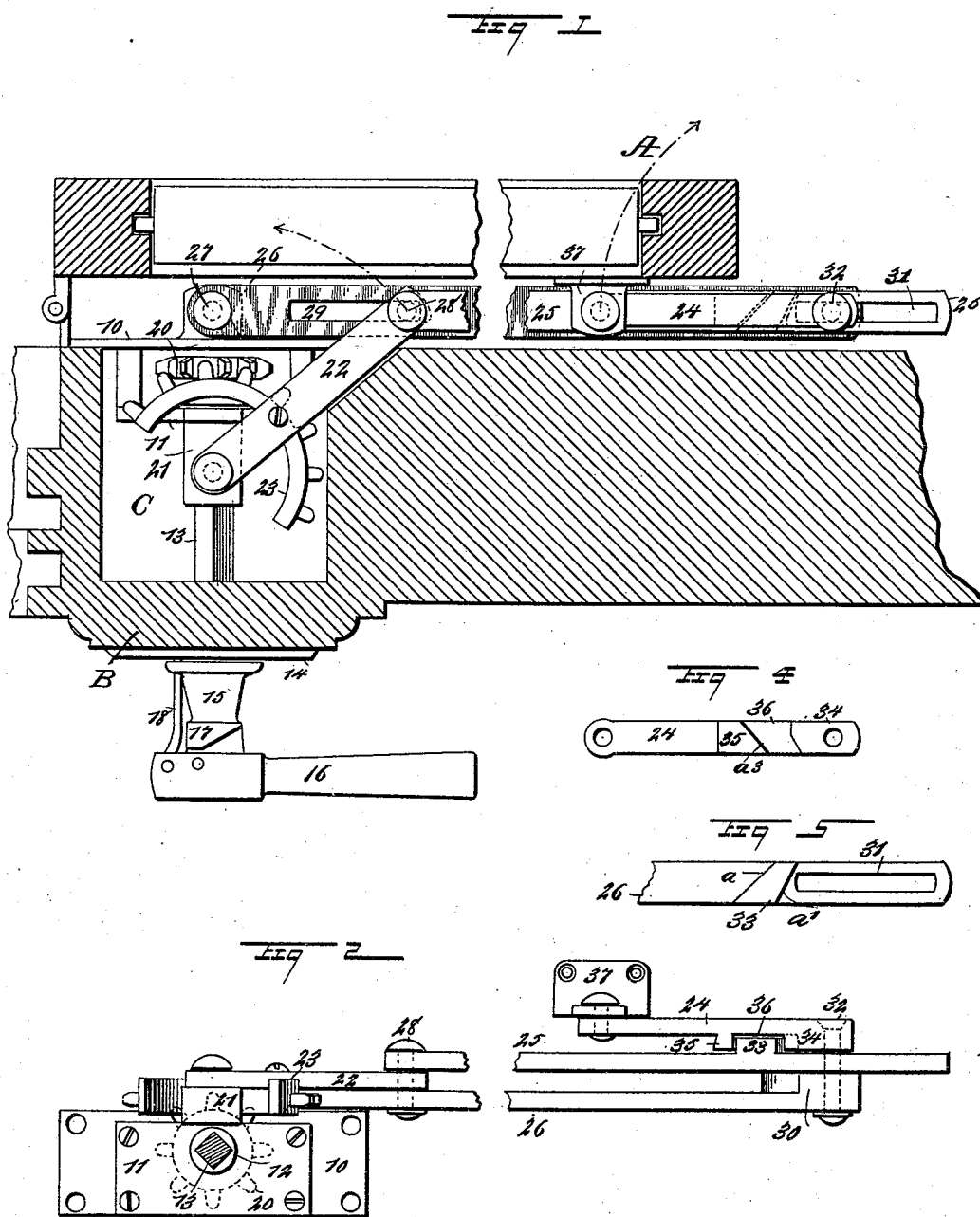


2 Sheets—Sheet 1.

No. 494,006.

Patented Mar. 21, 1893.



WITNESSES:

H. Walker
C. Sedgwick

INVENTOR

L. Kutscher
BY *Munn & Co*
ATTORNEYS.

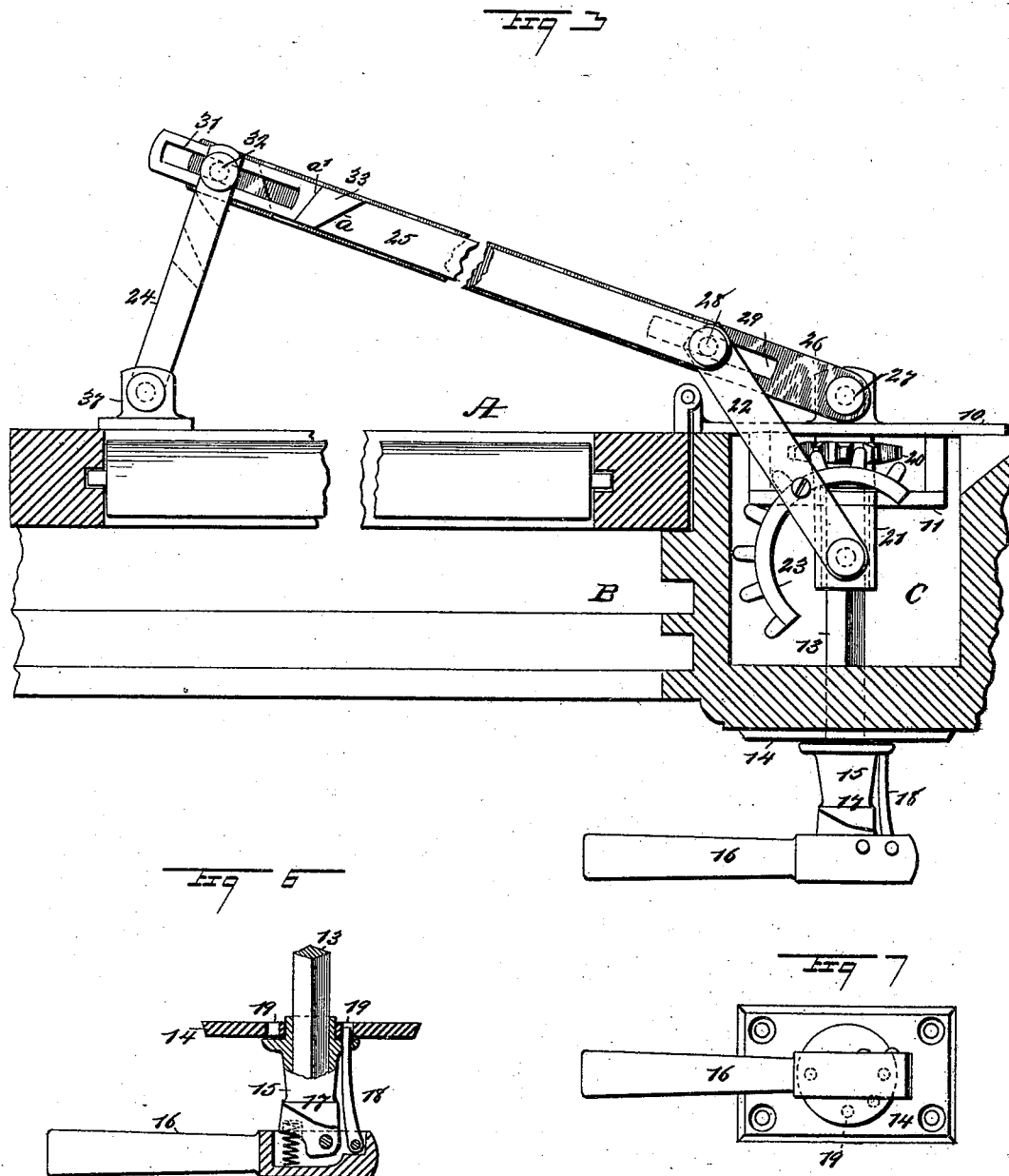
(No Model.)

2 Sheets—Sheet 2.

L. KUTSCHER.
SHUTTER WORKER.

No. 494,006.

Patented Mar. 21, 1893.



WITNESSES:

H. Walker
C. Sedgwick

INVENTOR

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UNITED STATES PATENT OFFICE.

LOUIS KUTSCHER, OF NEW BRITAIN, CONNECTICUT.

SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 494,006, dated March 21, 1893.

Application filed December 10, 1892. Serial No. 454,717. (No model.)

To all whom it may concern:

Be it known that I, LOUIS KUTSCHER, of New Britain, in the county of Hartford and State of Connecticut, have invented a new and Improved Shutter-Worker, of which the following is a full, clear, and exact description.

My invention relates to an improvement in shutter workers, and it has for its object to provide a device exceedingly simple, durable and economic in construction, and capable of convenient and ready attachment to any window frame and shutters belonging to the frame.

Another object of the invention is to provide a device capable of being manipulated from the inside of a room in a manner to open or close the shutters, and to hold them locked in an open or a closed position, or in any intermediate position.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a horizontal section taken through a portion of a window frame and shutter, illustrating the application of the device, the device being in plan view and the shutter in an open position. Fig. 2 is a side elevation of the device disconnected from the shutter and frame. Fig. 3 is a view similar to Fig. 1, the shutter being illustrated in a closed position. Fig. 4 is a bottom plan view of a short link adapted for engagement directly with the shutter. Fig. 5 is a plan view of a portion of a second link upon which the short link shown in Fig. 4 has movement. Fig. 6 is a detail sectional view of the locking mechanism of the device and the lever by means of which it is manipulated; and Fig. 7 is a plan view of the lever and locking device shown in Fig. 6.

Each shutter A, is adapted to be operated by one of the devices to be hereinafter described, and the devices are attached to the sill section of the window frame B, a pocket C, being introduced in the end of the sill to

receive a portion of the device. Ordinarily the outer end of the pocket C, is closed by a base plate 10, and within the pocket a second plate 11, is located, parallel with the base plate, but the inner plate need not necessarily be large as it is simply intended to constitute an inner bearing for a sleeve 12, which sleeve is likewise journaled in the base plate 10 near the center thereof. The sleeve is provided with a bore polygonal in cross section, as the sleeve receives a spindle 13 of a shape in cross section corresponding to the bore of the sleeve. The spindle 13, passes through a suitable opening in the inner end of the pocket C, the spindle being capable of turning in that opening; and a wear plate 14, is secured to the inner face of the window sill opposite the inner end of the pocket; and in an aperture in this plate the inner end of a standard 15, is mounted to revolve, the standard receiving within it the outer end of the spindle 13, and the two parts are firmly locked together in any suitable or approved manner.

A spring-pressed lever 16, is fulcrumed upon the outer end of the standard, the standard being preferably provided with shoulders 17 upon opposite sides to limit the downward movement of the lever. The lever is utilized to revolve the standard and consequently the spindle 13 and sleeve 12; and the lever has pivoted to one of its ends a locking pin 18, which is adapted to enter any one of a series of apertures 19, produced in the wear plate, the locking pin at its free end being made to pass through an opening in the flange of the standard, so that the free end has guided movement. When the lever 16, is pressed downward the locking pin is carried out of engagement with the aperture 19 in which it may have been introduced, and the lever may then be turned to revolve the sleeve 12. When the lever is released the pin will automatically enter the most convenient aperture 19. The sleeve 12, between the inner plate 11 and the base or outer plate 10, is provided with a toothed wheel or gear 20, the wheel being firmly secured upon the sleeve. Preferably a bracket 21, is projected inwardly from the central portion of the plate 11, and upon this bracket one end of a short link 22, is pivoted, and this link has secured to it a segmental rack 23, as is best shown in Figs. 1

and 3, the teeth of which rack are engaged by the wheel 20. The short link 22, passes out from the pocket C, and extends beyond the outer face of the window sill, ample room being provided for the lateral movement of the link. In addition to the inner link 22 a second short link 24, is provided, adapted to be attached to the shutter, and two parallel bars 25 and 26, adapted to have sliding movement one over the other. The lower sliding bar 26 is pivotally attached at its outer end to a stud 27, or the equivalent thereof, formed upon the base or outer plate 10, ordinarily immediately over the bearings for the outer end of the sleeve 12, while the outer end of the upper bar 25, is pivotally connected with the outer end of the inner short link 22, and both the link 22 and the upper bar 25, have guided movement on the lower bar by passing the pivotal pin 28 through a slot 29, made in the lower bar near its outer end, as shown in Figs. 1 and 3. Thus while the link 22, when given lateral movement, imparts end movement to the upper bar 25, the upper bar will move parallel over and with the under bar, as the pivot pin 28, will compel both the upper and lower bars to move together. A spacing block 30, of any approved formation is attached to or made integral with the inner end of the lower bar 26, and upon this spacing block the inner end of the upper bar 25, rests, the spacing block serving to maintain both of the bars an equal distance apart. The inner end of the upper bar is provided with a longitudinal slot 31, through which a pivotal pin 32, passed through the inner end of the short shutter link, loosely passes, the pivot pin also passing through the inner end of the lower bar 26, as shown in Fig. 2. Near the outer end of the slot 31 a block 33, is secured upon or made integral with the upper surface of the upper bar 25, the block 33 being best shown in Fig. 5, and both side surfaces of this block are beveled, the outside surface a , having a much greater inclination than the inner side surface a' ; and upon the under face of the shutter link 24, two blocks 34 and 35, are located, while the space 36, between these blocks corresponds practically to the shape of the block 33 upon the upper bar, as the block upon the upper bar, is adapted, when the shutter is fully opened, to enter the space 36 in the shutter link. The space 36, however, is made wider than the widest portion of the block 33 in order that the latter may readily leave the former; but the inclined face a of the block 33, corresponds to the incline a^3 of the inner end of the space 36, and these two surfaces a and a^3 , are adapted to be brought together when the link 24, is parallel with the bars 25 and 26.

The attachment between the link 24 and the shutter is usually effected through the medium of a bracket 37, having pivotal connection with the link, the bracket being secured in any approved manner to the outer

lower surface of the shutter preferably near its rabbeted or inner edge.

It will be observed that the shutter worker is composed of but two parts, and that said parts are simple in construction, durable, and so connected that they are not liable to get out of order. It is also obvious that the device may be readily attached, as has heretofore been stated, to any window, and may be operated successfully in connection with any blind carried by the window frame.

The operation of the device is as follows: The shutter being closed, as shown in Fig. 3, it is locked in that position by the locking pin 18 entering a properly-located aperture in the wear plate 14. To open the shutter, or place it fully back, the lever 16, is pressed in direction of the window sill, whereby the locking pin is carried out of engagement with the wear plate; the lever is then carried round to revolve the spindle 13, the spindle in its turn revolves the toothed wheel 20, and the wheel imparts movement to the rack 23, the rack communicating lateral movement to the link 22 with which it is connected, and that link acting upon two bars 25 and 26, will force the bars to turn together outward in direction of the side of the house, carrying the shutter with them; and when the two bars have been carried to a position parallel with the side of the house the shutter will be taken to its fully open position, as shown in Fig. 2, and the bars 25 and 26 will yet be parallel with each other and the shutter link 24, parallel with the bars. At that time the locking pin 18, will have entered an aperture in the wear plate 14, thereby preventing the spindle 13 from turning, and securing the blind in its open position, from which it can not be dislodged from the outside of the dwelling. To close the blind the lever is manipulated in a direction opposite to that in which it was formerly carried, and by so doing the link 22, will be drawn inward; consequently the upper bar 25 with which it is directly connected, will be moved endwise upon the lower bar, and both bars will be carried outward at an angle to the dwelling, and as the upper bar is slid along the lower one the inclined surface a of the upper bar being in engagement with the inclined surface a^3 on the shutter link, that end of the shutter link connected with the shutter will be forced outward from over the bar 25, and a continued movement of the link 22 will carry the shutter to the closed position shown in Fig. 3.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a shutter worker, the combination, with a spindle, mechanism for turning the spindle, a rack operated from the spindle, and a link pivoted at one end to a fixed support and connected with the rack, of two bars arranged parallel one above the other, the lower bar being pivoted to the fixed support and the

upper bar to the link, one bar having sliding movement upon the other, and a shutter link pivotally connected with the lower bar, the upper bar having sliding movement upon the pivot of the shutter link, and inclined planes produced upon the upper surface of the upper parallel bar and the under surface of the shutter link, substantially as and for the purpose set forth.

2. In a shutter worker, the combination, with a spindle, a device for revolving the spindle, a pinion actuated by the spindle, a rack actuated from the pinion, and a link pivoted at one end to a fixed support and connected with the rack, of bars located one above the other, the two bars being connected and one having sliding movement upon the other, the lower bar being pivoted to a fixed support, a link adapted for engagement with a shutter and pivoted to the lower bar, the pivotal pin passing through a slot in the upper bar, and cam locking surfaces produced upon the upper bar and shutter link, which surfaces are in engagement when the shutter link is parallel with the bars, and a pivot pin connecting the rack link with the upper bar, said pin

having sliding movement in the lower of the parallel bars, as and for the purpose set forth.

3. In a shutter worker, the combination, with a spindle, a lever carried by the spindle, a locking pin carried by the lever and adapted to enter a fixed keeper, a pinion secured to the spindle, a link pivoted upon a fixed support, and a segmental rack the teeth of which engage with the pinion, the rack being secured to the link, of parallel bars having movement one upon the other, the lower bar being pivoted to a fixed support and provided with a slot near its pivotal end, the upper bar having a slot in its upper end, a pivot pin connecting the upper bar with the link and passing down through the slot in the lower bar, a shutter link pivoted to the lower bar, a pivot pin passing through the slot in the upper bar, and bosses formed upon the opposing faces of the upper bar and shutter link, the engaging faces of the bosses being shaped as inclined planes, as and for the purpose set forth.

LOUIS KUTSCHER.

Witnesses:

PAUL R. VOGELGESANG,

JAMES ROCHE.