

UNITED STATES PATENT OFFICE.

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SLAT-OPERATING MEANS FOR SHUTTERS.

SPECIFICATION forming part of Letters Patent No. 640,098, dated December 26, 1899.

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To all whom it may concern:

Be it known that I, HENRY A. CORDRAY, a citizen of the United States, residing at Brenham, in the county of Washington and State of Texas, have invented certain new and useful Improvements in Slat-Operating Means for Shutters; 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.

This invention relates to blinds or shutters having pivoted slats adapted to be opened more or less for purposes of ventilation and light. Heretofore wooden rods or bars have been generally employed for connecting the slats in series and are of necessity large in order to receive the staples. Such wooden rods preclude a neat finish in inside blinds having slats of about two inches in length, being clumsy and bulky. Moreover, a metal slat-operating rod or bar is neat, strong, light, and occupies a comparatively small space and can be applied to outside blinds where a thin blind-stop is required to the securement of a neat inside finish.

With the foregoing ends in view and such others as may suggest themselves to persons skilled in the art as the details of the invention are comprehended the improvement consists of the novel features and combinations of parts, which hereinafter will be more fully set forth and claimed.

Within the purview of the invention various changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages thereof.

In the drawings, Figure 1 is a front view of the lower portion of a shutter, showing the application of the invention. Fig. 2 is a section on the line X X of Fig. 1. Fig. 3 is a detail view in elevation of a clip, showing one manner of preventing movement thereof on the rod. Fig. 4 is a view similar to Fig. 3, showing a different way of preventing movement of the clip on the rod. Fig. 5 is a cross-section of the rod, showing the relation of the fastenings between it and a slat. Figs. 6 and 7 are detail views of different forms of blanks.

Corresponding and like parts are referred to in the following description and indicated

in all the views of the drawings by the same reference characters.

The blind or shutter is of ordinary construction and comprises the frame 1 and pivoted slats 2. A plate 3 is attached about centrally to the lower rail, and its outturned edge 4 is notched to engage with the lower bent end 5 of the slat-operating rod 6 and hold it and the slats at an adjusted position.

The slat-operating rod is stout wire or may be formed of a narrow strip of metal bent between its longitudinal edges, the gage or size of the rod depending upon the length and number of blind-slats to be operated thereby. Clips 7 are secured to the rod and embrace it and are formed with apertured ears 8, through which the staples 9, connecting the slats with the clips, pass. These clips are located opposite the top edge of the respective slats and are formed of oblong blanks, which are folded or bent about the rod 6. The blanks may have the form of an oblong link, as shown in Fig. 7, or they may be constructed of sheet metal, as indicated in Fig. 6. The end portions of the blanks are rounded to present a neat finish and admit of a free movement of the staples and clips when operating the rod. The end portions of the clips are held together primarily by the force applied thereto when fitting them to the rod and also by the staples 9, which are looped into the end thereof.

The clips when bent about the rod and clenched are prevented from slipping by a projection 10, which may be a drop of solder or a spur. The blank shown in Fig. 6 consists of a middle and end portions, the latter being connected by neck portions 11 with the middle portion and the latter having an opening 12. When the clips are in place, a drop of solder is applied to the rod through the opening 12. When the clip formed from the blank shown in Fig. 7 is in position, the drop of solder or spur extends through the space formed between the parallel members thereof. The spur is formed by being cut or pressed from the body of the rod by means of a suitable tool. The bent end 5 of the rod is adapted to be sprung into one or the other of the notches in the flange 4 and hold the slats at the required adjusted position, and when engaged with the top edge of the lower rail the slats are held closed. The clips may be ce-

mented or secured to the rod in any positive manner, so as to prevent their slipping.

Having thus described the invention, what is claimed as new is—

- 5 1. In a blind having pivoted slats, a rod, clips embracing the rod and having their end portions apertured and brought together, and staples connecting the apertured ends of the clips with the slats, substantially as described.
- 10 2. In a blind having pivoted slats, a rod, clips embracing the rod and having their end portions apertured and brought together and having their middle portions open, staples connecting the apertured ends of the clips
- 15 with the slats, and projections extending from

the rod through the open middle portions of the clips, substantially as described.

3. The combination with the pivoted slats of a blind, and a metal rod, of clips formed from oblong blanks having their ends rounded 20 and bent about the rod, staples connecting the clips with the slats, and means for securing the clips to the rod, substantially as described.

In testimony whereof I affix my signature 25 in presence of two witnesses.

HENRY A. CORDRAY. [L. S.]

Witnesses:

D. E. LEAGUE,

W. L. SALLIS.