No. 617,186. Patented Jan. 3, 1899.

M. RILEY.

WINDOW.

(Application filed Feb. 19, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

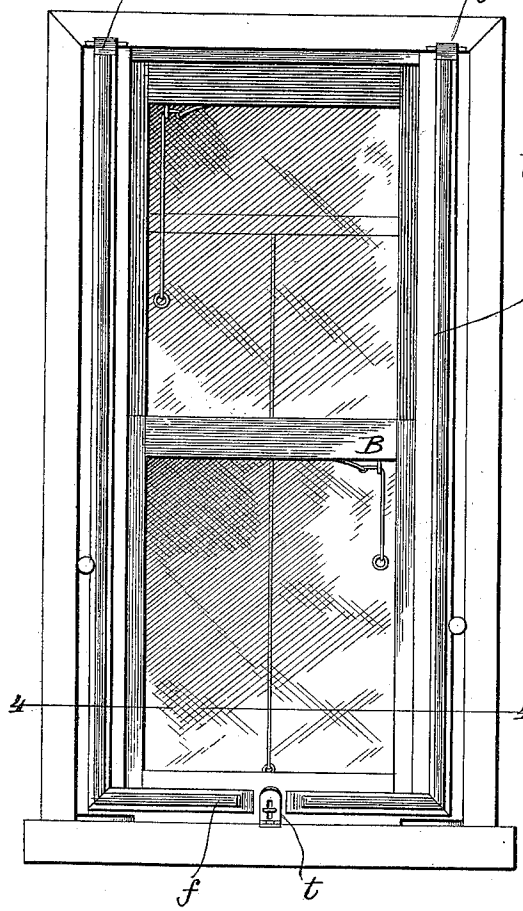


Fig. 2.

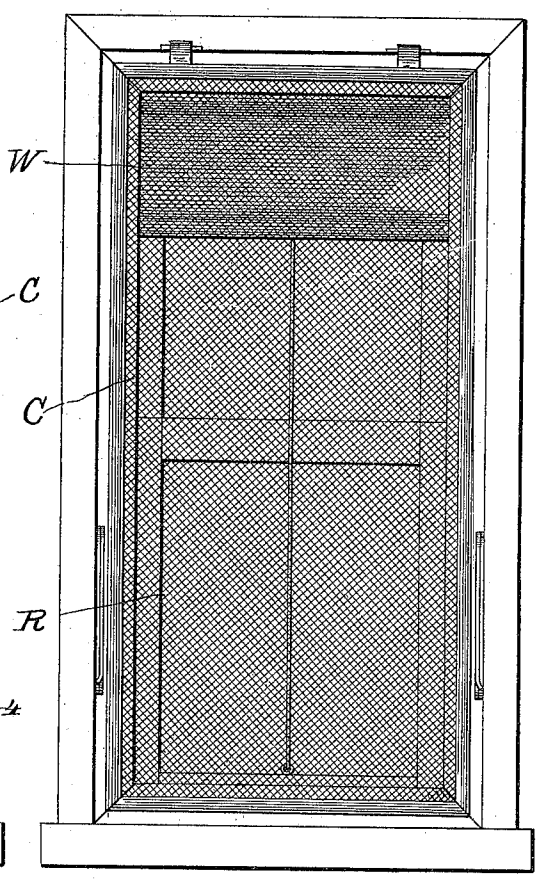


Fig. 3.

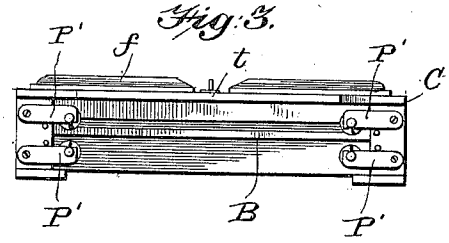


Fig. 4.

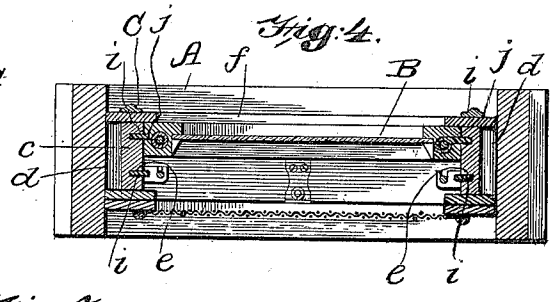
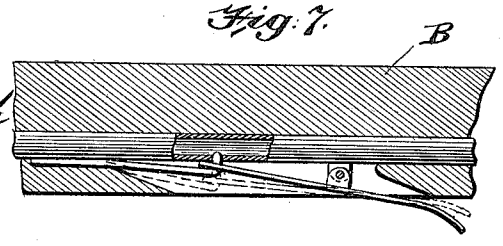


Fig. 7.



WITNESSES:

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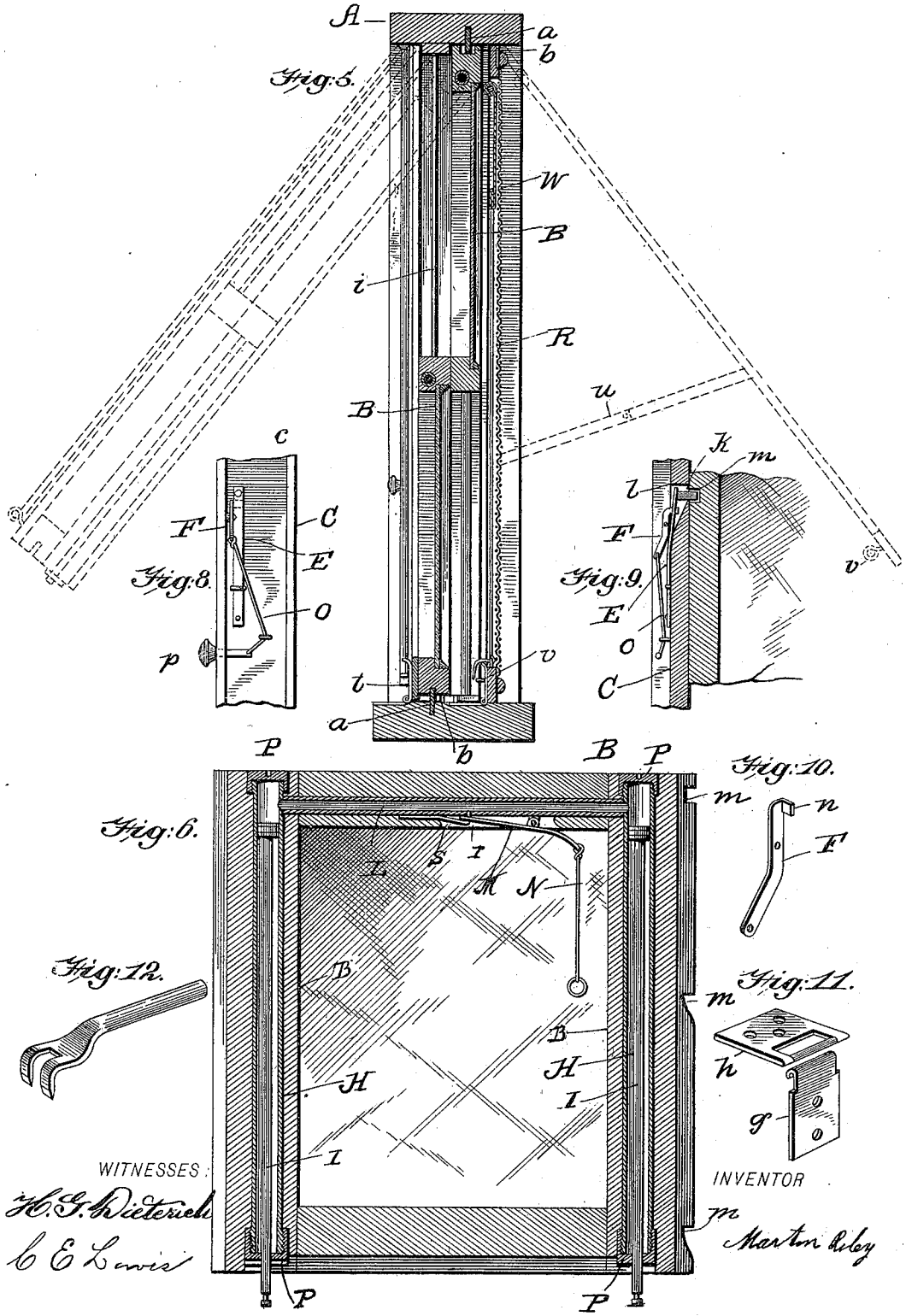
No. 617,186. Patented Jan. 3, 1899.

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WINDOW.

(Application filed Feb. 19, 1898.)

(No Model.) 2 Sheets—Sheet 2.



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

UNITED STATES PATENT OFFICE.

MARTIN RILEY, OF WASHINGTON, DISTRICT OF COLUMBIA.

WINDOW.

SPECIFICATION forming part of Letters Patent No. 617,186, dated January 3, 1899.

Application filed February 19, 1898. Serial No. 670,986. (No model.)

To all whom it may concern:

Be it known that I, MARTIN RILEY, a resident of Washington, in the District of Columbia, have invented certain new and useful Improvements in Windows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

This invention relates to windows and window-frames; and it has for its object to provide a simple, durable, and comparatively inexpensive window-frame adapted to be easily removed from its casing when desired and to provide means for counterbalancing the sash independent of the use of weights; and it consists of the parts and combinations of parts hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is an inside front elevation of the window with my invention in place; Fig. 2, a similar elevation from the outside; Fig. 3, a bottom end view of the window-frame removed from the casing; Fig. 4, a cross-section on the line 4 4, Fig. 1; Fig. 5, a vertical longitudinal section through the window-casing; Fig. 6, is a vertical section through the upper half of the window-frame; Fig. 7, a detail view, partly in section, of the escapement tube and valve; Fig. 8 a, detail front elevation of the sash-locking device; Fig. 9, a detail side elevation of the sash-locking device; Fig. 10, a detail perspective of the lever for operating the lock-bolt; Fig. 11, a detail perspective of the hinge for hanging the window-frame in the casing, and Fig. 12 a perspective view of a tool for removing the caps from the cylinders.

Similar letters refer to similar parts throughout all the views.

Referring to the drawings, A represents the window-casing, which may be of ordinary construction and is provided with the projecting cross plates or strips *a* at about the center of the top and bottom bars, which are adapted to enter grooves *b* in the sashes B to prevent the entrance of dust. Within the casing A is hung the window-frame C, which consists of the side bars *c*, having a longitudinal groove *d* therein at the outer side and a similar groove *e* at the inner side, the said bars *c* being connected by a front cross-bar *f* at their bottom ends. To the upper end of the frame C are secured the hook-plates *g* of the hinge, the bar-plates *h* of said hinges being secured to the top bar of the window-casing A, whereby the frame C may swing out on said hinges or is unhooked and bodily removed from the casing.

In the inner grooves *e* of the frame C are secured the parallel metal bars *i*, which extend from the bottom to top of said grooves and which fit within grooves *j* formed in the sash B, so as to serve as a guide therefor. In the outer groove *d* is arranged the locking device for the sash, which consists of a flat spring E, having one end secured to the frame C and the other or free end provided or formed with a bolt *k*, which extends through an opening *l* in the frame C in position to engage a notch or notches *m* formed in the edges of the sash in order to lock the sash in any position to which it may be adjusted. The spring E is moved so as to disengage it from the sash by means of a bent lever F, Fig. 10, having a right-angled projection *n* at one end which engages said spring, said lever being pivoted to the frame C and connected by a wire *o*, passing through a screw-eye in the frame to a push-button *p*, whereby upon pulling said button outwardly said lever will operate to draw the free end of the spring away from the sash and thus release the same, and upon releasing the button the spring will fly back, carrying the bolt into position to engage the notch.

The sash-frames B are provided at each side with a cylinder H, into which a rod I, having an enlarged head forming a piston, extends. The cylinders are provided at each end with screw-caps P, having a nick or groove in their heads, into which a screw-driver may be inserted in order to remove the same, the upper cap being easily removed by an ordinary screw-driver; but the lower cap, owing to the fact that the piston-rod extends therethrough, requires a peculiarly-constructed tool, such as shown in Fig. 12, consisting of a bar or handle having a flat, bent, and slotted end adapted to receive the piston-rod in the slot and to engage the notch in the cap to remove it. At their upper ends the cylinders H are connected in each sash by a tube L, extending through the top rail of the sash, in which tube an opening is formed to receive the plug or

valve *r*, carried on the end of a spring *s*, secured in the upper bar of the sash. This spring is depressed so as to withdraw the plug or valve from the opening by means of a lever M, fulcrumed to the sash and having one end engaging the spring, the other end of said lever being connected to the end of a cord N, which passes therefrom through a screw-eye in the sash, so that upon pulling said cord the free end of the lever will draw the spring down and the plug out of the opening in the tube, thus permitting the air to escape and the sash to be lowered. The cord is only necessary in connection with the top sash, as the lever on the lower sash may be easily reached and operated by the hand. The piston-rods I are held rigidly by means of the plates P′, pivotally secured to the ends of the frame C, said plates being notched to engage grooves formed in the lower ends of the rods to hold them in position. The frame C is held in place in the window-casing by a hasp-hinge *t*, secured to the sill of the casing and having a slotted leaf, through which a screw-eye secured to said frame C passes and which may be turned to fasten the parts together.

When it is desired to screen the window, it is easily accomplished by hinging a screen to the top of the casing outside, as shown in Figs. 2 and 5, the screen R being provided with bars *u*, (shown in dotted lines, Fig. 5,) which are pivoted to the casing and to the screen and also together at their meeting ends, said ends being slightly bent so as to interlock when fully extended in order to sustain the frame in an inclined position, as shown in Fig. 5; also, said screen may serve the purpose of an awning when in the position shown in Fig. 5 by arranging a curtain W, having a spring-roller of any desired or preferred style attached to the top cross-piece of the screen-frame and having cords running therefrom to and through screw-eyes *v*, secured to the bottom cross-pieces of the screen-frame. (See Fig. 5.)

In operation the lever M is operated to open the valve and the sash is raised, which action causes air to be sucked into the cylinders through the tube L. When the sash is raised the desired height, the lever is released, closing the valve, and thus confining the air in the cylinders, the pistons acting as a cushion or support for the sash to hold them in the position to which they are raised. To lower the sash, it is only necessary to open the valve and permit the air to escape from the cylinder through the tube L.

The sash may be locked in place by the locking device described, and said device also acts in case of emergency to support the sash when raised.

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

1. The combination, with a window-frame, of sash having air-cylinders at each side thereof, pistons for said cylinders having their rods secured to the window-frame and a suitable valve for said cylinders.

2. The combination, with a window-frame, of sash having air-cylinders at each side thereof, a tube communicating with said cylinders, a valve for said tube to control the admission and exit of air, and suitable pistons for said cylinders.

3. The combination with a window-frame, of sash having air-cylinders at each side, a tube connecting said cylinders, a valve for said tube, pistons for said cylinders, and a locking device for said sash.

4. A window, comprising a permanent casing, a swinging and detachable window-frame, sash for said frame having air-cylinders at each side, pistons for said cylinders having their rods secured to said frame, a tube provided with a valve connecting said cylinders, a locking device for said sash, and means for securing the frame in the casing.

I claim in my invention many new and original improvements, and in testimony whereof I have signed this specification in the presence of two subscribing witnesses.

MARTIN RILEY.

Witnesses:
ROBERT PELHAM, Jr.,
C. E. LEWIS.