

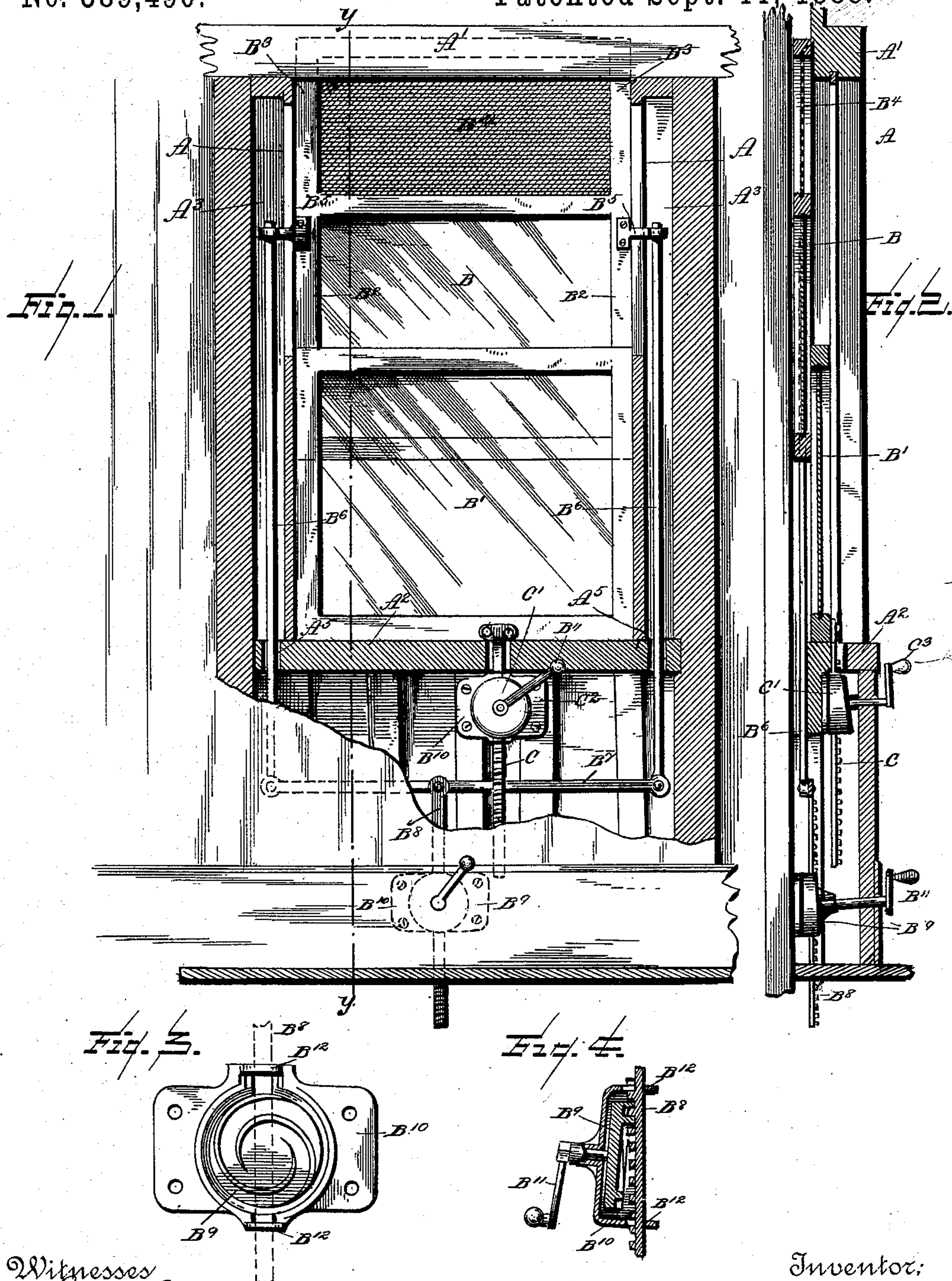
(No Model.)

J. B. ZETTLER.

WINDOW.

No. 389,490.

Patented Sept. 11, 1888.



Witnesses

L. C. Hills,
W. I. Dixey

Inventor:

J. B. Zettler
E. B. Stocking
Attorney

UNITED STATES PATENT OFFICE.

JOHN B. ZETTLER, OF CANTON, OHIO.

WINDOW.

SPECIFICATION forming part of Letters Patent No. 389,490, dated September 11, 1888.

Application filed March 7, 1888. Serial No. 266,464. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. ZETTLER, a citizen of the United States, residing at Canton, in the county of Stark, State of Ohio, have
5 invented certain new and useful Improvements in Windows, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has relation to windows, and
10 among the objects in view are to obviate the use of balances or weights, and to provide a simple and convenient means for raising and lowering the sashes thereof.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof be particularly pointed out in
15 the claims.

Referring to the drawings, Figure 1 is a front elevation of a window constructed in
20 accordance with my invention, the upper sash being partly lowered. Fig. 2 is a vertical section on the line *y y* of Fig. 1; and Figs. 3 and 4 are front elevation and sectional views, respectively, of a means for operating the rack-
25 bars.

Similar letters of reference indicate like parts in all the figures of the drawings.

A represents the sides of the window-casing, and *A'* *A*² the upper and lower sills, respectively. Between the usual vertical dividing-strips of the side casings, A, are mounted for sliding the upper and lower window-sashes, B B'. The side rails, B², of the upper sash, B, project beyond the upper transverse
35 rail of said sash and form a screen-frame, B³, covered with suitable material, as woven wire B⁴. Projecting from each side of the upper sash into the usual weight-receiving recess, A³, through vertical slots A⁴, formed in the
40 inner faces of the side sashes A, and intermediate the vertical dividing-strip, are lateral T-shaped arms B⁵, the T ends of which are secured to the sash-frames, and to their opposite ends are secured the upper ends of depending vertical rods B⁶, which extend down
45 through openings A⁵, formed in the lower sill below the same and into the wall, their lower ends being secured to a transverse rod, B⁷. Secured to the cross-bar B⁷, about midway its
50 length and depending therefrom, is a rack-bar, B⁸, and meshing therewith is a scroll-

gear, B⁹, journaled in a bracket, B¹⁰, the rack-bar passing through vertically-opposite openings B¹². Upon the shaft of the gear B⁹ is
55 mounted an operating-crank, B¹¹, which projects through the wall and within a convenient position for turning by the hand of the operator. By rotating the crank B¹¹, motion is imparted to the gear B⁹, which, through the
60 medium of the rack-bar B⁸, cross-bar B⁷, and vertical rods B⁶, raises and lowers the upper sash of the window. When the upper sash is lowered for ventilation, the screen B⁴ takes its
65 place and prevents the entrance of dust, insects, &c. It is also evident that the sash cannot be further lowered from the outside, but must
70 be operated through the medium of the crank B¹¹. When the sash is raised, the screen passes vertically through a vertical recess in the upper-sill, A', and into the wall.

The mechanism employed for raising and lowering the lower sash is similar to that described, and the same consists of a rack-bar, C, depending from the lower rail of the lower sash
75 through an opening formed in the lower sill, A². Meshing with the rack-bar is a similar scroll-gear, C', mounted in a bracket, C², and provided with an operating-crank, C³. The operation of raising and lowering this sash is
80 similar to that of the upper sash, and it, like its companion, cannot be raised or lowered from the outside, but must be operated by the means-employed. If desired, ordinary gears
85 may be substituted for the scroll-gears described; but these do not possess the advantages of the latter, as they do not form a lock against raising and lowering from the outside; and, in fact, unless the sashes are very light
90 their weight alone is sufficient to cause the gears to rotate, which, of course, is undesirable. Aside from this, less power is required to raise and lower the sashes through the medium of
scroll-gears than with the ordinary gears mentioned.

The scroll-gear is mounted slightly at an
95 angle, so that only one portion thereof is in operative connection with the rack-bar C, all as clearly shown in Fig. 4.

Having described my invention and its operation, what I claim is—

1. In a window, the combination, with a sash provided with laterally-projecting arms,
100

of depending rods projecting below the sill of the window and having their terminals connected by a cross-bar provided with a depending rack-bar, and of a gear provided with an
5 operating-handle and meshing with said rack-bar, substantially as specified.

2. The window-casing A, having the slotted recesses A³, and the perforated sill A², in combination with the sash B, having the T-arms
10 B⁵, depending rods B⁶, cross-bar B⁷, having

rack B⁸, and the scroll-gears B⁹, mounted in the brackets B¹⁰, and having the operating-handle B¹¹, substantially as specified.

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

JOHN B. ZETTLER.

Witnesses:

CHAS. C. BOW,
JOHN TOWNSEND.