(No Model.)

C. CRAMER.

SHUTTER WORKER.

No. 346,643. Patented Aug. 3, 1886.

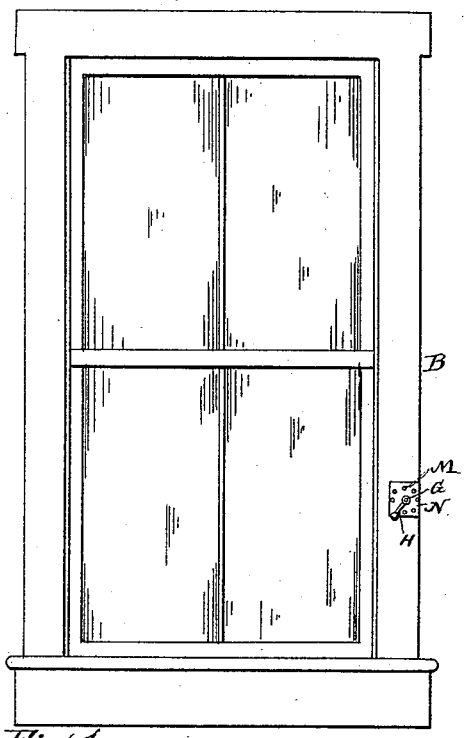


Fig. 1.

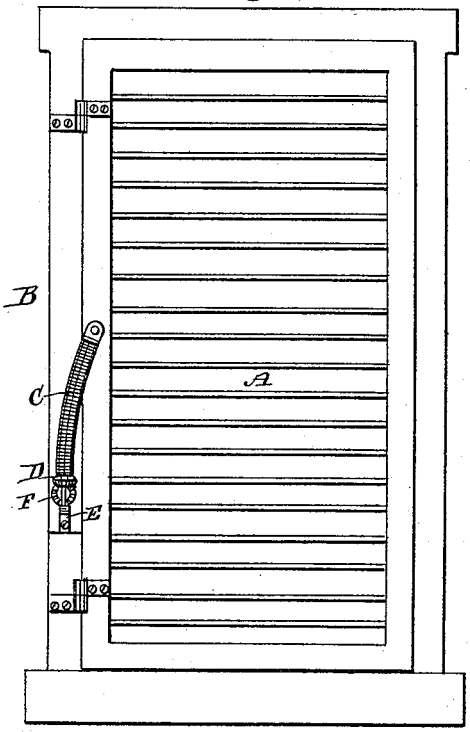


Fig. 2.

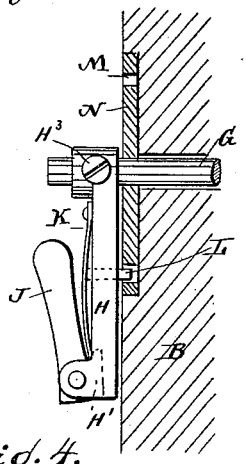
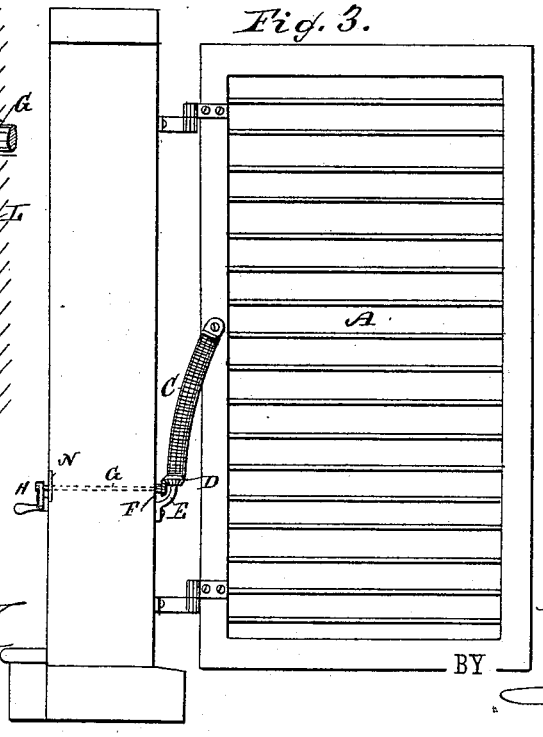


Fig. 4.

Fig. 3.



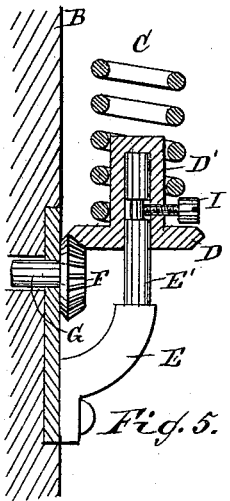


Fig. 5.

WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLEY CRAMER, OF CLARINGTON, OHIO.

SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 346,643, dated August 3, 1886.

Application filed November 5, 1885. Serial No. 181,917. (No model.)

To all whom it may concern:

Be it known that I, CHARLEY CRAMER, of Clarington, in the county of Monroe and State of Ohio, have invented a new and Improved Shutter-Worker, of which the following is a full, clear, and exact description.

The invention consists in the construction and combination of parts and details, as will be fully described and set forth hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a face view of the inner side of the window-frame provided with my improved shutter-worker. Fig. 2 is an outside view of a shutter provided with my improved shutter-worker, the shutter being closed. Fig. 3 is a side view of the shutter, the same being open. Fig. 4 is a detail view of the device for locking the shutter in place when opened, the said locking device being shown on an enlarged scale. Fig. 5 is a detail sectional view of the lower end of the spring, the cog-wheel with which it is connected, and the arm on which the cog-wheel revolves.

The shutter A is hung on the window-frame B in the usual manner. The spiral spring C has one end secured to the inner side piece of the shutter, and the other lower end of the said spring is secured to the neck D′ of a lever-pinion, D, mounted to turn on the shaft E′, projecting upward from an arm, E, secured on the outside of the window-frame B, and through said neck D′ a screw, I, is passed, the inner end of the screw being in an annular groove in the shaft or pin E′, for the purpose of preventing the bevel-pinion D from working upward, but at the same time permitting said bevel-pinion to turn on its shaft or pin. The bevel-pinion D engages with the bevel-pinion F on the outer end of the shaft G, passed through the frame B, and provided on its inner end with the crank H, held in place by a set-screw, H^2, thus permitting of cutting off the rod G the proper length, according to the thickness of the casing, so that said rod will not project from the inner side of the casing more than is necessary, and then locking the crank H in place by means of the set-screw. To the free end of the crank H the handle-lever J is pivoted, which is provided with a hook, H′, on its pivoted end, on which hook the free end of the spring K rests, which is secured to the crank H at the shaft G, and from which spring the pin L projects through the crank, so that its end can be passed into one of a circle of apertures, M, in the plate N, secured on the inner side of the window-frame, and through the center of which plate the shaft G passes.

The operation is as follows: To open or close the shutter, the handle J is swung from the crank H, whereby the free end of the spring K is raised, thus permitting the spring to bulge outward, whereby the pin L is withdrawn from an aperture, M, in the plate N, and then the shaft G can be turned, whereby the spring C is turned on its longitudinal axis and the shutter is swung to the right or left, as may be desired. When the shutter is to be locked in any desired position when open, the handle J is swung against the crank and the pin L pushed into one of the apertures M.

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

1. The combination, with a swinging shutter, of the spring C, having one end connected with the inner edge of the shutter, the bevel-pinion D on the other end of the said spring, the arm E, and the bevel-pinion F, engaging with the pinion D, and mounted on the shaft G, which is mounted to turn in the window-frame, substantially as herein shown and described.

2. The combination, with a swinging shutter, of the spring C, connected with the same in the manner set forth, the shaft G, connected with the said spring, the crank H on the end of the shaft, the handle J, pivoted on the crank, the spring K on the crank, the pin L on the spring, and the plate N, provided with the apertures M, substantially as herein shown and described.

3. The combination, with a hinged shutter, of a shaft in the window-frame, a spring connected with the shutter and with mechanism operated by the shaft, the crank H, secured to the inner end of the shaft, the handle-lever

J, pivoted in the free end of the crank and provided with a hook, H′, the spring K, secured on the crank and resting on said hook, the pin L, projecting from the spring K through an aperture in the crank H, and the plate N, provided with a circle of apertures, M, substantially as herein shown and described.

4. The combination, with a hinged shutter and its frame, of the arm E, provided with the pin or shaft E′, having an annular groove, the bevel-pinion D, mounted on said shaft or pin and provided with a neck, D′, the spring C, secured to the shutter and to the neck D′ of said bevel-pinion, the screw I, passed through the neck D′ and into the groove in the shaft or pin E′, and a bevel-pinion mounted on a shaft passed through the window-casing, which bevel-pinion engages with the above-mentioned bevel-pinion D, substantially as herein shown and described.

5. In a shutter-worker, the crank H, the lever J, pivoted to the lower end of the crank and having a hook on the inner side adjacent to its pivoted end, and the spring K, secured to crank H, bearing at its lower end on the said hook, and provided with a pin, L, extending through the crank H and adapted to engage an apertured plate, substantially as set forth.

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Witnesses:
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