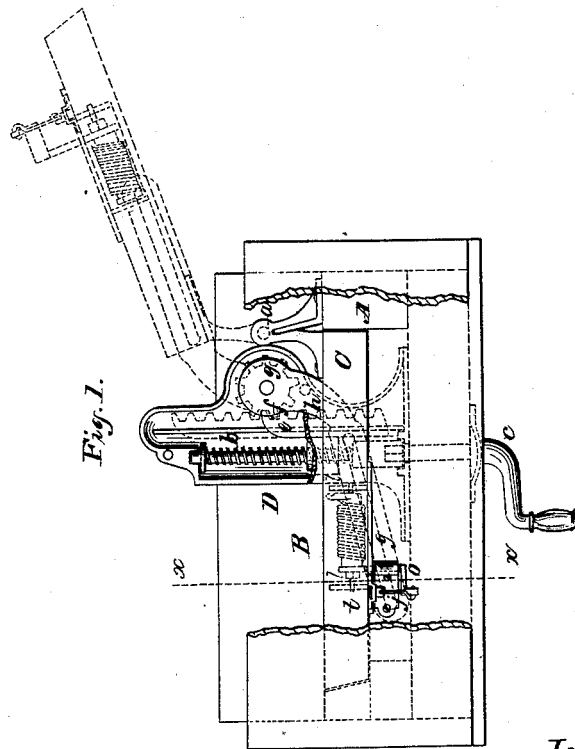
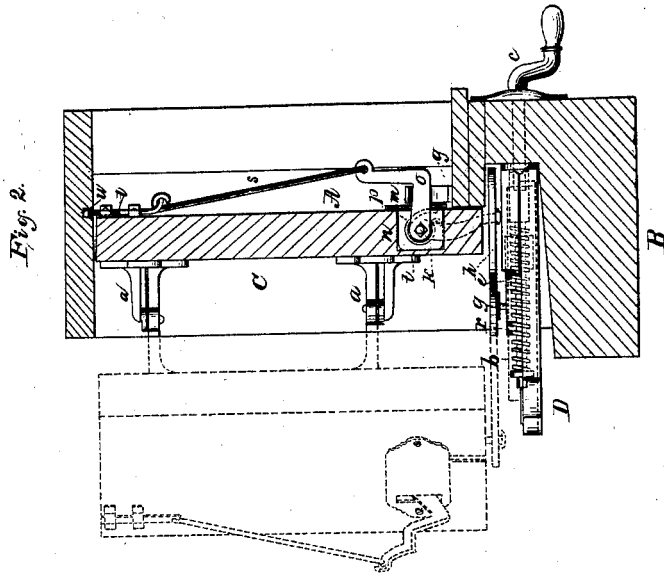


Fay & Mason,
Shutter Worker.

N^o 27,119.

Patented Feb. 14, 1860.



Witnesses
Attest,
Carroll & Co.

Inventors:
Lucius C. Fay
William Mason

UNITED STATES PATENT OFFICE.

L. N. FAY AND WM. MASON, OF WARREN, MASSACHUSETTS.

BLIND-OPERATOR.

Specification of Letters Patent No. 27,119, dated February 14, 1860.

To all whom it may concern:

Be it known that we, L. N. FAY and W. MASON, both of Warren, in the county of Worcester and State of Massachusetts, have
5 invented a new and Improved Mechanism for Opening and Closing Window Blinds and Shutters and also for Securing the Blinds or Shutters in a Closed State; and we do hereby declare that the following is
10 a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a plan sectional view of a
15 window and blind with our invention applied to them; Fig. 2, a vertical section of ditto, taken in the line *x, x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

20 This invention relates to an improvement in the devices hitherto employed for opening and closing window blinds at the inner side of the window, or, within the apartment in the side of which the window is
25 placed without raising the window.

The object of the invention is to obtain a more compact device than the ones formerly used for the purpose, so that the mechanism may be applied without materially changing
30 or altering the proper proportion or relation of the parts of the window and its casing.

The invention further relates to an improved lock attachment in connection with
35 the blind-operating mechanism above specified, the parts being so arranged that the blind will be locked automatically as it closes.

To enable those skilled in the art to fully
40 understand and construct our invention we proceed to describe it.

A, represents a window casing.

B, is the sill and C, a blind or shutter attached to the casing as usual by hinges *a, a*,
45 both of which are shown clearly in Fig. 2.

To the sill B, a metal box D, is attached and permanently secured. Within this box D, a screw shaft *b*, is fitted longitudinally, the inner end of the shaft extending within
50 the apartment and having a crank *c*, at its inner end. On the shaft *b*, a nut *d*, is fitted and to said nut a rack *e*, is attached the rack being parallel with the screw shaft *b*, as shown clearly in Fig. 1. The rack *e*,
55 gears into a pinion *f*, which is within the box D, but is attached to a vertical arbor *g*,

which passes through the top of the box D, and has a slotted arm *h*, secured to it. This slotted arm *h*, is below the blind C, and within the slot of the arm *h*, a projection *j*,
60 is fitted. This projection *j*, is attached to a shaft *k*, the journals of which are in bearings *l*, attached to a plate *m*, which is secured to the inner side and the lower part of the blind or shutter C. The shaft *k*, is
65 fitted in a recess *n*, in the blind or shutter and the projection *j*, extends below the bottom of the blind or shutter. To the shaft *k*, an arm *o*, is attached. This arm projects through a slot *p*, in the plate *m*,
70 and is of bent form so as to catch over a hooked plate *q*, attached to the upper surface of the sill so as to form a catch when the blind or shutter C, is closed, as clearly shown in Fig. 2. On the shaft *k*, a spiral
75 spring *r*, is placed or fitted. This spring has a tendency, to keep the lower end of projection *j*, of the shaft *k*, as far outward from the inner side of the blind or shutter C, as possible.
80

To the end of the arm *o*, a rod *s*, is attached. The upper end of rod *s*, is connected to the lower end of a slide bolt *t*, at the upper part of the blind or shutter C.

The operation is as follows:—By turning
85 the crank *c*, the screw shaft *b*, will of course actuate the rack *e*, through the medium of the nut *d*, and as the rack *e*, gears into the pinion *f*, the latter will be turned and consequently the arm *h*, into the slot of which
90 the projection *j*, of the shaft *k*, is fitted. This movement of the arm *h*, actuates the blind or shutter C, opening or closing it according to the direction in which the crank
95 *c*, is turned. When the blind or shutter is open it is closed by turning the crank *c*, from left to right and when the blind or shutter is closed and its movement consequently arrested the arm *h*, will shove inward the
100 lower part of the projection *j*, of the shaft *k*, and the bent arm *o*, will be moved upward and catch behind the hooked plate *q*, which is attached to the sill B. This movement of the arm *o*, also actuates the bolt *t*, so that it
105 will be shoved upward into a recess *u*, in the under side of the lintel of the casing simultaneously with the upward movement of the arm *o*. It will be seen therefore that by simply turning the screw shaft *b*, in the
110 proper direction the blind or shutter will be opened or closed and automatically locked as it closes, and by turning said screw shaft

in an opposite direction the blind or shutter will be automatically unlocked and opened.

By having the pinion *g*, actuated through the medium of the rack *e*, and screw shaft *b*, as described, the box *D*, may be made quite shallow so that a great space will not be required between the lower end of the blind or shutter *C*, and the sill *B*. Were a screw shaft and worm-wheel employed only, as heretofore, a screw-shaft *b*, of considerable diameter would be required in order to obtain a sufficiently quick movement of the blind or shutter, and this of course would require a box *D*, of a height corresponding to the diameter of the screw-shaft. The application of a box *D*, of large dimensions disfigures the window, a large space between the sill and blind being very objectionable.

We are aware that window blinds and shutters have been opened and closed at the inner side within the apartment by means of a screw and worm-wheel, and we are also aware that racks and pinions have been employed for the same purpose, the latter device requiring a direct pull and thrust of the rack and consequently considerable power to operate it, and the former device requiring much space and consequently a box of considerable dimensions in order that it may be applied to the window. We are also aware

that automatic locking attachments have been applied to window blinds and shutters in connection with means for opening and closing them but so far as we are aware such devices have been arranged quite differently from ours.

We do not claim broadly opening and closing window blinds and shutters at the inner side of the window without raising the same irrespective of the means employed for effecting the object, but,

We do claim as new and desire to secure by Letters Patent,

1. The combination of the screw-shaft *b*, rack *e*, pinion *g*, and slotted arm *h*, applied to the window casing and blind substantially as and for the purpose set forth.

2. The shaft *k*, having the spiral spring *l*, placed on it and provided with the bent arm *o*, and projection *j*, the latter being fitted in the slotted arm *h*, in connection with the hooked plate *q*, the above parts being used with or without the slide bolt *t*, substantially as and for the purpose specified.

LUCIUS N. FAY.
WILLIAM MASON.

Witnesses:

A. R. RODGERS,
EDMUND CODY.