

W. CRUSE & J. D. ISAACS.  
Shutter.

No. 210,015.

Patented Nov. 19, 1878.

Fig. 1.

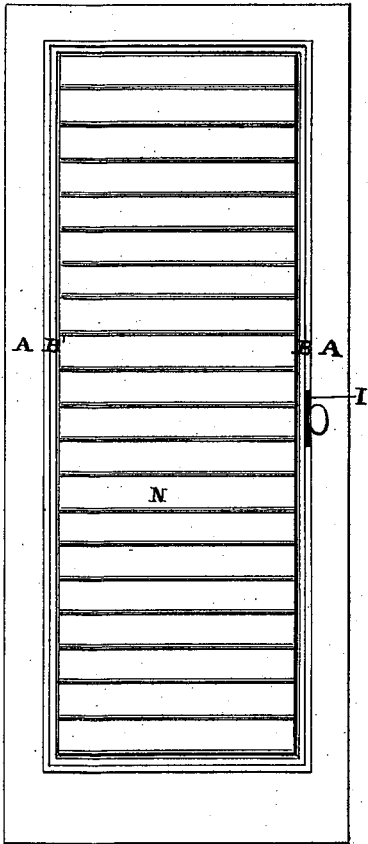


Fig. 2.

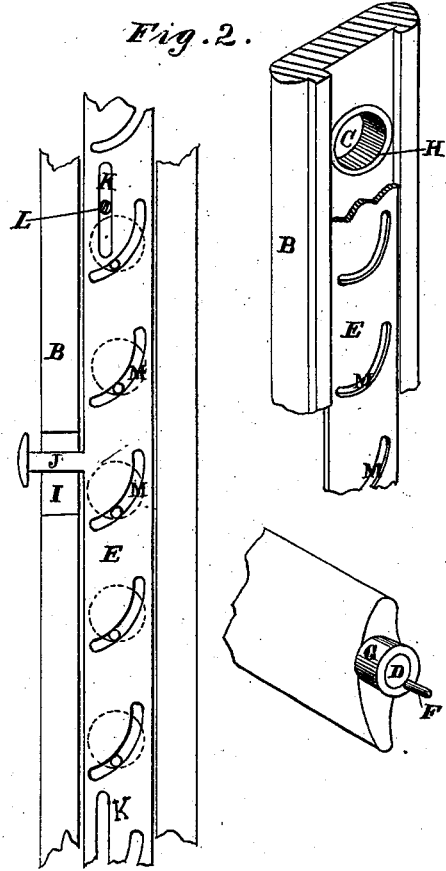
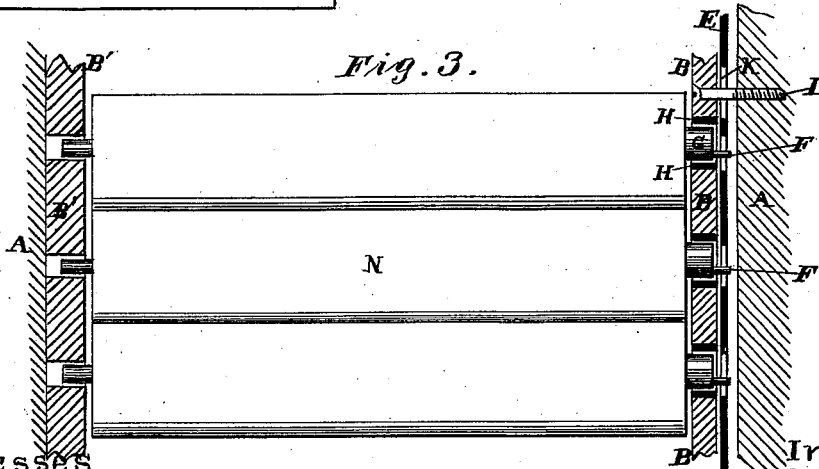


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN SHUTTERS.

Specification forming part of Letters Patent No. 210,015, dated November 19, 1878; application filed September 12, 1878.

*To all whom it may concern:*

Be it known that we, WILLIAM CRUSE and JOHN D. ISAACS, of Oakland, county of Alameda and State of California, have invented an Improved Blind-Adjuster; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of the shutter. Fig. 2 shows details of construction—the grooved bead, the obliquely-slotted sliding plate, and the tenon with eccentric-pin; and Fig. 3 is an elevation, with the stiles and frame in vertical section.

Our invention relates to an improved mechanism for operating the slats of blinds, by which the ordinary rod connecting the slats may be dispensed with.

Our improvements consist in providing at one end of the slats a ferrule carrying a pin or lug, which lug engages with an oblique slot in a strip which slides in a rabbet on the back of the bead carrying the slats. This rabbet is formed in the side of the bead opposite to that on which the slats are, so that it is entirely out of sight. A thin projecting handle is fastened to the strip which has the slots in which the pins travel, so that by sliding said handle up or down the strip turns the slats or any desired portion simultaneously, so that by giving a rectilinear motion to the strip a rotary one is imparted to the slats.

Let A represent the stiles or frames of an ordinary Venetian blind, to which the bead or bead-strips B B' are fastened by means of screws, as hereinafter described. The circular mortises C for the tenons D on the blind-slats are cut in the vertical or horizontal bead-strips, and not in the stiles, so that when the frame formed by the four beads is removed the slats all come with it without having to separate the stiles.

On the back of the bead-strip B, on the side away from the slats and next to the stiles, is formed a rabbet, extending the length of said bead, and of sufficient depth for the metal strip E to set in a little more than flush with the edges of the rabbets, as shown. In this metal strip E is cut a series of oblique slots, preferably curved, in which the pins or lugs F in the ferrule G in the tenons of the blinds

engage. In each of these ferrules is a pin, F, which is secured to or forms part of said ferrule. This pin is placed just inside the periphery of the ferrule, so as to form no obstruction to its free revolution in the mortise, while at the same time it projects through the mortise into the slots in the sliding metallic strip E.

The mortises on the bead on one side of the frame are made larger than those on the opposite side, so as to accommodate the size of the ferrules which are on the tenons at that end of the slats. These large mortises are in the bead-strip B, on the back of which the rabbet is cut for the metal strip. In these larger mortises, for fine work, a metallic bushing, H, may be placed, so that the ferrules will rotate in a metallic journal and revolve smoothly. This, however, is not necessary, as the ferrules may revolve in the wood in the same manner that the ordinary blind-slat tenons do, as in the bead B'.

A slot, I, is cut through the quirk on the bead, through which projects the knob-stem attached to the edge of the metal strip or moving plate E, and this slot is sufficiently extended so that the knob may be moved up or down far enough to slide the plate the necessary distance to open or close the slots, as hereinafter described.

Slots K are cut in the strip E, through which the screws, L, holding the beads to the frame pass, while at the same time the strip may be moved up and down.

The operation of our device is as follows: The necessary number of slats to fill the frame have the ferrules slipped over the tenons at one end, and the bead-strips having previously been mortised, the slats are put in place, all of the tenons having ferrules on them being in the bead which has the rabbet cut in its back part. The side beads are joined together by the top and bottom pieces and the whole set into the frame formed by the stiles. Before setting in place, however, the slotted metallic strip is set into the rabbet, when one pin in each ferrule on the end of the slat will fit into one of each of the oblique curved slots or grooves in the plate. Then, when the beads and slats are set into the frame, the screws L are screwed through the beads into the frame,

passing through the elongated slots K in the metallic strip, and securing the bead-strip and slats in position. The metallic strip is then inclosed in the rabbet in the back of the bead, and is prevented from getting out of place by the frame on one side and the bead on the other, while at the same time a sliding vertical motion is permitted. The slot in the quirk, through which the knob projects, is quite small, since a thin flat plate, J, connects said knob with the metallic strip, so that the whole mechanism for operating the blind-slats is in the bead-strip.

Now, by moving the knob in one direction it slides the metallic plate in that direction, and the curved slots in the metallic strip turn the wrist-pins in the ferrules on the ends of the slats, which turn all the slats simultaneously. By sliding the knob back the operation is reversed and the slats opened or closed at will.

By this construction a blind-stop is perfected which is at once simple in operation and not liable to get out of order. In devices of this kind it has usually been necessary to cut slots or grooves in the frame itself, or else receive the mechanism inside of a plate which is on the outside of the beading so as to be in sight. With these devices the operating mechanism has usually been cumbersome or liable to get out of order, and in order to make repairs the stiles had to be separated so as to get at the mechanism. Moreover, a deep slot for the escutcheon-plate and knob had to be cut in the frame, all of which entails expense.

In the construction herein described the rabbet on which the sliding operating-strip is placed is cut in the bead in a position which conceals the strip and operating parts. In case it is necessary, the beads and all may be removed without separating the stiles or injuring the frames. The metal strips can be punched out of metal at little cost, and the plate and knob which move it are easily attached. The whole device is neat in appearance, as the gearing is all out of sight.

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

1. The blind-slats N, turning upon tenons or

gudgeons which enter the bead-strips B B' at the sides, on one side said gudgeons having ferrules G, with the eccentric-pins F, in combination with the sliding plate E moving in a rabbet in the back of the bead-strip, and having the oblique slots M to receive the pins F, substantially as herein described.

2. The bead-strips B B', fitted to receive the blind-slats, which turn upon gudgeons, as shown, one of said strips having a rabbet in its exterior face, so that the slat-operating plate will be below the face, and the whole may be introduced to or removed from the frame without cutting the latter, substantially as herein described.

3. The rotating blind-slats N, with their eccentric pins or crank-arms F, operated by the sliding plate E, with its oblique slots M, in combination with the flat plate J, attached to the sliding plate and projecting out through the quirk to obviate cutting the stile or frame, substantially as herein described.

4. The obliquely-slotted plate E, moving in the rabbeted groove, as shown, in combination with the rotating slats N, with their eccentric pins F entering said oblique slots, whereby a rotary motion of the slats is produced by a rectilinear movement of the plate E, substantially as herein described.

5. The rabbeted bead-strip B, fitted to receive the directly-acting obliquely-slotted sliding plate E upon one side, and the ferrules of the rotating blind-slat gudgeons upon the other, said bead-strip being provided with the lining or journal rings H, substantially as herein described.

6. The directly-acting obliquely-slotted sliding plate E, operating to turn the slats by means of eccentric-pins F, as shown, said plate having the longitudinal slot K, through which a screw may pass to fasten it to the frame or stile without interfering with its action, substantially as herein described.

In witness whereof I have hereunto set my hand.

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JOHN D. ISAACS.

Witnesses:

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