W. Johnston,

Lock Hinge.

No. 94,606. Patented Sept. 7. 1869.

Fig. 1.

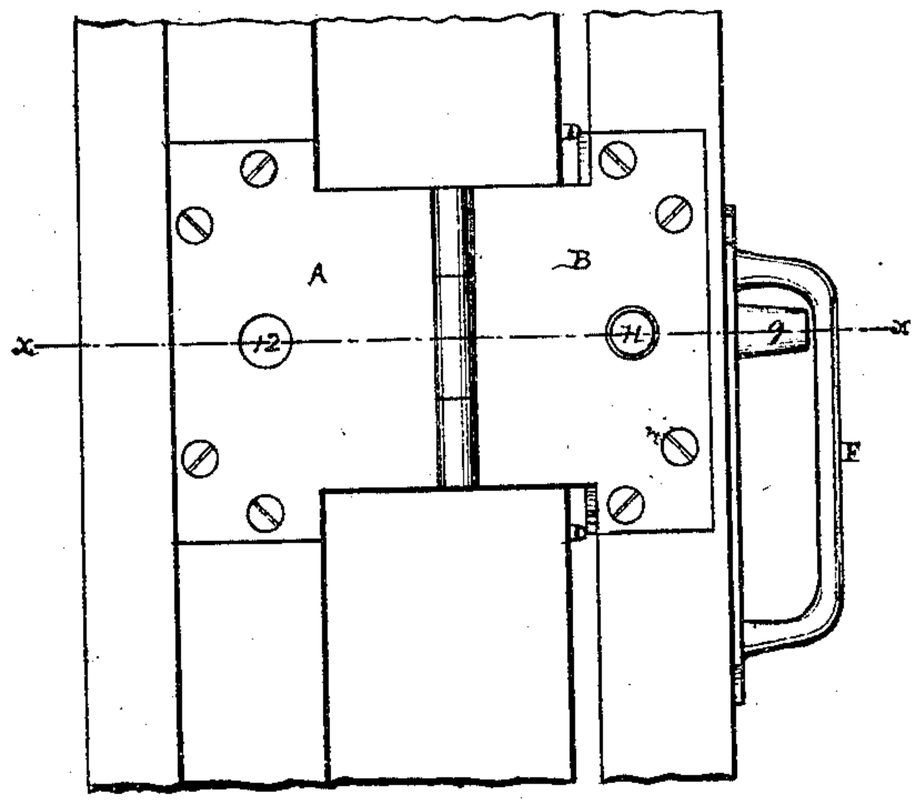

Fig. 2.

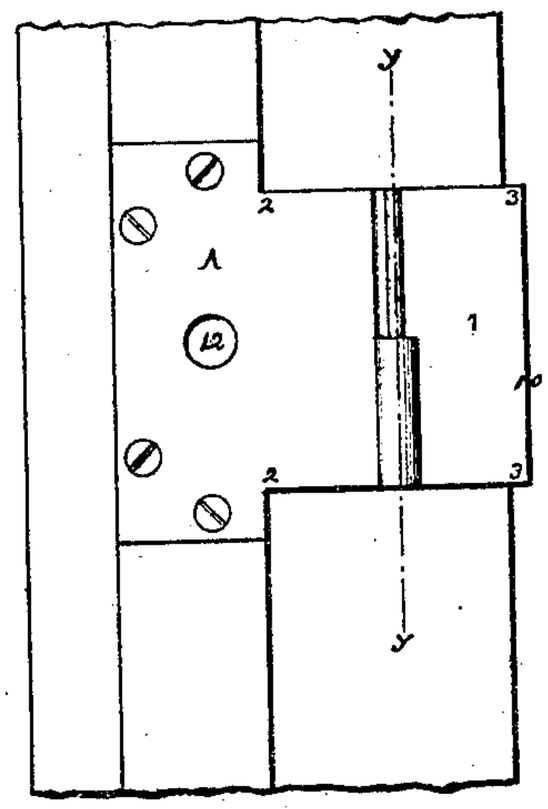

Fig. 3.

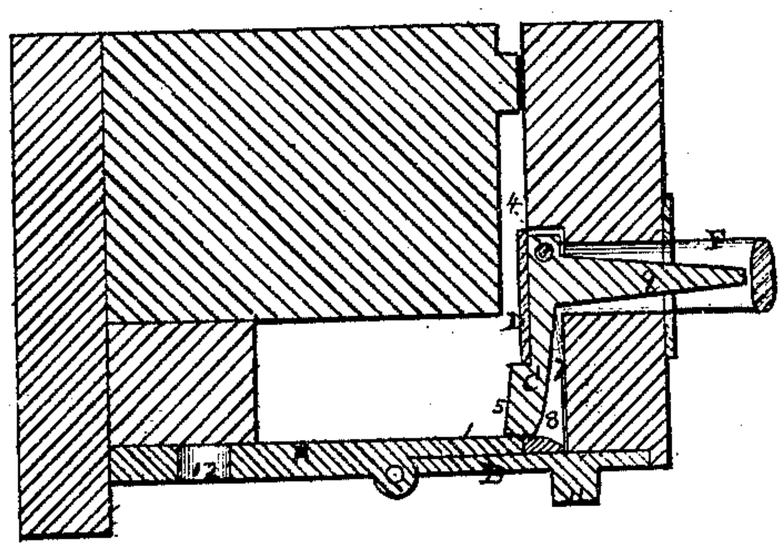

Fig. 4.

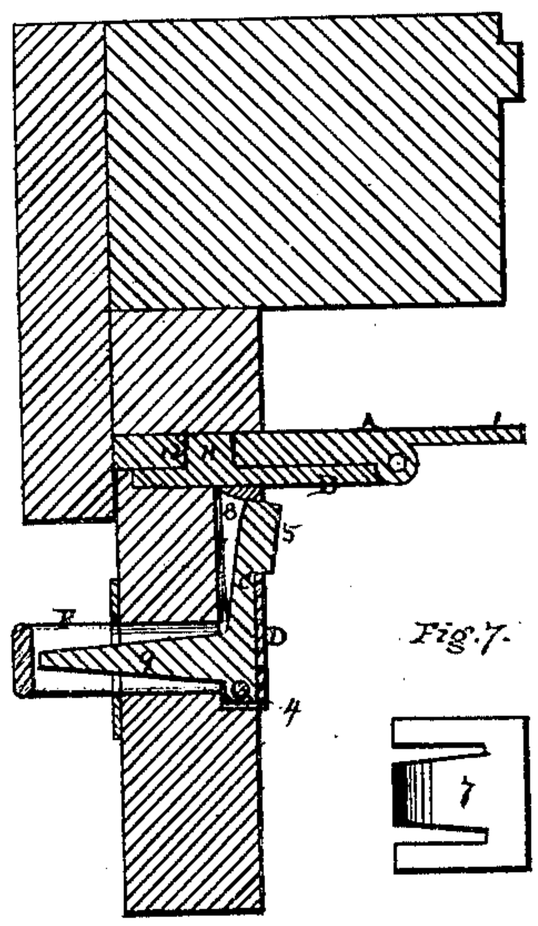

Fig. 5.

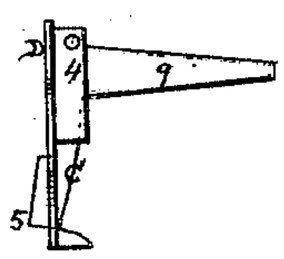

Fig. 6.

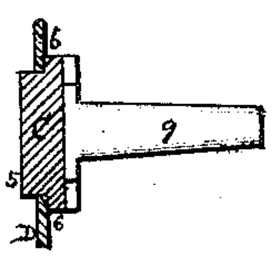

Fig. 7.

Witnesses.
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WILLIAM JOHNSTON, OF CINCINNATI, OHIO.

Letters Patent No. 94,606, *dated September* 7, 1869.

IMPROVED HINGE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM JOHNSTON, of Cincinnati, in the county of Hamilton, and State of Ohio, have invented certain Improvements in Hinges; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practise it.

My improvements relate to that class of hinges which are self-locking when opened, and whilst applicable to hinges for doors, furniture, and other purposes, are more especially designed for hinges used upon window-shutters.

These improvements consist in forming one plate or wing of the hinge, with an elongation of itself in the same plane beyond the axis or knuckle of the hinge, so that when applied for use, this elongation will reach from the window-frame to the opened shutter; and in pivoting within the shutter a bolt, protruding through and beyond its outer sarface, under pressure of a spring, and having a thumb piece thereon; the bolt being so located as to be pressed back against its spring by the elongated end of the hinge, in the act of opening the shutter, and then when the shutter is fully opened, suddenly springing over the elongation, and locking the two plates of the hinge firmly together; the thumb-piece passing through the shutter to its opposite side, affording a ready means, especially in connection with a handle, for unlocking and closing the shutter, while standing or sitting within the room, and without leaning out of the window.

In the accompanying drawings—

Figure 1 is a front view of my improved hinge, as applied to the window-frame and shutter;

Figure 2 represents one plate only of a hinge, and shows the portion which extends beyond the axis;

Figure 3 is a horizontal section, through the line *x x* of fig. 1, the shutter being open;

Figure 4 is a corresponding horizontal section, through the same line, the shutter being closed;

Figure 5 is a top view of the lever-bolt, and the plate to which it is pivoted;

Figure 6 is a vertical section of the same; and

Figure 7 is a front view of the spring.

A represents one plate, and B, the other plate, of a but-hinge, suitable for a window-shutter. C, the locking-bolt, and D, the plate, to which it is hinged.

The plate A, instead of terminating, as usual, at the line *y y*, is projected or extended in the same plane, at its rear face, as seen at 1, so that the pivotal line or axis of the hinge is about midway between the points 2 and 3 of this plate, the plate on its front side being preferably so reduced in thickness that while it retains all the strength requisite to hold open the shutter, as hereinafter described, it will allow the other plate to lie against and parallel with it, and its outer end reaching so as to be in contact with the plate D, on the shutter, when it is swung entirely back.

The plate D, of the shutter, is made with ears or ribs 4, on its under side, to press on, and hold fast the outer leaves of a spring, 7, and to receive a pin or bearing for the bolt C, as shown, the latter being so formed that its protruding part, 5, shall by reason of the shoulders 6 6 be checked from protruding more than the predetermined distance beyond the outer face of the plate D, a tri-pronged flat piece, 7, of steel, or other appropriate metal, being made to serve the purpose of a spring, and exert a constant outward pressure upon bolt C, by simply adapting it in size to the box 8, formed in the shutter to receive the bolt, and placing it snugly therein, the middle prong having been first turned upward to press the bolt C near the base of the thumb-piece.

The thumb-piece 9 forms a part of the bolt C, and is at right angles with it. It passes through a hole in the shutter, and projects far enough through on its opposite side, to give sufficient leverage, and to be easily operated by the thumb of a person, in grasping the handle F with the fingers, when about to close the shutter.

It will now be seen that when the shutter is swung open, the inclined outer surface of the bolt comes in contact with the end 10, of projection 1, and the bolt is thereby forced inward against the action of its spring, until the bolt has passed the end 10. At this stage the bolt is left free to obey the pressure of the spring, and at once springs outward, and so clasps the end 10, of plate A, between itself and the other plate, holding the shutter with a dead lock, the space between the holding side of the bolt and the plate B being just sufficient to admit the projection 1 snugly.

For closing the shutter, this construction is of great value, for the reason that the proximity of the fastening and handle F to the inner edge of the shutter enables the person to grasp it without leaning out of the window, or stooping down, or even leaning forward, it being operated with perfect ease, while standing erect or sitting by the window.

To render this a burglar-proof hinge, I affix or cast on one plate a stout bolt or projection, 11, and cast in the other plate a corresponding socket or cavity, 12, so that when the shutters are closed, they can neither be removed from their hinges, nor can they be taken off, even if the exposed parts of the hinges be sawed or filed off, or their axis severed.

It is apparent that this hinge is also adapted for doors or for any other uses where it is desirable to

fasten open a movable part. It is also evident that the projection 1 may be made upon the swinging instead of upon the fixed hinge-plate, the other devices being adapted thereto accordingly.

It will be apparent from the drawings, that the plate of the fast wing is double the thickness of that of the free wing. This was necessary for strength, symmetry, and the double use to which it is applied.

It will be observed also that the part of the plate fastened to the window-frame is broader than that fastened to the stile of the shutter.

It is recommended that this part be made as broad as the rebate in the frame will admit, so as to give greater strength and stability to the lock-hinge, and diminish the chances that the frame might be shattered by gusts of wind.

Ordinarily, when used for window-shutters, this hinge will have but a single joint, as shown in fig. 2, so that the shutter may be taken off and put on at pleasure, but it may be jointed by single, double, or multifold articulations, as judgment, fancy, convenience, or utility may suggest.

Instead of the devices shown in figs. 5 and 6, a simple mode of practising my invention, and locking the plate B to the projection 1, would be to employ a turn-button instead of the spring-bolt, the button being a mere bar, or of an eccentric, segmental, or other suitable form, and secured rigidly upon or formed integral with a shank, the latter being fitted to pass through the shutter, and having a handle, by which it may be readily turned and controlled, the button when turned bearing with its outer edge upon the plate 1, and locking it closely against B.

I claim—

A hinge, one plate of which is extended beyond the joint, and in the plane thereof, as shown at 1 3, and so as to lap upon the other plate, and adapted to be clamped thereto, substantially as shown and described.

Also, in combination with a hinge, having such an extension, a spring-bolt, as shown in figs. 3 and 4, or equivalent locking-device.

Also, the combination with the spring-bolt and its thumb-piece, of the handle F, these parts being arranged and operating in connection with a hinge, substantially as shown and described.

Also, the combination of the plate D, having ears for securing the bolt, with the bolt C, shouldered as described, when used for locking a hinge.

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Witnesses:

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J. F. BEALE.