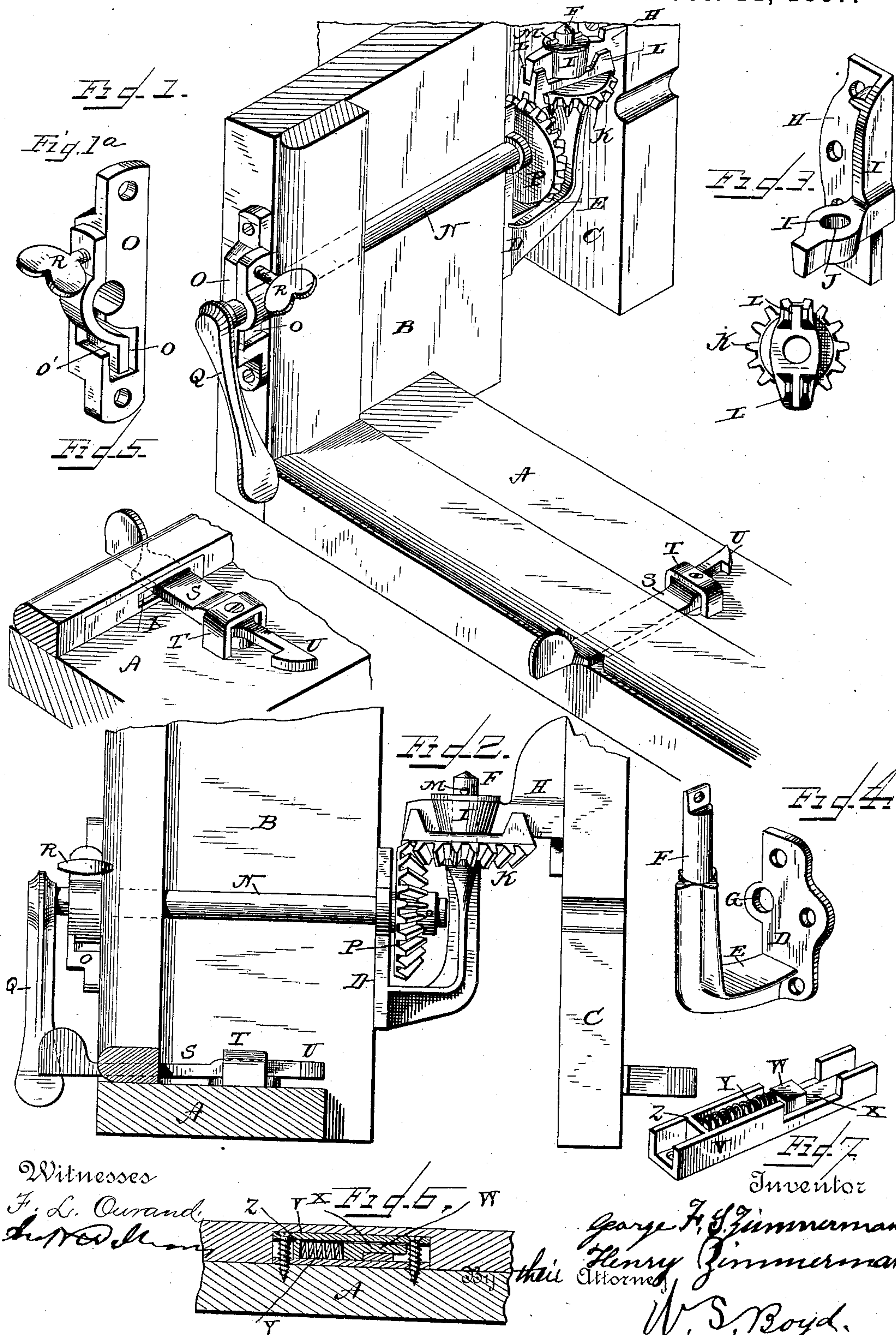


(No Model.)

G. F. S. & H. ZIMMERMAN.
SHUTTER WORKER.

No. 371,242.

Patented Oct. 11, 1887.



UNITED STATES PATENT OFFICE.

GEORGE F. S. ZIMMERMAN AND HENRY ZIMMERMAN, OF FREDERICK,
MARYLAND.

SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 371,242, dated October 11, 1857.

Application filed December 4, 1886. Serial No. 220,703. (No model.)

To all whom it may concern:

Be it known that we, GEORGE F. S. ZIMMERMAN and HENRY ZIMMERMAN, both citizens of the United States of America, residing at Frederick, in the county of Frederick and State of Maryland, have invented certain new and useful Improvements in Devices for Operating Window Blinds or Shutters, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of so much of a window and blind as is necessary to fully show our improved device. Fig. 2 is a side view of the same, partly in section. Figs. 3, 4, and 1^a are detail views of the hinge portion and clamp; and Figs. 5, 6, and 7 are detail views of the spring-catch for securing the blind in its closed position.

To operate window-blinds from the inside of the room without having to raise the window and thus expose the operator to the storm has long been the desire of careful housewives and a subject for the inventive mind, and still to have a device which would be simple, cheap, and effective, but with only partial success. Some are too complicated to be operated by all persons, others are too easily broken, and none of them entirely satisfactory; and in all that we are acquainted with the arm on which the blind is hinged or pivoted is bent or curved from the inner edge or face of the butt, so that the shaft with which the blind is operated passes through a hole in the frame, which requires skill to make properly, besides weakening the frame itself. In others the shaft passes through behind the frame; but since the general introduction of sash weights or balances, such construction is objectionable, as the shaft is in the way of the weights.

This invention relates to that class of blind or shutter workers in which a lever upon the inside of the room is connected by suitable mechanism with the blind, by which the blind can be opened or closed or secured at any angle; and it consists in having the arm of the hinge project outwardly on a line with the inner edge or face of the butt of the hinge, so that the shaft can be secured or passed through a slight notch or groove across the face of the frame, which is easily made by any ordinary

mechanic and does not weaken the frame like a hole through it; and it consists, further, in the improved construction and combination of other parts, as will be hereinafter more particularly set forth.

Referring to the accompanying drawings, in which the same letters of reference indicate corresponding parts in all the figures, A represents the bottom of the casing of the window, and B the sides, to which the blinds C are secured at the top by the ordinary hinge and at the bottom by means of our improved hinge, which forms part of our invention. The part of this hinge which is secured to the window-casing consists of the butt D, which can be either flat or mortised, and is provided at its lower portion with the outwardly and upwardly extending arm E, the upper end of which is formed into a pintle or bearing, F. The butt is secured to the casing in the ordinary manner, and is provided near one edge with a perforation, G. The part of the hinge which is secured to the blind consists of the butt H, which is secured to the blind in the ordinary manner, and is provided with a lug or projection, I, having a perforation, J, near its middle. A small bevel-pinion, K, having two pairs of ears, L L, upon its back or upper portion, is journaled upon the pintle F, the outer and inner portions of the arm or lug I engaging with these ears and the perforation J fitting upon the pintle F. A pin or cotter, M, through the pintle holds the arm I in engagement with the ears, and also keeps the blind from being thrown off its hinges.

A shaft, N, is secured across the side of the casing by means of the perforation G in the butt D and a bearing secured upon the inner side of the casing, the side of the casing being provided with a groove in which the shaft is placed to be out of the way of the window-sash, the lower portion of the sash being cut away to pass over it. A bevel-wheel, P, is secured upon one end of this shaft, which engages with the pinion K, and a handle or lever, Q, is secured upon the other end, by means of which the shaft is rotated. By making the wheel P larger than the pinion K the handle Q does not have to move through half a circle to open or close the blind, so that where the

casing does not extend to the inner face of the wall, the hand of the operator is not caught between the end of the handle and wall or casing when opening or closing the blind.

5 The bearing consists of a base-piece, O, having a notch or recess, o, opening out at the side and on top, and an upper piece, O', one end of which fits in the recess o, and the other end is secured to the base-piece by means of a set-
10 screw, R. The shaft N is secured in the bearing formed by these two pieces and clamped between them by the set-screw, so that the motion of the blind can be so retarded that in windy weather it will not be thrown so vio-
15 lently as to break it or to break the glass or keep the catch from locking it in its closed position. The blind can also be secured at different angles by the clamp, but not so rigidly that it will not move slowly one way or the
20 other with the wind, and thus prevent its being broken, as would perhaps be the case if a positive means, as a ratchet, &c., were used.

By passing the shaft in a groove in the side of the casing the frame is not weakened, as it
25 would be were it passed directly through the frame; and it also permits the arm on the hinge-butt to be placed in a line with the shaft, and thus serve as a support for the blind as well as the operating mechanism. It also
30 avoids passing it through behind the frame in the space which is occupied by the balance, and thus interfering with its free motion in raising or lowering the sash, as must be done where the hinge and shaft are not in a line.

35 To make a close joint at both ends of the shaft the hinge-rail of the blind has a notch in it to correspond with the groove in the casing, and the inner side of the bead-strip is also provided with a similar notch or recess, the bearing O being placed directly inside of the bead-strip.

To make a complete and satisfactory inside blind-worker requires that such a catch be used for holding the blind in its closed position as can be also operated from the inside
45 without having to raise the sash to release it, and it also requires one that will be positive and secure in its operation. Such a one we have shown in Figs. 5, 6, and 7, and which
50 consists of the bar S, pivoted to swing horizontally upon the sill or bottom of the casing by means of a screw and the loop or staple T. The outer end of this bar is provided with a hook, U, which engages with a similar hook
55 upon the blind, and the inner end, which extends under the bead-strip, is formed with a suitable handle or thumb-piece. The under side of the bead-strip is notched where the bar

passes under it, and is provided with a metallic box or casting, V, which is secured within
60 this notch, and is also provided with a notch upon its under side. Within this casting is a bolt, W, having a reduced portion, X, and a coiled spring, Y, one end of which bears against the head of the bolt and the other end
65 against a cross-bar, Z. When the catch is in position, the spring holds the hook at its outer end in engagement with the hook upon the blind until it is released by the operator pressing the inner end of the bar. As soon as the
70 hook has been released the blind can be opened by turning down the handle Q upon the end of the shaft N, the operator using one hand for the bar S and the other for the handle Q. As soon as the hand is removed from the end
75 of the bar S the spring Y within the casing forces it back into its original position, so that the hook upon its end will automatically engage with the hook upon the blind as soon as the blind is closed. This construction places
80 the spring within the inside of the sash, where it is entirely removed from the action of water and kept from rusting.

Having thus described our invention, we claim—

1. In a blind-worker, the combination of a shaft journaled in bearings transversely across the casing, having a handle at one end and a beveled gear-wheel at the other for operating the blind, one of said bearings consisting of a
90 base-piece having a recess at one end and an upper piece having its lower end in said recess, and a set-screw for securing the other ends of said pieces together, said bearing forming a clamp journal-box.

2. In a blind-worker, the combination of a device for operating the blind from the inside of the room and a catch for securing the blind in its closed position, said catch consisting of a bar having a hook at one end and a thumb-piece at the other, a loop or staple and a screw for securing said bar to the sill of the casing, a metallic casting within a notch upon the under side of the bead-strip, a bolt within said
105 casting having a reduced portion, and a coiled spring within said casting, said casting being provided with a notch upon its under side and a hook upon the blind.

In testimony that we claim the foregoing as our invention we hereunto set our hands and
110 seals.

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Witnesses:

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