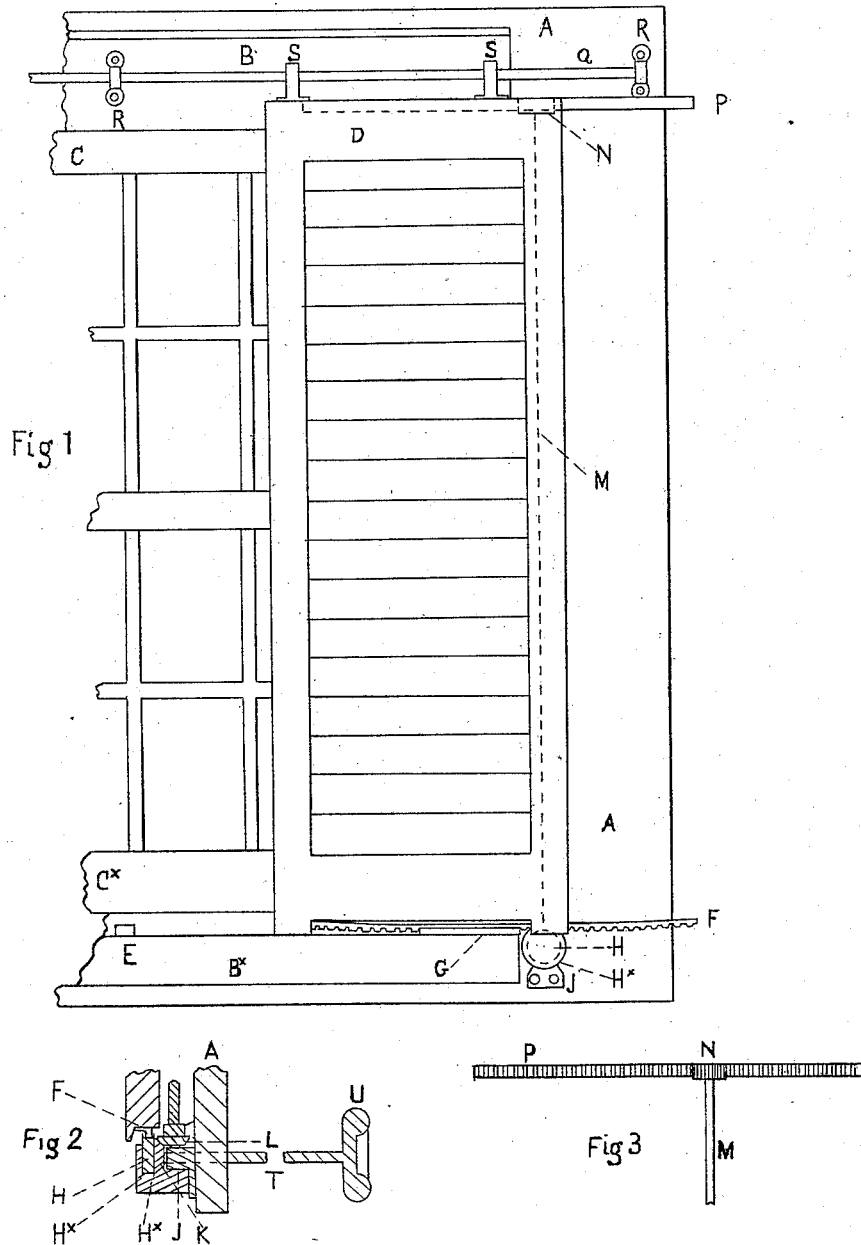


(No Model.)

C. B. EASTMAN.
SHUTTER WORKER.

No. 423,037.

Patented Mar. 11, 1890.



WITNESSES:

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CHARLES B. EASTMAN, OF ANDOVER, MASSACHUSETTS.

SHUTTER-WORKER.

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To all whom it may concern:

Be it known that I, CHARLES B. EASTMAN, a citizen of the United States, residing at Andover, in the county of Essex and State of Massachusetts, have invented a new and useful Window-Blind Hanging, of which the following is a specification.

The nature of my invention is that of a rod or bar attached to a window-frame and placed above each blind, respectively, (of the pair of blinds generally used,) on which rod the blind slides back and forward in a direction parallel with the face of the window. At the upper end and at the lower edge of the blind is fastened, respectively, a rack. Upon the lower rack plays a cog-wheel, which is located beneath the rack and is rotated by means of a shaft passing horizontally through the building-wall, inside of which the shaft is actuated by a hand-wheel, (or a crank,) by which means the blind is shut or opened at pleasure while the operator is inside the house and the window is closed. An upright rod with a bevel-wheel at its lower end (actuated by a bevel-wheel and the crank below, already mentioned) rotating works upon a second rack at the blind top, making the motion of the blind uniform; and the object of the device is to furnish a cheap, reliable, easily-operated, and strong device for opening and closing window-blinds and holding them thus.

Figure 1 is a front view (looking at the outside of the building) of my device. Fig. 2 is a side view of one of the details of my invention, hereinafter more fully explained. Fig. 3 is a back view of the upper rack P, cog-wheel N, and part of upper wheel-rod M, hereinafter described.

In the drawings, A A, Fig. 1, represents the wall of the building.

B B^x is the window-frame.

C C^x are the upper and lower sashes of an ordinary window.

D is a window-blind, represented as half open. The blind is located close to the face of the window, as is common with window-blinds, and when my device is in operation the blind slides to the right till no portion of it obscures the view when looking out of the window, the blind being then open. In alternation the blind slides to the left till it reaches the point at the middle horizontally

of the window-frame, where is located the catch E.

F is a rack fastened firmly to the lower edge of the blind D. It is seen in the drawings to be bent upward slightly at its right-hand end for a short distance, and is also bent upward for a longer distance at the left-hand end.

G, Fig. 1, is called the "rack-guide," and is a piece of sheet metal fastened to the top surface of the window-sill B^x, bent at the side (sometimes both sides) of the rack-guide, and proceeding upward to nearly the height of the upper side of the rack F.

H is a cog-wheel, whose bearing J is screwed firmly to the building-wall at the right-hand end of the window-sill B^x. This cog-wheel H bears on each face of it a plain disk H^x H^x, called the "guide-disks," (see Fig. 2,) and between these two disks the rack F passes, the pair of disks holding the rack F in place, (for which reason the pair are called the "wheel-rack guides.") Sometimes I use only the front wheel-rack guide. In Fig. 2 it is seen that to the right-hand side of the cog-wheel H is fastened a bevel-wheel K, which, rotating with the cog-wheel H, rotates in turn a similar bevel-wheel L, Fig. 2, which latter is attached to the lower end of a shaft or rod called the "upper wheel-rod," (indicated by a dashed line M in Fig. 1.) This shaft is duly held to the building-wall A A by appropriate bearings (not represented) and bears at its upper end a cog-wheel N, Fig. 2, (dashed lines,) called the "upper cog-wheel," which is located on the farther side of a rack P, Fig. 1. (Sometimes I place this upper cog-wheel and the upper rack P at the middle portion of the blind or at any other convenient height.) The rack P bears its cogs at the farther side in the drawings, and is firmly attached to the blind on the rear side of the same and projects from the blind to the right, as seen, similarly to the rack F.

Q, Fig. 1, is a rod or bar called the "sliding rod," held to the window-frame B B^x and to the building A by the rod-holders R R. Upon the sliding rod pass alternately to the right and left the two blind-holders S S, which at their lower ends are firmly attached to the top edge of the blind D.

T, Fig. 2, is a rod or shaft called the "spindle," fastened at its left-hand end to the cog-

wheel H and the bevel-wheel K, passing through the bearing J and through the building-wall A, inside of which wall (in the building) it bears a hand-wheel (or sometimes a crank) U. At the left-hand side of Fig. 1 are seen the panes of the window which the blind is intended to shade.

The blind in Fig. 1 is shown half-way open, and it is desired to shut it. The operator, inside of the building, placing his hand upon the hand-wheel U, rotates it, thus turning the cog-wheel H. By the same motion he also rotates the bevel-wheel K, and thus the bevel-wheel L. The upper wheel-rod M thus rotates, carrying with it the upper cog-wheel N. The rotation of these wheels H and N, acting, respectively, upon the racks F and P, carries the blind to the left till it reaches the catch E, which arrests the motion to the left. The other blind (not represented) being actuated in a similar manner, the window is fully shaded. The reversal of the course of rotation of the hand-wheel U draws the blind back to the right till the inner (right-hand) side of the left-hand portion of the blind-frame impinges upon the left-hand end of the rack-guide G, which arrests the motion to the

right, and this half of the blind is fully open. The bending upward of the right-hand end of the rack F allows, when the blind is closed, a slight, almost imperceptible, sagging down of the blind, and thus removes all liability to any undesired motion of the same through a casual touch of the elbow or by the action of the wind. When the blind is open, the same end is attained by means of the slight flexure upward of the rack F. (Seen at its left-hand end.) The rack-guide G and the wheel-rack guides H^x H^x keep during the operations described the blind D duly in its course parallel with the face of the window.

I claim—

The combination of the sliding blind supported by an attachment to the window-frame with a lower and an upper rack, each provided, respectively, with a rotating wheel, both operated by the same spindle T, the upper rack actuated through the upper wheel-rod M, and the composite cog and bevel wheel H K, all substantially as described and shown.

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Witnesses:

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