I. FREES.

Lock for Barn Doors.

No. 197,115. Patented Nov. 13, 1877.

fig. 1.

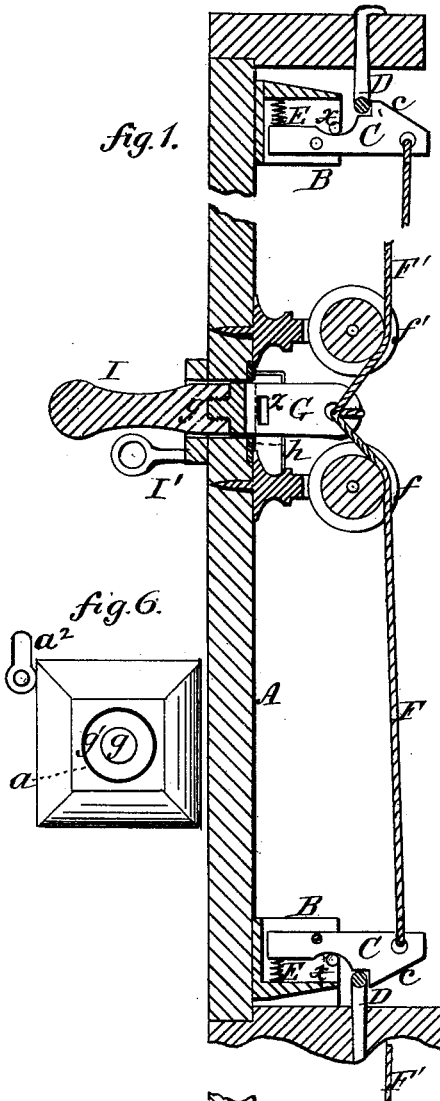


fig. 2

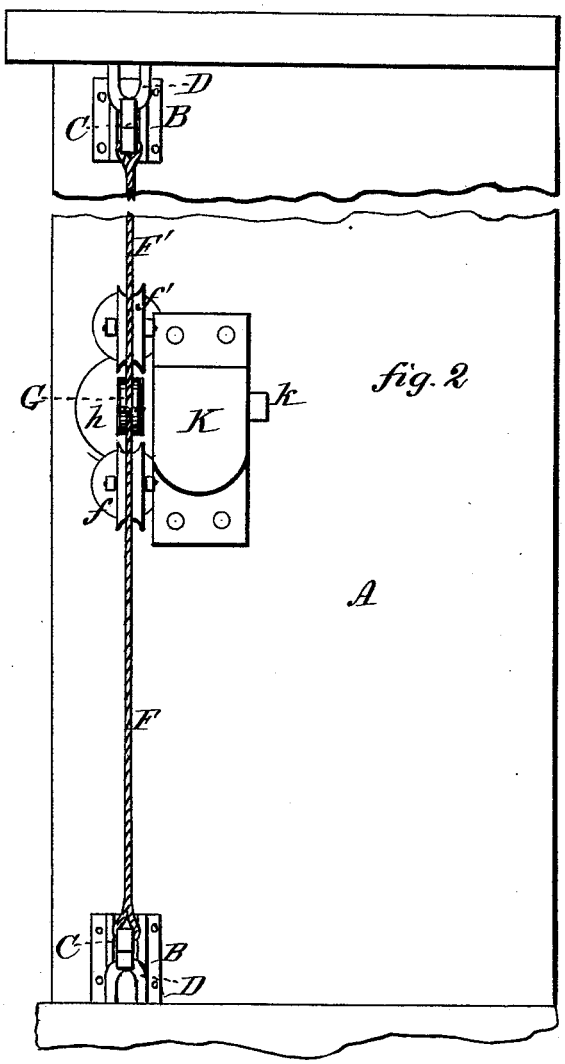


fig. 6.

fig. 4.

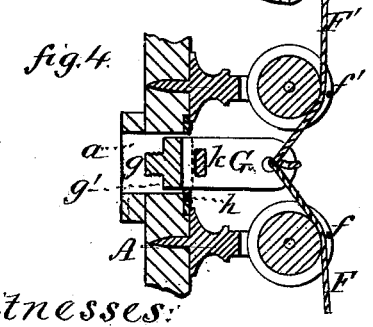


fig. 3.

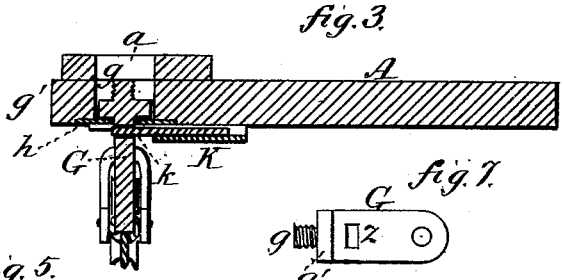
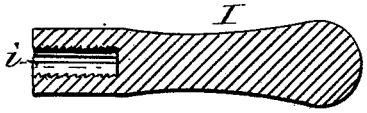


fig. 7.

fig. 5.



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UNITED STATES PATENT OFFICE.

IRA FREES, OF VENICE, OHIO.

IMPROVEMENT IN LOCKS FOR BARN-DOORS.

Specification forming part of Letters Patent No. **197,115**, dated November 13, 1877; application filed September 29, 1877.

To all whom it may concern:

Be it known that I, IRA FREES, of Venice, in the county of Erie and State of Ohio, have invented certain new and useful Improvements in Barn-Door Locks; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of my invention is to provide for the door of a barn or similar building an effective arrangement of devices for latching and locking said door, both at top and bottom, and which is operated and controlled by knob and key at the ordinary convenient height from the sill.

In order that others may be able to make and use my combined latch and lock, I will describe the construction and explain the operation of the same with reference to the accompanying drawings, in which—

Figure 1 represents a vertical section of a door-frame of a door provided with my improvements. Fig. 2 is a view of the inner side of the door. Fig. 3 is a horizontal section of the door locked and the keys removed. Fig. 4 is a vertical sectional view of the same; Fig. 5, the screw key-knob; Fig. 6, the key-holes; and Fig. 7, the key-knob pull.

Near the top and bottom of the door A are arranged housings B, within which are fulcrumed the latch-levers C, the oblique-faced catches *c* of which extend inwardly beyond said housings, and are forced upon staples D to the action of springs E, upon the inner arms of the levers C. The motion of the levers toward the staples is limited by cross-bars *x*, which retain said levers in such position that their inclined or oblique faces will strike the tops of the staples and slip over the same when the door is closing.

Gravity would, of course, cause the lower catch to fall, but the spring, or a weighted inner end is necessary to cause the upper catch to engage with its staple; and I prefer to use the springs, as shown, in order to insure prompt action of the catches.

From the inner end of the lower catch-lever a cord, F, extends upward, and from the inner end of the upper catch-lever a cord, F′, extends downward, and both of these cords are attached to the end of a sliding arm or pull, G, which extends outward into an aperture, *a*, in the door, and terminates in a screw-threaded shank, *g*.

The inward movement of this sliding arm or pull is limited by the striking of its shoulder *g′* against a plate, *h*, secured to inner side of the door, and through an aperture in which the sliding arm or pull plays. In order to operate the latches for unlatching the door, a knob or handle, I, having a threaded socket, *i*, is screwed upon the shank *g* of the sliding arm or pull, and when this knob is pulled the said sliding arm, of course, moves outward, drawing the latch-cords F F′ around grooved pulleys *f f′*, which change the direction of the motion of said cords, thus disengaging the latches from the staples, and a continuation of the pull upon the knob opens the door.

Upon the inner side of the door is secured an ordinary door-lock, K, in such position that when the bolt *k* of said lock is shot it passes through an aperture, Z, in the sliding arm G, when said arm occupies its inmost position, (as when the door is latched,) and retains the said arm in this position, thus preventing the unlatching of the door by pulling knob I. This amounts to an effectual locking of the door, the security against unauthorized opening of which is doubled by removing the knob I from the shank of the sliding arm G, for then, though the lock should be picked, there will be no means of retracting the latches.

The lock K is operated by an ordinary key, I′, through a key-hole, a^2, in the door, as shown in Fig. 6.

As a further guard, when the knob I is removed the aperture *a* in the door may be sealed by any of the known devices for the purpose.

I claim—

1. The combination of the latch-levers C, cords F F′, and sliding arm G.

2. The combination of lock K and sliding arm G, connected with the top and bottom latches of a door, substantially as set forth.

3. The combination of the sliding arm G, having a removable knob, I, with an interior latch-operating mechanism.

4. The combination of latches C, cords F F′, pulleys *f f′*, and sliding arm G, as set forth.

5. The pull-arm G, having the screw-shank *g*, the shoulder *g′*, and the cross-opening *z*, in combination with the screw-socket key-handle I, the latch-operating cords, and the supplemental locks K, as described.

In testimony that I claim the foregoing I have affixed my signature in the presence of two witnesses.

IRA FREES.

Witnesses:
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PALMER TANNER.