(No Model.) 2 Sheets—Sheet 1.

E. E. DE KALB.

DEVICE FOR MOUNTING AND OPERATING SWINGING WINDOWS.

No. 441,943. Patented Dec. 2, 1890.

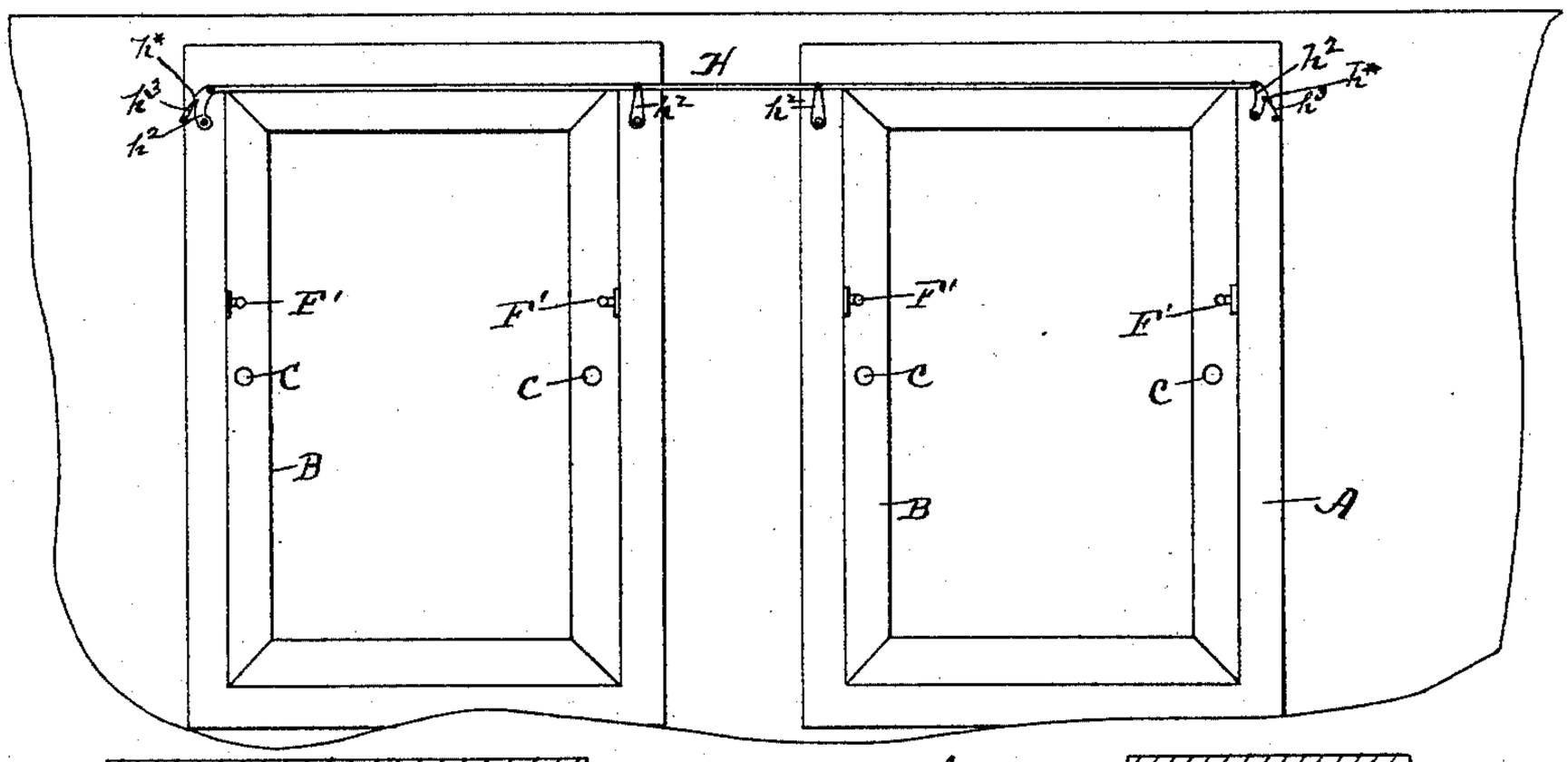

FIG. 1.

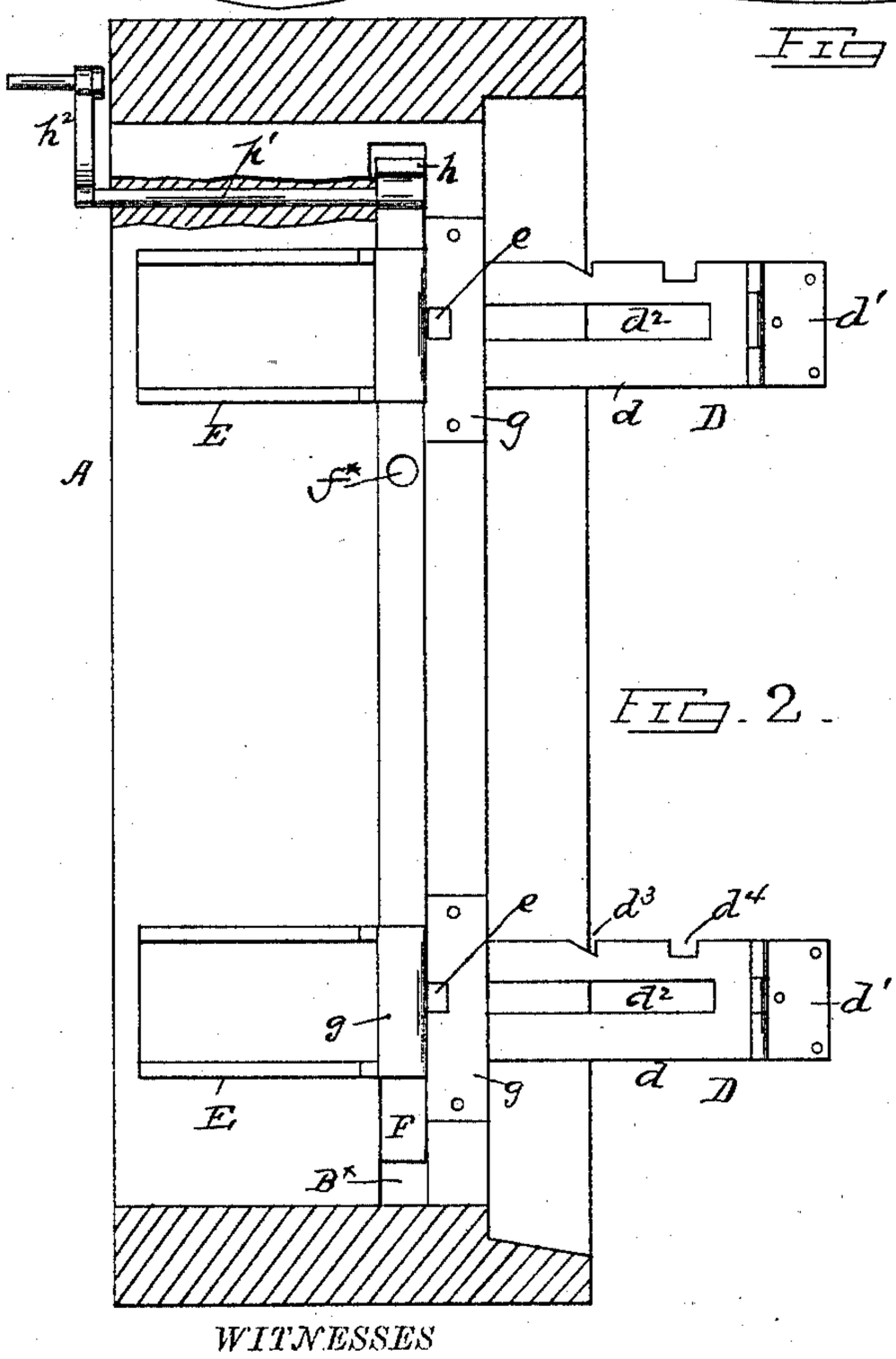

FIG. 2.

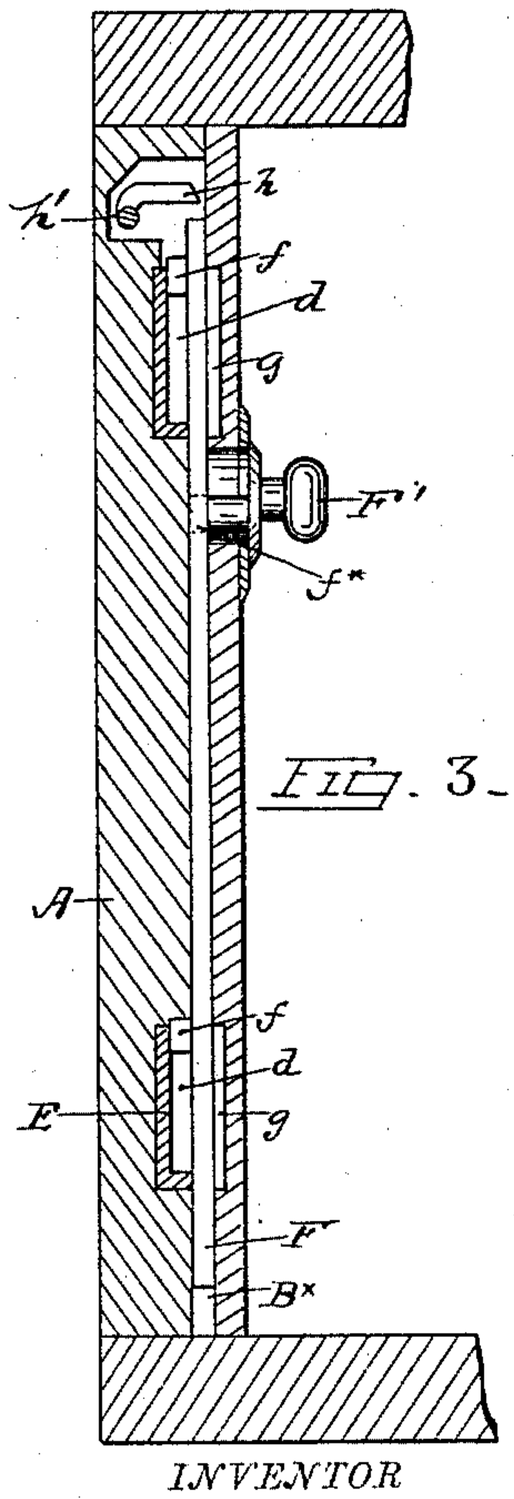

FIG. 3.

WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

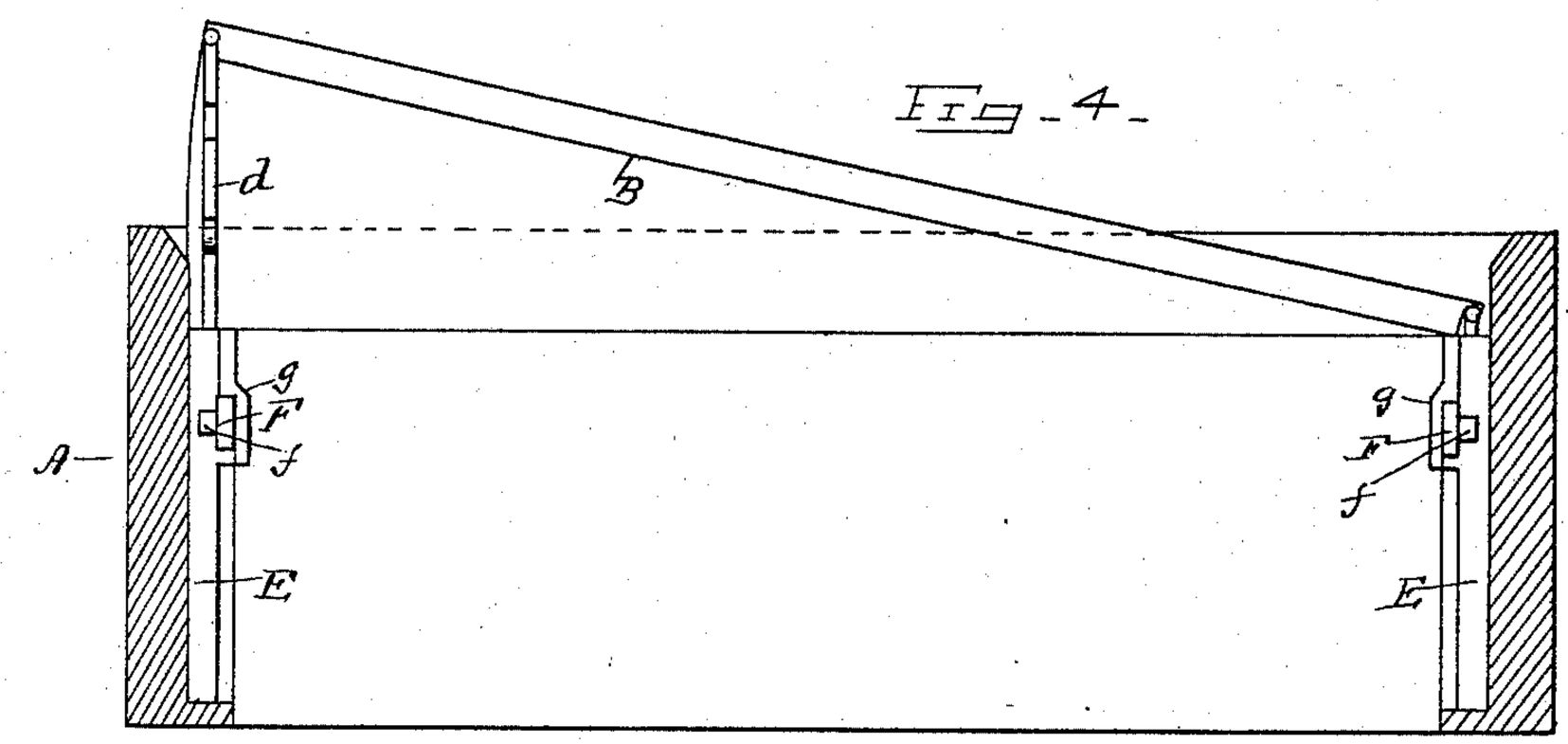


Fig. 7.

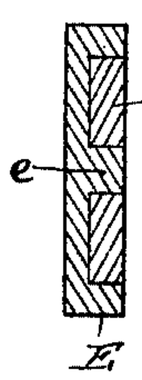


Fig. 8.

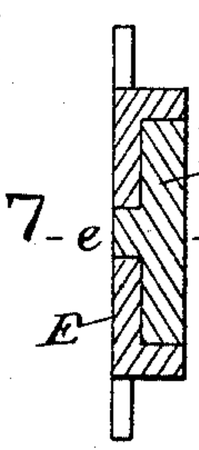


Fig. 9.

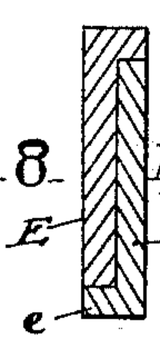


Fig. 10.

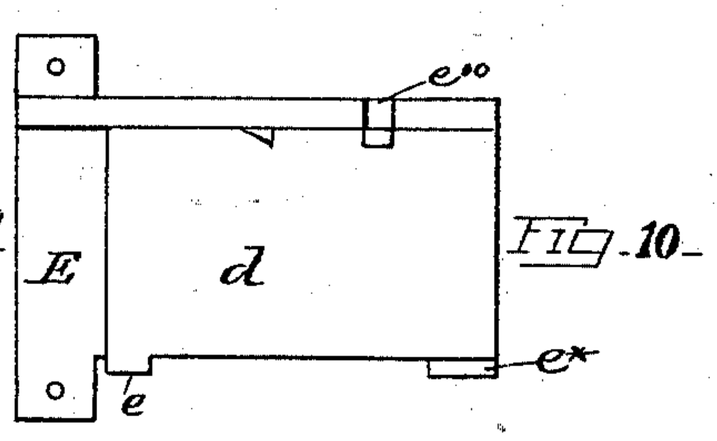


Fig. 6.

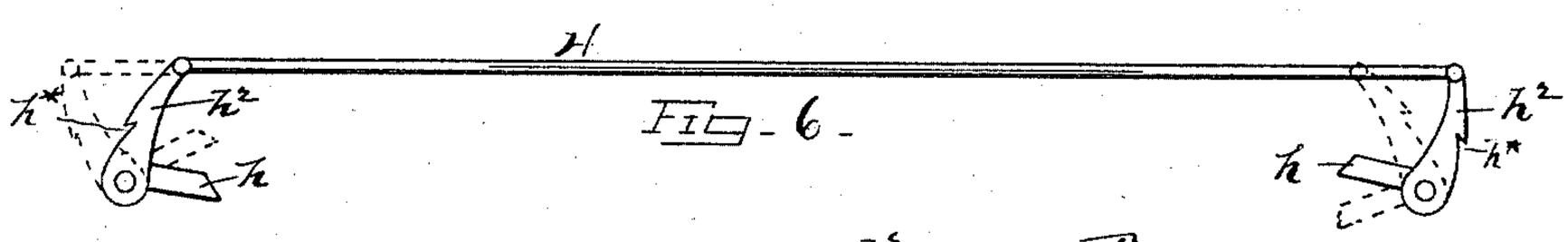
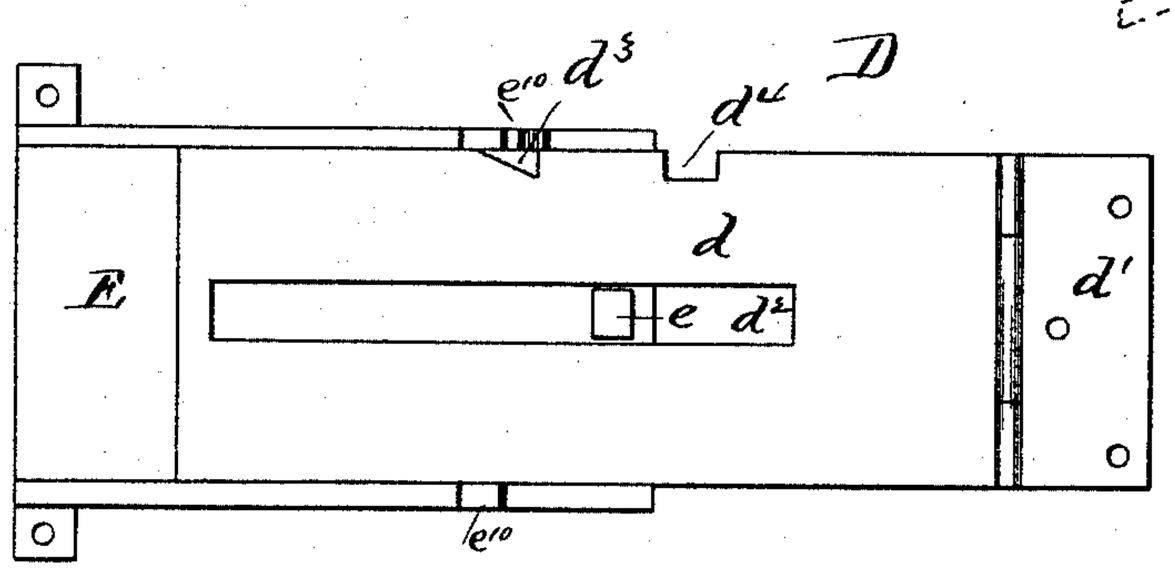


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

ENOCH E. DE KALB, OF SYRACUSE, NEW YORK.

DEVICE FOR MOUNTING AND OPERATING SWINGING WINDOWS.

SPECIFICATION forming part of Letters Patent No. 441,943, dated December 2, 1890.

Application filed March 24, 1890. Serial No. 345,087. (No model.)

To all whom it may concern:

Be it known that I, ENOCH E. DE KALB, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Devices for Mounting and Operating Swinging Windows; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in devices for mounting and operating swinging-windows and analogous parts, and has for its objects the provision of certain improvements in a combined hinge and holding device which I have denominated a "bracket slip-hinge," in means whereby such hinge is operated and controlled in a lock, whereby the window or windows can only be opened upon one side at a time.

The construction and combination of parts whereby the objects are attained is set forth in the following detailed specification and pointed out in the claims.

The accompanying drawings illustrate what I consider the best means for carrying my invention into practice.

Figure 1 is an elevation of a portion of the interior of a car, showing several windows provided with my devices. Fig. 2 is an elevation of one side of a window-frame, showing with the facing removed the hinges, &c., in place. Fig. 3 is a section of Fig. 2. Fig. 4 is a horizontal section taken above the upper hinges. Fig. 5 is an elevation of the hinge removed. Fig. 6 is an elevation of the locking device removed. Fig. 7 is a section across the hinge and case shown in Figs. 2, 3, 4, and 5. Fig. 8 is a section across a modified form of hinge and plate, and Figs. 9 and 10 are respectively a cross-section and a front elevation of another modification of the hinge.

Similar letters of reference indicate corresponding parts in all the figures where they occur.

A is the window-frame, and B the sash.

C C are knobs upon the sash, by means of which it is opened and closed after the hinge is properly fixed for the manipulation.

D D are the hinges, one leaf d' of which is of the ordinary or any suitable form, and has the sash fastened to it, while the other d is elongated and equipped to slide in a suitable casing E in the frame A.

The casing E is attached to the framing by means of screws or otherwise. In one form, as shown in Figs. 2, 3, 4, 5, and 7, the case is provided with a stop e, and the leaf d of the hinge is slotted as shown at d^2. In the form shown in Fig. 8 the stop e is upon the leaf d, and the slot d^2 in the casing E. While in the form shown in Figs. 9 and 10 the stop e is placed upon the side of the leaf d, and a suitable way is provided on the edge of casing for it to slide upon, and a stop e^* for it to abut against. In all the forms the stop e serves to limit the outward movement of the window.

In a vertical groove or depression B* a drop or holding bar F is arranged, which has projections $f\,f$ to engage the leaf d of the hinge, either in one of the notches d^3 or d^4 or at the inner end of the leaf. The bar is provided with a button F′ on the inner face of the frame A, which engages an opening f^* in said bar F, by means of which it is raised when desired to manipulate the sash. When the projections $f\,f$ engage the inner ends of the leaves d, the sash is held open as far as the hinges will permit it to go. When they engage notches d^3, the sash is partially opened and when engaging the notches d^4 the window is closed. It will be observed that notch d^3 is sloping on its inner edge, so that the window may be opened from this point outward without raising the rod, while it cannot be closed without raising the rod.

If the edges of case E interfere with the movements of the projections f, they may be cut out, as above shown at e^{10}.

The bar F, as well as leaves d, are held in position by face-plates $g\,g$, which have openings for receiving the outer ends of the stops $e\,e$ in the forms shown in Fig. 2.

Each side of the window-frame and sash is provided with the casings, rods, and hinges above described, and with the parts already described it is apparent that the sash can be

opened from either side or from both sides at the same time. Upon railway-trains it is, however, often the case that it is not desirable to permit passengers to manipulate the windows at the whim of each one, and in order to limit opening of the window to one side only so as to avoid drafts and the entrance of cinders, &c., I provide a lock for the sashes which shall be under control of the trainmen. This device is shown in Figs. 1, 2, 3, and 6, and consists of a crank or projection *h* arranged above each bar F. The crank is mounted on a shaft *h'*, which projects in from the inner face of the frame. The outer end of each shaft is provided with a second crank or fixed link h^2, the ends of which are connected to a rod H, which extends along the car above the windows, either covered by the inner facing of the car or exposed to view, as may be desired. At the ends of the car or at any point desired the cranks h^2 on rod H may be provided with ratchets *h** and a pawl h^3 for holding the rod fixed. Now it will be apparent that the movement of the rod H in one direction turns the crank *h* on one side of each window down upon the top of the bar F on that side and the window is locked, while upon the opposite side the crank *h* at each window is raised and the hinges are free to be operated. The window-frame and sash are made to fit beveling all around, and a packer may be introduced in the corners to seal the window and make it perfectly air and dust proof. The window is provided with protectors, as covered by my application for patent filed August 13, 1889, Serial No. 320,560, and the bevel on the bottom of the sash is confined to the outer edge thereof.

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

1. The combination of a slip-leaf hinge, a drop-bar for holding the same at a given point, and a lock for locking the bar in such position, as set forth.

2. The combination of a slip-leaf hinge and a drop-bar for holding the hinge in a given position, a cranked shaft for locking the bar, and a rod for controlling the cranked shaft, as set forth.

3. The combination, in a series of windows, of slip-leaf hinges on each side of the sashes thereof, drop-bars for holding the hinges at given positions, cranks and shafts on which they are mounted for locking the drop-bars, and a rod connected to the series of such shafts for locking the bars on the sides of the windows alternately, as set forth.

4. A hinge having one short and one long leaf, the latter sliding in the frame, a drop-bar operated to engage said long leaf, having a thumb-piece or button on the face of the frame, as described, a casing for the long leaf, and a facing-plate for the bar and leaf, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ENOCH E. DE KALB.

Witnesses:
HENRY LACY,
T. B. KENDRICK.