(No Model.)

D. W. GEIB.

SHUTTER WORKER.

No. 342,348. Patented May 25, 1886.

Fig. 2.

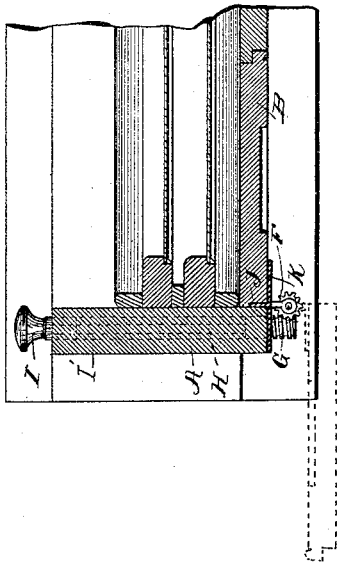


Fig. 3.

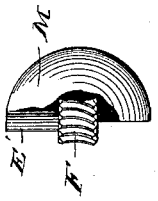


Fig. 4.

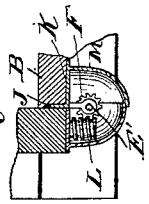
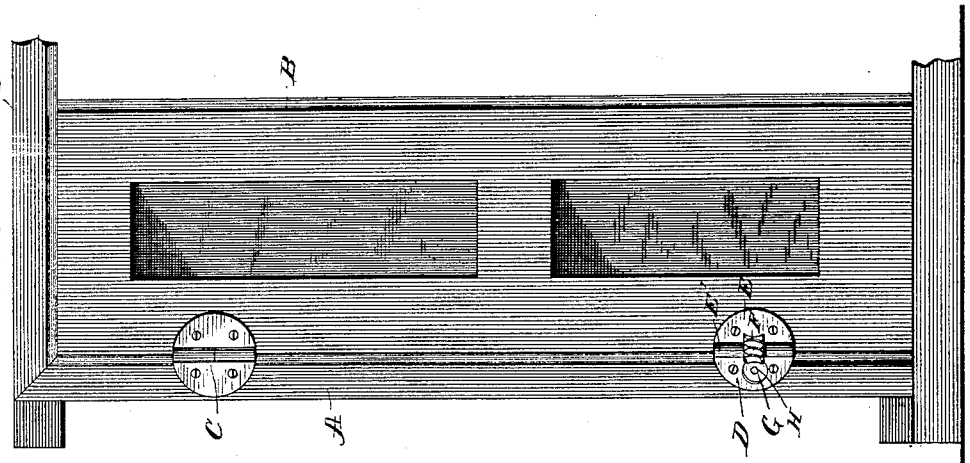


Fig. 1.



Witnesses
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UNITED STATES PATENT OFFICE.

DAVID W. GEIB, OF LANCASTER, PA., ASSIGNOR OF TWO-THIRDS TO WILLIAM S. MICHAEL AND JOSEPH R. GOODELL, BOTH OF SAME PLACE.

SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 342,348, dated May 25, 1886.

Application filed November 12, 1885. Serial No. 182,523. (No model.)

To all whom it may concern:

Be it known that I, DAVID W. GEIB, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Shutter-Hinges and other Hinges; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The chief object of this invention is to provide for opening and closing shutters conveniently without raising the window-sash, although the devices employed would be also available for operating doors, covers, and other hinged parts or contrivances.

The said invention consists, partly, in the combination of a hinge-pintle having a gear-wheel (preferably a worm-wheel) thereon, with a rod which may extend through a window-frame or other analogous structure, and which is provided with a corresponding worm or other gear wheel for engaging therewith.

It also consists in the peculiar construction of the hinge-leaf, the special contrivances for protecting the gearing, and other features of my improvement hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 represents a front view of a closed shutter and window-frame provided with devices embodying my invention, the shields or hoods being omitted. Fig. 2 represents a vertical section of the same on the line *x x* of Fig. 1. Fig. 3 represents a horizontal section of the same on the line *y y*, Figs. 1 and 2, showing the hoods or shields in place. Fig. 4 gives a detail perspective view of one of the leaf-sections.

A represents the window-frame; B, one of the shutters; C, the upper hinge; D, the leaf of the lower hinge, which is attached to the frame, and E the leaf of the lower hinge, which is attached to the shutter. The pintle *e*, attached to the upper knuckle, E′, which is formed with leaf E, has a worm-wheel, F, secured on it, and this meshes with a worm, G, secured on the outer end of a rotary rod, H, mounted in window-frame A, and extending through the latter to the interior of the apartment. A milled head or button, I, is attached to the inner end of said rod, so that it may be conveniently used for turning said rod, and thereby opening or closing the shutter without raising the lower window-sash or in any way opening the window.

For greater security of attachment each hinge-leaf is provided with two flanges, J K, which are at right angles to one another. These are attached, respectively, to the inner edge and outer face of the shutter, or to the corresponding faces of the window-frame.

The worm G and worm-wheel F are provided with threads of such size and pitch as may be suited to the size and weight of the shutter or other part to be actuated thereby. As these gears are often used in exposed situations, I find it convenient and sometimes very serviceable to employ shields or guards L M, the former being a plate or flange attached to the leaf D, and the latter (shield M) having a similar form and structure, but extending from leaf E in the opposite direction and overlapping shield L. These shields will keep foreign matters of a solid kind effectually from the gears F G, and measurably exclude dust and moisture.

Though but one shutter has been shown, it will of course be understood that similar appliances are used with the other. Doors, covers, and other hinged parts may be provided with similar hinges and gears, and opened and shut in the same way. The special advantages in the case of window-shutters are, however, very obvious. Though I have shown the best form of gearing for the purpose, ordinary bevel-gearing may be substituted therefor.

As indicated by dotted lines in Fig. 2, a countersunk bushing, I′, surrounds the rod H. Being flush or nearly flush with the inner face of the molding, which is bored to receive it. This bushing gives a better finish than a plate screwed on the molding. Unlike a plate thus fastened, it may also be used when the surface is not flat. This bushing prevents the wood-work from being worn, and lessens

the friction on the rod. The button on the end of the latter bears against it.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A shield attached to one of the leaves of a hinge, in combination with another shield attached to the other leaf thereof and overlapping the former shield, the said shields serving to protect the pintle and proximate parts, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID W. GEIB.

Witnesses:
ALLAN A. HERR,
IRA H. HERR.