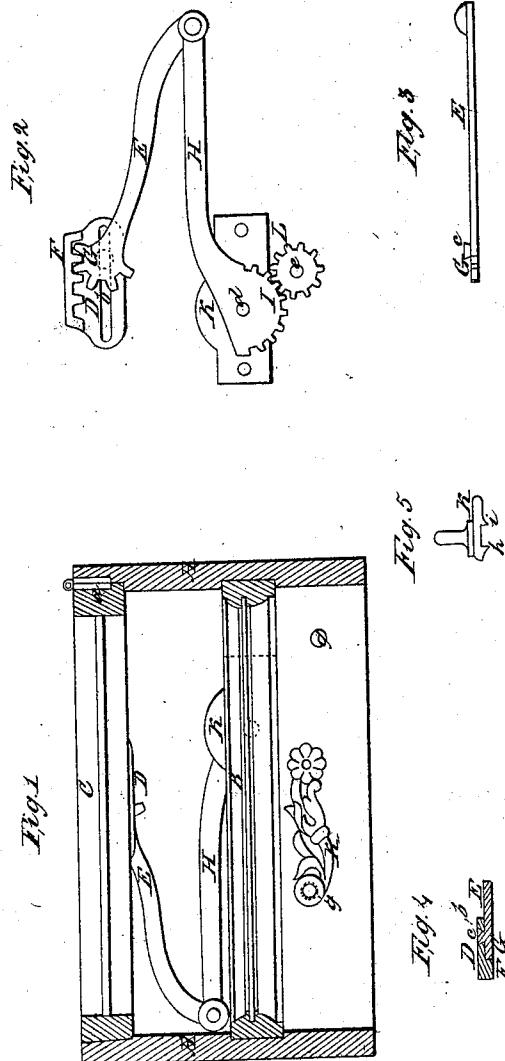


D. E. True,
Shutter Fastener.

N^o 43,533.

Patented July 12, 1864.



Witnesses:
A. R. Haley
Frederick Carter

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UNITED STATES PATENT OFFICE.

DANIEL E. TRUE, OF LEOMINSTER, MASSACHUSETTS.

IMPROVEMENT IN BLIND AND SHUTTER FASTENINGS.

Specification forming part of Letters Patent No. 43,533, dated July 12, 1864.

To all whom it may concern:

Be it known that I, DANIEL E. TRUE, a resident of Leominster, in the county of Berkshire and State of Massachusetts, have inven'ed an Improved Apparatus for Operating and Fastening Window Blinds or Shutters; and do I hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a horizontal sectional view of my said apparatus as applied to a blind and window frame. Fig. 2 is an under side view of the parts applied to the blind and its operating-arm. Fig. 3 is an edge view of the operating-arm of the blind, with the toothed sector on the stud of such arm. Fig. 4 is a transverse section of the slotted plate, the toothed rack, and the stud of the blind and its operative arm.

My present invention, although in some respects like that described in Letters Patent No. 13,890, granted to me on the 4th day of December, A. D. 1855, yet differs in others materially therefrom and can be used to better advantage.

In the drawings, A denotes a window-frame containing one or more window-sashes, B, and having a blind, C, applied to it in the ordinary manner—that is to say, so as to swing on hinges, one of which is represented in Fig. 1 at *a*. To the lower surface of the lower bar of the blind a slotted plate, D, is affixed, such plate being made with a straight slot, *b*, in it for the reception of a headed stud, *c*, projecting upward from a curved arm, E. Furthermore, there is applied to and so as to project downward from the plate D a toothed rack, F, which engages with a toothed sector, G, fixed to the arm E, and having its arc of teeth concentric with the stud *c*, the whole being as shown in Figs. 1 and 2. The arm E at its inner end is jointed to another arm, H, which projects from a toothed sector, I, which is supported on a vertical fulcrum or pin, *d*, and is placed within an open box or case, K, secured to the window-frame sill and underneath the sash. Another toothed sector, L, fixed to a vertical shaft, *e*, engages with the sector I. A crank, K, projects from the shaft *e* and in rear of the sash, and should be so applied to the

shaft *e* as to be capable, while being turned of putting such shaft in rotary movement. The application of the said crank K to the said shaft *e* should also be such as to enable the crank to be raised on and off either of two locking studs, *f g*, arranged as shown in the drawings.

Fig. 5 is an end view of the crank, showing it as provided with two beveled projections, *h i*, to operate with the studs *f g*, and aid in holding the blind locked when either open or closed. By turning the crank the sector L will be put in rotation and will move its fellow sector I, which in turn will move the arm H through the sector of a circle, the same causing the arm E, its stud *c*, and sector G, to so operate with the slotted plate D and its rack F as to either open or close the blind, as circumstances may require.

From the above it will be seen that the blind will be moved by a power exerted on the inside of the window or within the building of which such window may be a part. The toothed sector G and rack F not only operate to aid the arm E in moving the blind, but to maintain the stud *c* in its due position within and prevent it from binding in the slot *b*. The toothed gears or sectors I L, the crank K, and the locking-studs *f g* not only enable the lever or arm H to be moved to good advantage, but to be locked in position when the blind is either open or closed.

I do not claim a combination of bent levers for opening or closing a blind from the inside of a window, as such a mechanism is well known; but

What I claim as my present invention is as follows, viz:

1. The combination and arrangement of the toothed sector G and rack F with the slotted plate D of the blind and with the stud *c* of the arm E, combined with an operating lever or arm, H, as specified.

2. In combination with the arm H and its arm E, applied to the blind, the two sectors I L, the locking-crank, and the two studs *f g*, the whole being to operate as specified.

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Witnesses:

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