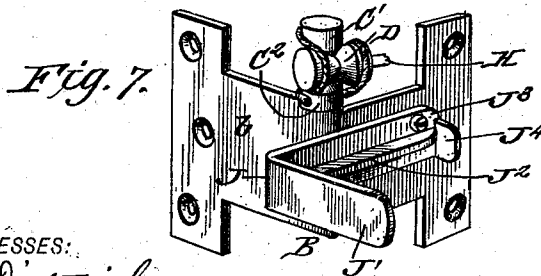
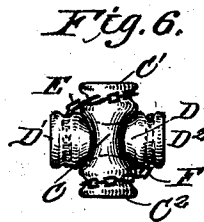
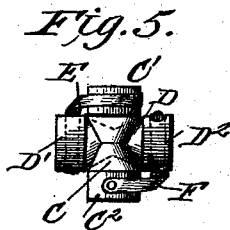
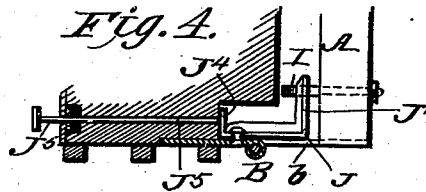
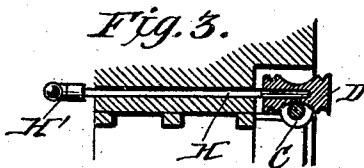
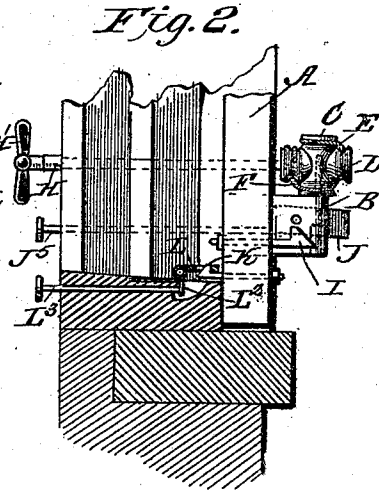
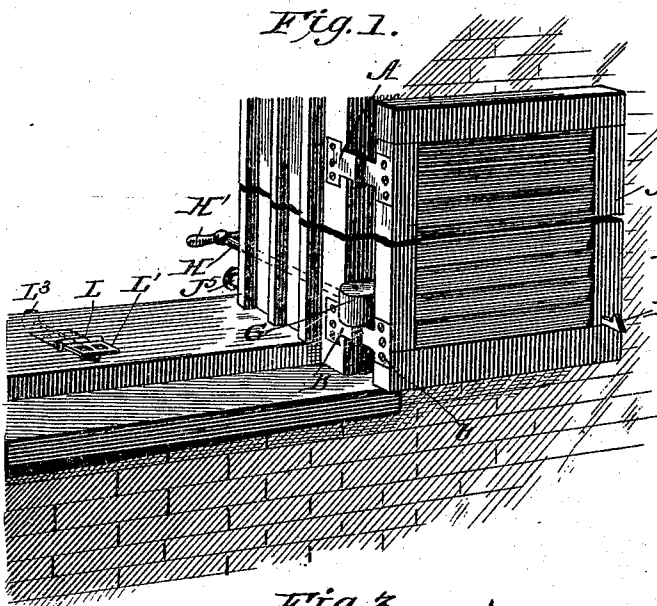


(No Model.)

T. N. LUPTON.
SHUTTER WORKER.

No. 503,866.

Patented Aug. 22, 1893.



WITNESSES:

Fred G. Dieterich
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ATTORNEYS.

UNITED STATES PATENT OFFICE.

THOMAS N. LUPTON, OF WINCHESTER, VIRGINIA.

SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 503,866, dated August 22, 1893.

Application filed November 16, 1892. Serial No. 452,213. (No model.)

To all whom it may concern:

Be it known that I, THOMAS N. LUPTON, residing at Winchester, in the county of Frederick and State of Virginia, have invented a new and useful Improvement in Shutter-Workers, of which the following is a specification.

This invention is an improvement in shutter workers and has for an object to provide a novel, simple and compact construction whereby the shutter may be opened or closed from within the room and be locked and unlocked in both its open and closed positions without requiring the window to be opened, and the invention consists in certain features of construction and novel combinations of parts as will be hereinafter described and pointed out in the claims.

In the drawings—Figure 1 is a perspective view of my improvement. Fig. 2 is a vertical section. Figs. 3 and 4 are horizontal sections. Figs. 5 and 6 show different forms of connections between the sections, and Fig. 7 is a detail perspective view of the hinge.

The shutter A, which may be of ordinary construction is suitably hinged to open and close, one hinge A' being of ordinary construction and the other hinge B being also of ordinary construction except in the respects hereinafter described.

In connection with the swinging leaf *b*, of the hinge B, I provide the roller or shaft C, having upper and lower roller surfaces C' and C². These rollers C' C² are preferably grooved to better secure the operating chains, wires or bands to them, but manifestly these grooves may be omitted when the wire cables presently described are used. The roller or shaft C is arranged in alignment with the pin-
tle or center of movement of the hinge, so that the turning of the roller or shaft will operate to turn the swinging leaf of the hinge and so open or close the shutter according to the direction of movement given to the shaft C. A horizontal shaft D is arranged transversely of the roller C and has at its opposite ends roller surfaces D' and D² which are preferably grooved similarly to the corresponding parts of the shaft C and these end rollers D' and D² bear such relation to the rollers C' and C² that the cables or connections may pass from the upper side of one of them to

the upper roller of shaft C and from the lower side of the other one to the lower roller of said shaft. The said connections E and F are secured at one end to the rollers of one shaft and at their outer ends to the rollers of the other shaft and wind in reverse directions on the opposite rollers of the shafts C and D so that the turning of the shaft D in one direction will operate to positively open the shutter and in the other direction to positively close the same.

In order to arrange the rollers C and D in close relation it is greatly preferred to form the shafts both with reduced portions between their end rollers and to fit the reduced portion of one to that of the other so that they will occupy but a small space. This is desirable because it enables both the rollers to be arranged within the space around which the inner edge of the shutter swings and permits a casing G to be fitted over said shafts without forming any unsightly obstruction on the face of the building.

The connections E and F may be of wire cable as preferred or of chains, strips of tempered steel or other metal, leather, raw hide, or other suitable material as desired.

To operate the shaft D I provide a shaft H extended through the window frame having a handle H' within the room and preferably made separate from and fitted at its outer angular end in a socket in the shaft D as will be understood from the drawings.

The operation will be readily understood. The shaft D may be turned to easily open or close the shutter. When open the shutter may be secured by its catch I engaging with the latch J. This latch J is L-shaped having one wing J' arranged to secure latch I and its other wing J² pivoted at J³ to the fixed leaf of the lower hinge and extended inward beyond its pivot J³ forming a crank like extension J⁴ which may be engaged by a slide rod J⁵ leading from within the room and by which the gravity latch J may be conveniently operated to release the catch I when it is desired to close the shutter.

To lock the shutter closed I provide on its inner face a catch K, which engages a gravity latch L having a hinged plate L', such plate being provided with a crank like stem L² for engagement by a push rod L³ from

within the room so that the shutter may be unfastened without raising the window.

- It will be noticed that the vertical roller or shaft C as also the latch for holding the shutter open form a part of the lower hinge and the roller D being connected with the said roller C also forms a part of such completed hinge which may be manufactured and sold ready for application. The catches I and K have their shanks l formed to taper toward their extremities so that they may be tightened in place by drawing them inward by a fastening nut or by driving them into the wood of the shutter as may be preferred.
- If at any time it is desired to lift the shutter off, it is only necessary to withdraw the shaft H from the shaft D, when the shutter may be lifted off as usual.

Having thus described my invention, what I claim is—

1. In a shutter worker, the combination of a shaft fixed with respect to the shutter and having end rollers, an operating shaft arranged transversely of said first shaft and having end rollers and connections between the end rollers of said shafts, such connections being reversed, substantially as and for the purposes set forth.

2. In a shutter worker, the combination of the hinge provided on its swinging leaf with a shaft having opposite end rollers and a reduced portion between said rollers, a shaft transverse thereto and also having end rollers and an intermediate reduced portion, such reduced portions of the two shafts being fitted together and connections between the end rollers of the two shafts, substantially as set forth.

3. In a shutter worker a hinge having rigid

with one leaf a shaft arranged in alignment with the axis or center of motion of the hinge and provided with upper and lower roller surfaces, substantially as set forth.

4. The combination with the hinge having its swinging leaf provided with a shaft arranged in alignment with the axis or center of motion of the hinge and having upper and lower rollers, the second shaft arranged transversely of said first shaft and having end rollers and connections between the rollers of the two shafts whereby the turning of the second shaft may operate to turn the other, substantially as set forth.

5. The combination with the shutter having a catch and its hinge having a fixed and swinging leaf of the shaft fixed to the swinging leaf of the hinge and provided with upper and lower rollers, the transverse shaft having end rollers connected with the rollers of the first shaft, and the latch pivoted to the fixed leaf of the hinge and arranged to engage the catch on the shutter, substantially as set forth.

6. As a new and improved article of manufacture a hinge having a fixed and swinging leaf, a latch pivoted to the fixed leaf a shaft rigid with the swinging leaf and in alignment with the axis or center of motion of the hinge such shaft provided with end rollers and an intermediate reduced portion and a second shaft transverse of the first having a reduced central portion fitted to that of said roller and the end rollers of the two shafts being connected substantially as and for the purpose described.

THOMAS N. LUPTON.

Witnesses:

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W. S. CATHER.