(No Model.)

J. H. DAVIDSON.

SHUTTER WORKER.

No. 457,306. Patented Aug. 4, 1891.

Fig. 1.

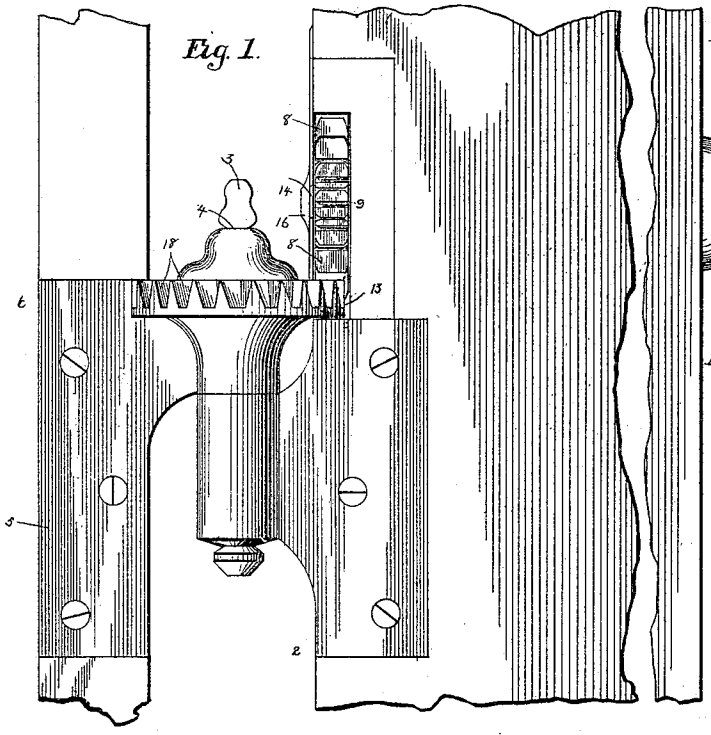
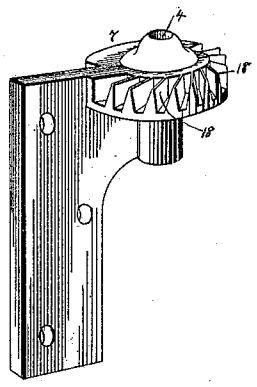


Fig. 3.



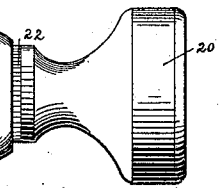


Fig. 2.

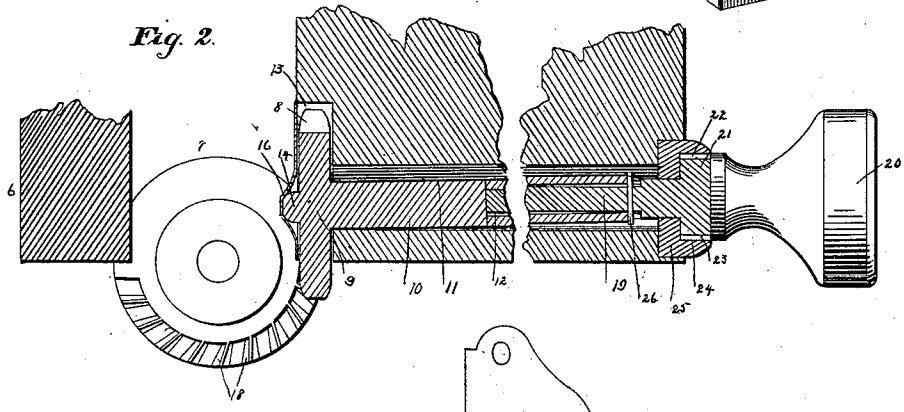
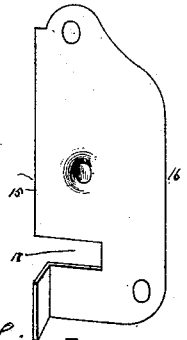


Fig. 4.



Witnesses.
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By his Attorneys,
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UNITED STATES PATENT OFFICE.

JOHN H. DAVIDSON, OF FAIRFAX COURT-HOUSE, ASSIGNOR OF ONE-HALF TO THOMAS T. TAYLOR, OF DUNN LORING, VIRGINIA.

SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 457,306, dated August 4, 1891.

Application filed August 4, 1890. Serial No. 360,972. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. DAVIDSON, a citizen of the United States, residing at Fairfax Court-House, in the county of Fairfax and State of Virginia, have invented a new and useful Shutter-Worker, of which the following is a specification.

The invention relates to improvements in shutter-workers.

The object of the present invention is to provide a simple and inexpensive device adapted to be readily secured to a window-frame and shutter and capable of opening and closing the latter and of securely locking them in their open and closed positions or at any intermediate point.

The invention consists of the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claim hereto appended.

In the drawings, Figure 1 is a side elevation illustrating a shutter-worker constructed in accordance with this invention applied to a window frame and shutter, the latter being open. Fig. 2 is a horizontal sectional view. Fig. 3 is a detail view of the leaf of the hinge provided with a gear-wheel. Fig. 4 is a detail view of the bearing-plate.

Referring to the accompanying drawings, 1 designates a window casing or frame having secured to it in a suitable recess one leaf 2 of a hinge provided with a pintle 3, engaging the eye 4 of the other leaf 5, which is secured to a shutter 6. The leaf 5, which is secured to the shutter, has formed integral with it a gear-wheel 7, the central opening of which forms the eye of the leaf and is adapted for the reception of the pintle 3 of the leaf 2. The gear-wheel 7 of the leaf 5 is engaged by teeth 8 of a segment 9, which is preferably formed integral with a shaft 10, arranged in a circular opening or bore 11 of the window casing or frame 1 and provided with a longitudinal opening 12. The segment is arranged in a recess 13 of the frame and is provided with a central projection 14, which finds bearing in an indentation 15 in the inner face of a bearing-plate 16, secured to the frame or casing 1 and forming a casing for the segment 9 and closing the recess 13. The plate 16 is provided with an open slot 17, in which is arranged the adjacent edge or portion of the periphery of the gear-wheel 7, the teeth of which mesh with the teeth of the segment, and the shaft 10 is arranged back or to one side of the vertical plane of the pintle or the center of the gear-wheel 7, and the teeth 18 of the latter are semi-tangential or are arranged tangential to a circle within the circumference of the gear-wheel 7. This arrangement of the teeth 18 brings them in proper position at the point of meshing with the teeth of the segment 9, which is mounted upon the shaft 10, that is arranged out of the vertical plane of the pintle 3, and the angle formed by a tooth and the diameter of the wheel 7 varies according to the distance the shaft is arranged beyond the vertical plane of the pintle. The opening 12 of the shaft 10 is rectangular and is engaged by a squared rod 19, loosely arranged in the opening 12 of the shaft and provided at its outer end with a knob 20, and the squared rod is adapted to be inserted more or less in the opening 12, according to the thickness of the window-frame, thereby enabling the shutter-worker to be readily adjusted to any-sized frame. The inner end or annular portion 21 of the knob 20 is milled or provided on its periphery with a series of teeth 22, arranged to engage similar teeth 23, formed upon the inner face of a cylindrical recess 24 of a plate 25, which is seated in a recess of the casing and provided with perforations through which pass screws that secure the plate to the casing or frame 1 of the window, and the said knob and squared rod are adapted to be moved longitudinally to carry the teeth 22 of the knob into or out of engagement with the teeth of the plate 25. The longitudinal movement of the rod 19 is limited by a pin 26, passing through the rod and projecting from opposite sides thereof; but the stop 26 may be formed by a flange, collar, or the like.

It will readily be seen that the shutter-worker is simple and comparatively inexpensive in construction and is adapted to be readily applied to a window and be quickly adjusted to the thickness of the frame, and the

bearing-plate which forms a casing for the segment forms a guide which enables the parts to be readily adjusted to their proper positions.

What I claim is—

The combination, in a shutter-worker, of the hinge comprising the leaf 2, provided with a pintle, and the leaf 5, having the gear-wheel provided with a central pintle opening and having its teeth arranged horizontally on its upper face and at an angle to the diameter, the shaft arranged in a vertical plane parallel to that of the pintle and provided with a longitudinal opening, the segment formed integral with the shaft and provided with the projecting journal, the bearing-plate having a bearing-indentation to receive the journal and provided with a horizontal slot to receive the gear-wheel, the knob having its stem arranged in the opening of the shaft and provided with a pin projecting laterally from the stem to limit the movement of the knob, and suitable means for locking the knob, substantially as described.

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

JOHN H. DAVIDSON.

Witnesses:
G. M. FOX,
A. I. TAYLOR.