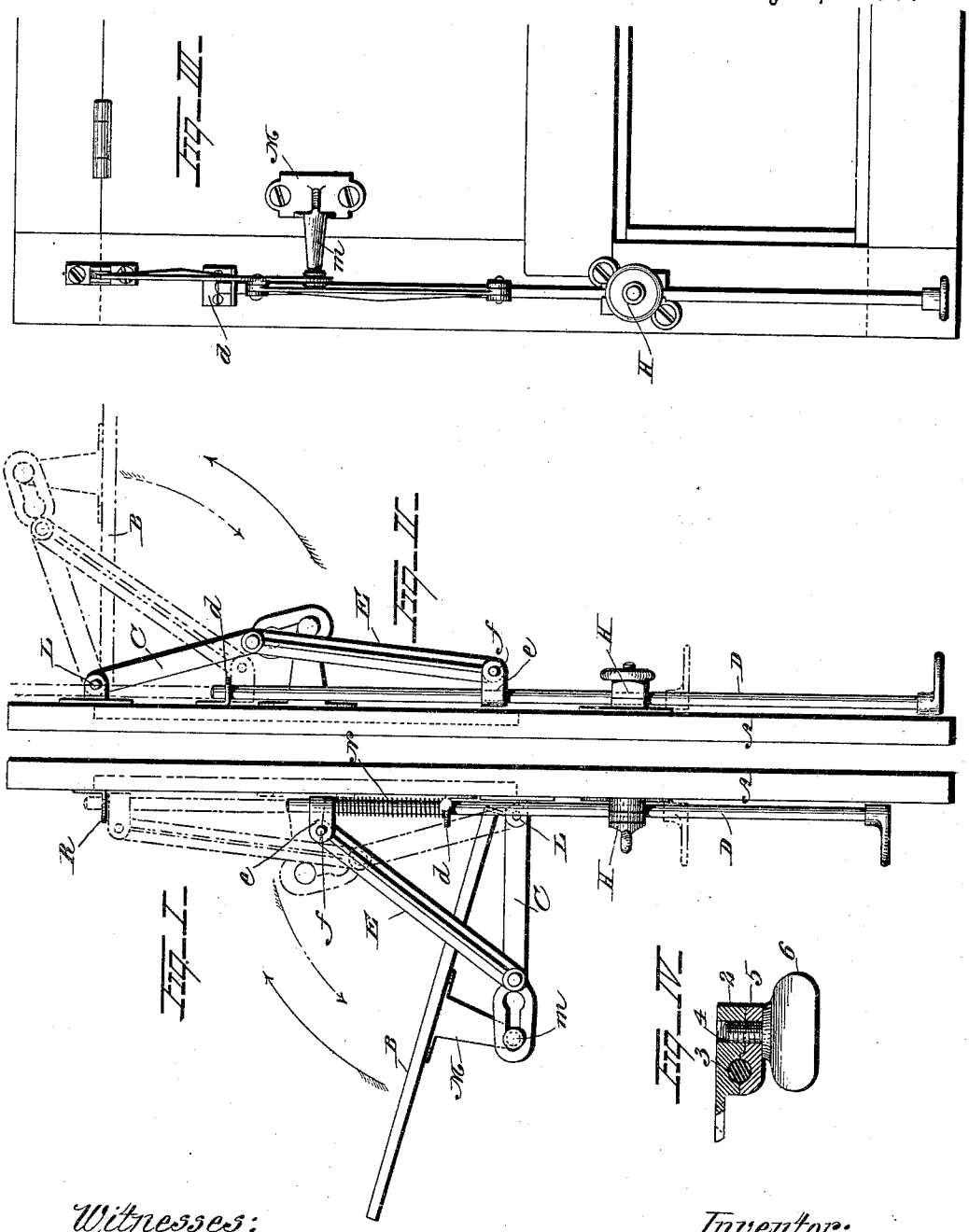
(No Model.)

R. R. BUEHLER.

TRANSOM LIFTER.

No. 431,963. Patented July 8, 1890.



Witnesses:
John Solan.
C. M. Beck.

Inventor:
Rudolph R. Buehler
by his Atty. H. D. Hulse

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

UNITED STATES PATENT OFFICE.

RUDOLPH R. BUEHLER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THOMAS DEVLIN, OF SAME PLACE.

TRANSOM-LIFTER.

SPECIFICATION forming part of Letters Patent No. 431,963, dated July 8, 1890.

Application filed June 6, 1889. Serial No. 313,258. (No model.)

To all whom it may concern:

Be it known that RUDOLPH R. BUEHLER, a citizen of the United States, residing in the city of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Transom-Lifters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to transom-lifters; and it consists of the mechanism hereinafter described, constructed on the principle of having the lifting-arm not connected directly with the operating-rod, but actuated indirectly therefrom by a connecting-arm pivoted at one end to the lifting-arm and at the other end to a bracket secured to the operating-rod, the said connecting-arm and the lifting-arm thus forming two jointed bars, the latter of which has its fulcrum in the same line with the hinges of the transom-sash and has a recessed extension-piece, in which recess the pin of the bracket attached to the transom is fitted and has loose lateral play.

My invention also consists in the several details of construction, which will be specifically described.

Referring to the drawings, in which similar letters and figures of reference relate to like parts in the several views, Figure 1 is a side view of the apparatus adapted to be fitted to a transom-sash hinged at the bottom. It shows the transom open, and shows, also, in dotted lines the position of the parts with the transom closed. Fig. 2 is a like view of the apparatus adapted to be fitted to a transom hinged at the top. It shows the transom closed, and shows, also, in dotted lines the position of the parts with the transom open. Fig. 3 is a front view of the apparatus affixed to a transom-sash and door-frame, and Fig. 4 is a horizontal sectional view of a form of locking device for the operating-rod.

The details of construction of the apparatus are as follows: To the door-frame A is connected the transom-sash B by hinges in the usual manner, so that it can swing either upward, as shown in Fig. 1, or downward, as shown in Fig. 2; and to carry out my invention these hinges must be on a line with the fulcrum of the slotted lifting-arm C. The operating-rod D is guided and held in position by the upper and lower recessed brackets *d*, secured to the frame of the window, and by the guiding and locking device H, secured to the door-frame and shown in detail in Figs. 4 and 5. A jointed connecting-arm E is pivoted at *f* to a short arm *e*, permanently secured to the operating-rod D, and the other end of the arm E is connected by a pivot-joint with the lifting-arm C, which in turn is connected by a pivot-joint with a straight bracket L, secured to the frame of the door. The end of the lifting-arm C is recessed to admit of slight play therein of the pin *m*. This construction determines definitely the position of the fulcrum of the arm C and allows for the slight inaccuracies in the construction of the parts and in setting them up, which are always liable to occur, and such variations as may occur by the wear of the parts or the shrinkage or settling of the wooden portions of the sash and frame. In all these cases, which would otherwise cause the parts to bind, the slotted construction permits of the free movement of the parts and allows for such slight irregularites.

In the form of my invention, shown in Fig. 1, in order to avoid a breaking of the transom-sash by a too-violent opening of the same, I provide a spring N, encircling the operating-rod D and resting upon the bracket *d*, so that a fall of the transom and a lowering of the operating-rod with its short arm *e* press down the spring upon the bracket *d*, and the resilience of the spring thus resists the tendency to a violent fall of the sash. When the parts are in position, it will be seen that the fulcrum L of the lifting-arm C in both Figs. 1 and 2 is and must necessarily be in this construction in a direct line with the hinges of the transom-sash; and it will be apparent, also, from an inspection of the apparatus that my device for either form of upper or lower transom can be applied indiscriminately to either the right or left hand side of the window-frame, which is a decided advantage in mechanism of this character. With respect to a drop-sash, such as shown in Fig. 1, it is desirable to provide a device for locking the transom-sash to the window-frame, which can

be done by securing to the window-frame a recessed bracket R, through which the end of the operating-rod D passes when, as shown in the dotted lines, it is fully lifted and the sash closed.

Finally, my invention consists in the guiding and locking device for holding the operating-rod D in position in its vertical movements and for securing it at any desired point therein. Referring first to the form shown in Fig. 4, which is a lateral cross-section of the device H of Fig. 1, the part 2 is constructed with an offset 4, adapted to fit a corresponding depression in the opposite part 5 of the device, and the said parts 2 and 5 are recessed semi-cylindrically at opposite points 3, so as to conform to the shape of the operating-rod D, which passes through them. The offset 4 of part 2, which fits into the depression of the corresponding part 5, serves the purpose to hold the parts in position when the thumb-screw 6, which passes through the screw-hole in these parts of the device, is loosened.

It will be seen from this description that the operating-rod D is well braced against the window-frame by means of the upper guiding-bracket *d* and the lower guiding and locking device H, and that the lifting-arm C is in such position that it has full and independent support from the window-frame, and will also allow the transom-sash to be opened fully.

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

1. The combination, with a transom-sash and window-frame, of an operating-rod with a fixed recessed guiding-bracket therefor, a lifting-arm pivoted to a bracket secured to the door-frame, having its fulcrum on a line with the hinges of the sash, a connecting-arm pivoted at both ends to the lifting-rod and to the lifting-arm, a bracket secured to the transom-sash and provided with a laterally-extending pin, said lifting-arm being recessed at its end to permit the lateral play therein of said bracket-pin, and a spring encircling the operating-rod between the recessed guiding-bracket and the point thereon at which the connecting-arm is pivoted, substantially as described.

2. In a transom-lifter, the combination, with the operating-rod, of a stationary locking device for the same, consisting of the clamping-plates, each provided with a recess to engage said rod, and a set-screw for forcing said plates together upon the rod, one of said plates adapted to be rigidly secured to a stationary part, substantially as described.

In testimony whereof I have hereunto affixed my signature this 31st day of May, A. D. 1889.

RUDOLPH R. BUEHLER.

Witnesses:
GEO. W. REED,
H. I. LAWTON.