No. 609,197. Patented Aug. 16, 1898.

J. FRIES.

WINDOW SCREEN FASTENER.

(Application filed Mar. 25, 1898.)

(No Model.)

Fig - 1 -

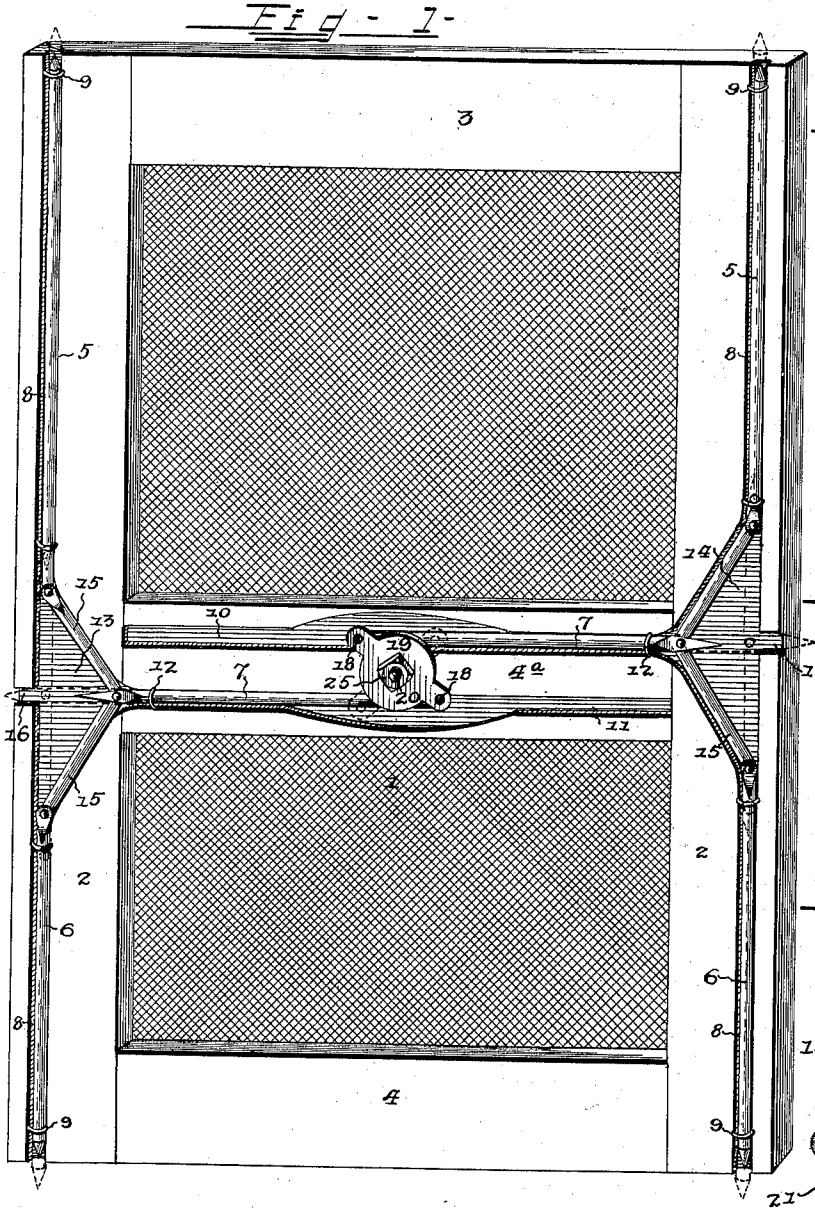


Fig - 2 -

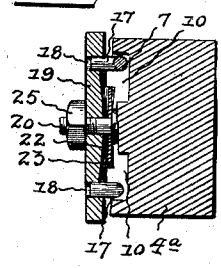


Fig - 3 -

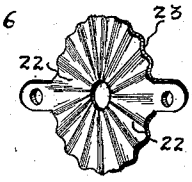
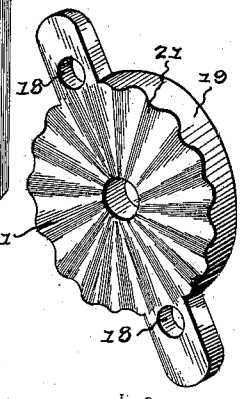


Fig - 4 -



Witnesses:
O. J. Young
T. J. Riley

Joseph Fries, Inventor.
By his Attorneys,
C. A. Snow & Co.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOSEPH FRIES, OF MARION, INDIANA.

WINDOW-SCREEN FASTENER.

SPECIFICATION forming part of Letters Patent No. 609,197, dated August 16, 1898.

Application filed March 25, 1898. Serial No. 675,134. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH FRIES, a citizen of the United States, residing at Marion, in the county of Grant and State of Indiana, have invented a new and useful Window-Screen Fastener, of which the following is a specification.

The invention relates to improvements in window-screen fasteners.

The object of the present invention is to provide a simple, inexpensive, and efficient device adapted to be readily applied to window-screens and capable of securely fastening the same within a window without interfering with the sashes thereof or with the window-shutters.

A further object of the invention is to provide a fastening device which will detachably secure a window-screen in a window-frame and enable the former to be readily removed and replaced when desired.

The invention consists in the construction and novel combination and arrangement of parts, as hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a screen provided with a fastener constructed in accordance with this invention, the locking-rods being shown extended in dotted lines. Fig. 2 is a detail sectional view illustrating the construction of the operating device for reciprocating the rods. Fig. 3 is a detail perspective view of the grooved ratchet-plate. Fig. 4 is a similar view of the pivoted operating-piece.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a screen designed to fit snugly within a window-frame and extend from the top to the bottom thereof, and consisting of side pieces or bars 2, upper and lower bars or stiles 3 and 4, and a central connecting bar or stile 4^a. The screen is designed to be located outside the sashes in order not to interfere with the raising and lowering of the same, and it is located between the said sashes and the abutting strips of the shutters, so as not to interfere with the same.

The locking device comprises upper and lower reciprocating rods 5 and 6 and horizontal rods 7. The upper and lower rods 5 and 6, which are arranged vertical, are disposed in longitudinal grooves 8 of the side bars 2 and are supported by eyes or staples 9, located near the upper and lower ends of the rods.

The horizontal rods 7, which are disposed in parallel planes adjacent to the upper and lower edges of the central cross-bar of the frame, are arranged in upper and lower horizontal grooves 10 and 11 and are supported by eyes or staples 12, located at the outer ends of the grooves.

The terminals of the reciprocating locking-rods, which are adapted to project beyond the edges of the screen, at the top, bottom, and sides thereof, are pointed and are adapted to embed themselves in the window-frame, whereby the screen is securely locked therein.

The side bars of the screen-frame are provided adjacent to the ends of the central cross-bar with substantially triangular recesses 13 and 14, receiving upper and lower connecting-bars 15, which are pivoted at their outer terminals to the inner ends of the vertically-reciprocating locking-rods and at their inner terminals to the horizontal rods 7, at points near the outer ends thereof. The recesses 13 and 14 have their centers located opposite their companion grooves 10 and 11, and as the rods 7 are located at different elevations the recesses are correspondingly situated.

The connecting-rods 15, which converge inwardly when the locking-rods are out of engagement with the window-frame, form toggle connections between the vertical rods, and when the horizontal rods are reciprocated and moved outward the toggle connections straighten and the vertical rods are simultaneously extended. The connecting-rods when the locking-rods are in engagement with the window-frame are disposed vertically and form straight braces which resist any inward movement of the vertical rods. The screen is provided at its side edges adjacent to the centers of the recesses 13 and 14 with notches or recesses 16, through which the horizontal locking-rods project.

The inner ends of the horizontal locking-rods are bent at right angles to form pivots 17, which are arranged in perforations of arms 18 of a pivoted operating-piece 19, pref-

erably consisting of a disk centrally pivoted on a screw 20. The inner face of the operating-piece is provided with radial grooves, forming correspondingly-disposed ribs 21, which are adapted to interlock with grooves 22 of a ratchet-disk 23, which is bent to form the grooves and which possesses a slight amount of resiliency. The locking-piece is retained on the screw by a nut 25, and the head of the screw is arranged at the inner face of the ratchet plate or disk, the latter being provided with a perforation for the passage of the stem or body portion of the screw; but any other suitable means may be employed for mounting the pivot of the operating-piece 19 on the screen. The horizontal rods are connected with the operating-piece at opposite sides of the pivot, and when the said operating-piece is oscillated or partially rotated the horizontal rods will be simultaneously reciprocated in opposite directions. The horizontal grooves 10 and 11 of the central cross-piece of the screen-frame are slightly enlarged at the center to allow for the lateral movement of the horizontal rod, and the locking action of the operating-piece on the ratchet disk or plate is sufficient to prevent the horizontal rods from moving inward accidentally.

The invention has the following advantages: The fastening device, which is simple and comparatively inexpensive in construction, is adapted to be readily applied to a window-screen, and it is capable of enabling the same to be securely fastened in a window-frame and to be readily removed when desired. As the screen is designed to extend from the top to the bottom of the window-frame and to be located between the sashes and the stops for the blinds it will protect the former and not interfere with the raising or lowering of the same and afford any desired amount of ventilation. The connecting-rods, which extend from the horizontal rods to the vertical ones, form toggle connections between the latter and operate as braces or props to resist any inward movement of the vertical rods.

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 of this invention.

What I claim is—

1. The combination with a frame, of longitudinal reciprocating rods arranged in pairs and spaced apart at their inner terminals, transverse reciprocating rods located at right angles to the longitudinal rods, the pivoted connecting-rods arranged in pairs and extending from each horizontal rod to the inner ends of the adjacent longitudinal rods and forming a toggle connection between the latter, and means for operating the transverse rods, substantially as described.

2. In a device of the class described, the combination of reciprocating locking-rods 5 and 6 spaced apart at their inner ends, a reciprocating locking-rod 7 arranged at right angles to the rods 5 and 6 at a point between the same, and the connecting-rods 15 extending from the inner ends of the rods 5 and 6 to the rod 7 at a point adjacent to the engaging end of the latter, said connecting-rods 15 forming a toggle connection between the rods 5 and 6, and providing a straight brace or connection between the same when the parts are locked, substantially as described.

3. The combination with a frame, of vertical upper and lower locking-rods guided on the frame and spaced apart at their inner terminals, horizontal locking-rods mounted on the frame opposite the spaces between the vertical rods and located at different elevations, the connecting-rods 15 extending from the inner ends of the vertical rods to the horizontal rods and forming toggle connections between the former, and a pivoted locking-piece mounted on the frame and connected with the horizontal locking-rods at points at opposite sides of the pivot, substantially as described.

4. The combination with a screen-frame provided with vertical and horizontal grooves, of upper and lower vertical rods arranged in the vertical grooves of the frame of the screen, horizontal rods guided in the horizontal grooves of said frame, connections between the horizontal and vertical rods, and a centrally-pivoted locking-piece connected at opposite sides of the pivot with the horizontal rods, substantially as described.

5. The combination with a frame, of upper and lower locking-rods arranged vertically, horizontal locking-rods, located at different elevations and connected with the vertical rods and adapted to reciprocate the same, a ratchet-plate mounted on the frame between the horizontal rods and provided with grooves, and an operating-piece pivoted to the frame and connected with the horizontal rods, said operating-piece being provided at its inner face with ribs interlocking with the ratchet-plate, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOSEPH FRIES.

Witnesses:
L. H. ESHLEMAN,
WILLIAM THORN.