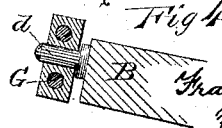
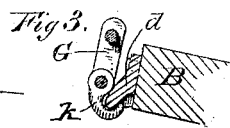
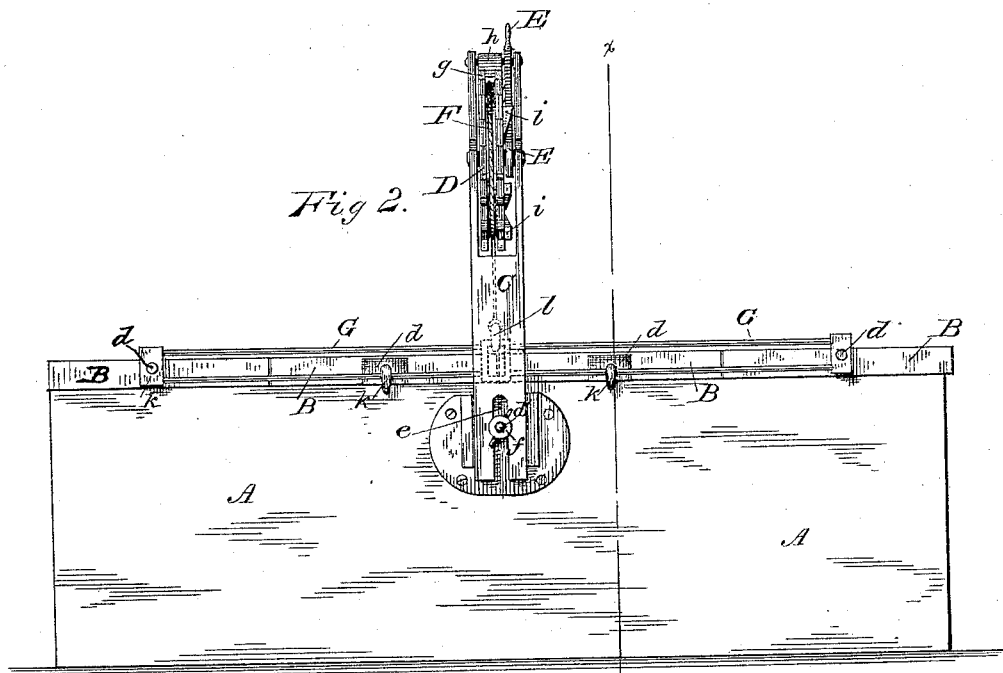
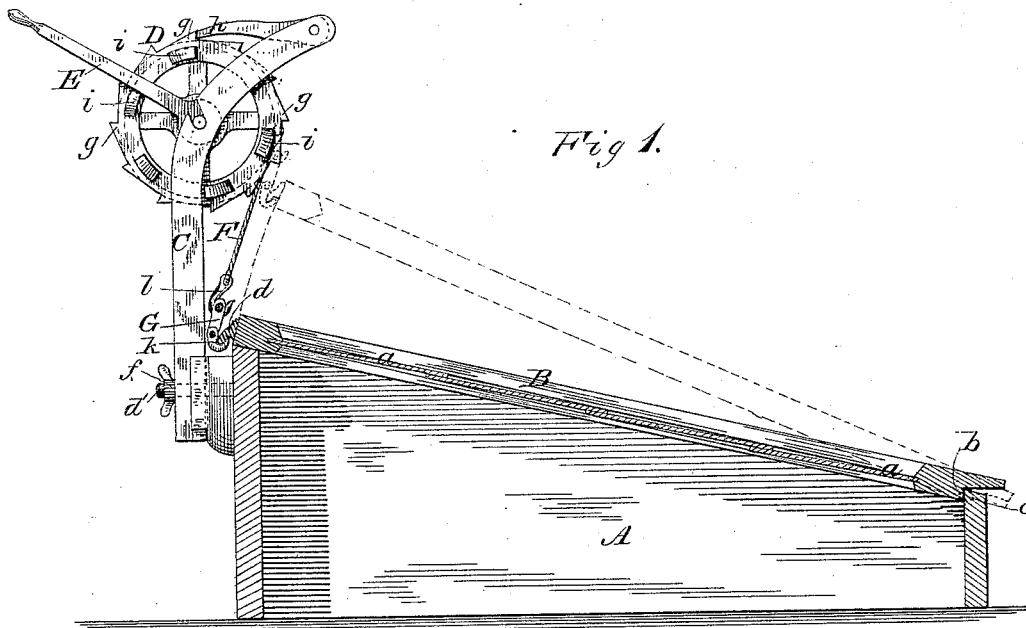


(No Model.)

F. A. LIPPERT.
TRANSOM LIFTER.

No. 419,964.

Patented Jan. 21, 1890.



WITNESSES
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FRANK. A. LIPPERT, OF MAZOMANIE, WISCONSIN.

TRANSOM-LIFTER.

SPECIFICATION forming part of Letters Patent No. 419,964, dated January 21, 1890.

Application filed January 15, 1889. Serial No. 296,415. (No model.)

To all whom it may concern:

Be it known that I, FRANK. A. LIPPERT, a citizen of the United States, residing at Mazomanie, in the county of Dane and State of Wisconsin, have invented certain new and useful Improvements in Hot-Bed-Sash Lifters; 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 appertains to make and use the same.

My invention relates to hot-house-sash lifters; and it consists in the construction, adaptation, and application to the hot-house or bed-body and movable sashes of a sash-lifting device, whereby any desired amount of ventilation may be readily supplied to the interior of said house or bed.

In the drawings, Figure 1 is a vertical transverse sectional view of my improved device cut through line *x x* of Fig. 2. Fig. 2 is a front elevation of the same device, and Figs. 3 and 4 are side views of modified forms of coupling mechanism connecting each sash with the lifting mechanism.

Superimposed and loosely resting upon the frame or body A are sashes B, provided in the usual way with glass *a*.

Upon the lower or rear end of each sash is constructed a shoulder *b*. This shoulder, when resting against or acting in conjunction with the upper edge *c* of rear portion of frame A, prevents the sash from slipping from its place when closed, permits the sash to be readily removed from the frame when desired, and operates as a hinge when the front portion of the sash is lifted for the purpose of affording ventilation to the interior of the house or bed.

On the upper or front edge of each sash is constructed a coupling pin or loop *d*.

A standard or bracket C is adjustably attached to the front face of the frame, and can be adjusted in a vertical plane by means of a screw-bolt *d'*, rigidly attached to the frame and passing through a slot *e*, cut into the lower end of the bracket, a thumb-screw *f* on the screw-bolt forming a clamp.

Detachably journaled to the upper end of the bracket is a windlass D, provided with ratchet-teeth *g*, into which rests a pawl *h*. Loosely encircling the windlass-shaft is an eye constructed on the rear end of lever E. This lever is adapted to engage, when pressed downwardly, with ratchet-shoulders

i, constructed at regular intervals on the side face of the windlass. Each ratchet-shoulder is beveled at its lower end in such a manner as to allow the lever to be freely returned for a fresh hold when operating the windlass. To this windlass is attached a cable F, provided at its lower or free end with a hook or similar device *l*. This hook engages with and operates an elongated frame G, provided at regular intervals throughout its length with couplers *k k*, located in such a manner as to co-operate each with a pin or loop constructed on the front end of each sash, as hereinbefore described. By a downward pressure on the windlass-lever the sashes are raised to any desired extent, and are automatically held open through the instrumentality of the windlass, ratchets, and pawl. By releasing the pawl from the ratchets, and impeding the too-rapid unwinding of the windlass through a gently-releasing pressure on the lever, the sashes are allowed to safely resume their normal position.

It is obvious that with my improved sash coupling and lifting device alternate sashes may be opened, as desired, the uncoupled sashes remaining closed. It is also obvious that the sashes may be uncoupled and easily lifted from their seats on the frame.

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

1. In a hot house or bed provided with upwardly-opening sashes, the combination, with the lifting mechanism, as described, of the coupling mechanism consisting of an elongated frame provided at regular intervals with coupling loops or hooks, located to co-operate, respectively, with hooks or loops constructed on the front edges of the sashes, substantially as set forth.

2. In a hot house or bed provided with upwardly-opening sashes, the combination, with the coupling and lifting mechanism, as described, of a vertically-adjustable windlass-bracket provided with a screw-clamping device, as set forth.

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

FRANK. A. LIPPERT.

Witnesses:

JOHN B. RAYNOR,
D. N. SMITH.