or case, B, covered at its inner or open side by a plate, B′, resting in the seat *b b*, and provided with the longitudinal securing-flanges *b′ b′*, is properly fitted and secured by screws upon a door, A, hinged at *a a*. The reciprocating latch or bolt C is operated upon by a push-spring, C′, acting against its heel end. This spring bears at its rear against the end wall of the latch-bolt housing or guideway, and at its front against the heel of this bolt. A screw, *d*, close to which the bolt-shank D moves as it reciprocates, serves to limit the outer movement of the latch-bolt. The heel-stud or lateral projection *d′* strikes against the stop *d* at this extreme of the outward movement of the bolt, thus properly stopping the latch. The screw *d* holds the plate B′ in place.

It will be seen that the latch proper of the bolt and the heel end of the latch-bolt extend across between the side walls of the housing, or fill the way for the latch-bolt and insure steady to-and-fro movement as the latch-bolt is reciprocated.

A lock-cavity, E, is provided laterally to the latch-bolt in the housing B, and is one casting therewith, by preference.

The bolt *e* of a lock, E′, of suitable construction engages behind a shoulder or in a recess, *e′*, in the latch-bolt, and secures it in the position shown by the drawings. Any suitable, simple, and strong lock and its key will serve the purpose desired, so long as the lock is adapted in shape and action to the cavity or seat E and has its bolt to work laterally to the latch-bolt, as shown. A side projection of the plate B′ serves to secure the lock.

A lugged and slotted plate or cap-piece, F, is fitted upon the side of the door opposite that upon which the housing B, its lock-cavity, and the lock are secured. A vibrating handle, F′, with a curved nose or hooked arm, *f′*, at the end of its shank *f*, is pivoted by trunnions *g g* in open bearings or slots formed in lugs *g′ g′* in this cap-piece, as clearly shown by the drawings.

The handle-shank plays in the longitudinal slot G in the cap-piece as the handle is rocked and moved out or away from the door to compress the spring C′ and retract the latch, and also when the handle rocks back or folds against the door, as it does automatically when released by the hand, as will presently fully be explained.

A rigid inner handle, H, for the latch-bolt works in a slot, *h*, in the latch-bolt casing, and is in this instance cast in a single piece with the latch-bolt. This inner or secondary handle

serves to operate the latch from one side of the door, while the outer or main handle controls the fastening from the other side. The pivoted folding handle normally occupies the position in which it is shown in the drawings—that is, it lies flat against the door, so as to be out of the way and protected from injury. This folding handle is not affected by the working of the latch-bolt by the handle H, and whether the latch-bolt be operated by or independently of, and without disturbing the folding handle, this handle is securely dogged against vibration and held in its folded position as soon as the spring C′ is allowed to act upon releasing that handle by which the latch-bolt may have been withdrawn.

The nose or arm *f′* of the outer handle engages the latch-bolt by way of the stud I. This stud is cast with the latch-bolt and handle H in this instance, but might be separately formed and attached, or the handle H and stud I might be made together separate from the latch-bolt, and secured in a slot therethrough or at the side thereof.

The nose of the handle F′ and the latch-stud I behind said nose work in a slot, J, in the door, and the stud may be depended upon for a stop to limit the shoot of the latch, and the screw *d* be dispensed with, if desired.

It will be seen that as the plate B′ rests in a seat upon the ledges *b b*, both lengthwise of and laterally to the housing or casing B, there is no possibility of displacement of this plate when the fastening is secured to a door by screws passed through the base-flanges *b′ b′*.

From the above description it will be seen that normally the parts occupy the positions in which they are represented by the drawings, with the ring-handle flat against the door and protected from injury; that a pull on the handle contracts the spring and withdraws the latch to release the door, (the key having been previously used, when a lock is employed, to unlock when necessary;) and that as soon as the strain by hand is relaxed the handle F′ folds back, due to the action of the spring C′. The handle H is simply slid back to withdraw the latch, and this without rocking the handle F′.

By casting the cap-piece F with the open bearings in the lugs *g′ g′* to receive the side pivots or trunnions, *g g*, of the handle, and forming these pivots large and upon the shank of the handle, strength and durability are secured with economy and simplicity.

We do not broadly claim reciprocating spring-latches or latch-bolts operated from the opposite sides of doors by different handles, nor do we broadly claim a folding handle for latches, &c.; neither do we unqualifiedly claim the combination of a spring latch-bolt, its handles, and a lock. We are well aware that such parts and various combinations of features such as above referred to are, when broadly considered, older than our invention.

We claim as of our own invention—

1. The combination, substantially as hereinbefore set forth, of the latch-bolt provided with the stud and acted upon by the spring, and the pivoted flat folding handle having the curved nose or hooked arm in front of and engaging the latch-bolt stud to operate said bolt, which also has the capacity of retraction independently of said handle, and serves to dog the handle in its folded position.

2. The combination of the latch-bolt housing, the reciprocating latch-bolt having the single stud, the spring acting on the latch-bolt, the pivoted handle having the nose or arm acting on the latch-bolt stud and dogged in its folded position, as described, and the fixedly-attached handle of the latch-bolt, working in a slot in the housing and serving to operate the latch-bolt without rocking the folding handle, substantially as hereinbefore set forth.

In testimony whereof we have hereunto subscribed our names.

HENRY F. SPENCER.
HIRAM C. EGGLESTON.

Witnesses as to signature of Henry F. Spencer:

W. R. LYLE,
MORTON POTTER.

Witnesses as to signature of Hiram C. Eggleston:

L. P. REYNOLDS,
E. K. PENNELL.