

October 21, 1913.

DRAWING

5,108

A careful search has been made this day for the original drawing or a photolithographic copy of the same, for the purpose of reproducing the said drawing to form a part of this book, but at this time nothing can be found from which a reproduction can be made.

Finis D. Morris,

Chief of Division E.

AWK

UNITED STATES PATENT OFFICE.

EBENR. CATE, OF BOSTON, MASSACHUSETTS.

WINDOW-BLIND.

Specification of Letters Patent No. 5,108, dated May 8, 1847.

To all whom it may concern:

Be it known that I, EBENEZER CATE, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Folding Shutters or Blinds for Store-Fronts, Windows, &c.; and I do hereby declare, that the same is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

By my invention the folding shutter is not only made to answer the purpose of effectually closing the window and excluding light, thieves, etc., but may be used or opened to admit air or light, in a manner similar to that in which a Venetian blind is usually opened.

Of the aforementioned drawings Figure 1 represents a front view of my improved window shutter and the window frame to which it is adapted. Fig. 2 is a rear elevation of the same. Fig. 3 is a horizontal section. Fig. 4 is a vertical and central section representing the slats as closed down upon one another. Fig. 5 is a similar section exhibiting them as opened like those of a Venetian blind. Fig. 6 represents a front view of a few of the slats and portions of their two side chains or hinged plates. Fig. 7 is a rear view of the same. Fig. 8 is an end elevation of the same, exhibiting the slats as opened apart. Fig. 9 denotes a side elevation of the wooden frame and apparatus for raising and lowering the blind. Fig. 10 is a view of one of the slats as separate from its side chains.

In said figures A denotes the window frame; B, B, B, &c., the series of slats, made of thin strips of metal or other proper material. Each of said slats, has two journals *a, a*, projecting from its ends as seen in Fig. 10. Each of the said journals, passes into, and turns and is supported in a bearing *b* made upon the rear side of one of two square or other proper shaped plates of metal *c, c*, each of said plates *c* being of a width or length vertically equal to the width of its slats. The plates *c, c*, of each slat are respectively hinged or jointed to those of the two slats, immediately adjacent to it, or above and below it, as seen at *d, d*, &c. Each plate *c* may have a semicircular or other proper shaped projection *e*, affixed or made upon it, and so as to extend from, and at right angles to its rear side. The several

plates and slats, when combined together, are applied to the window frame—in such manner that the hinge plates, are inserted and travel freely up and down in grooves *f, f*, made in the window frame, as seen in section in Fig. 3. These are small vertical grooves *g g* made respectively at right angles to the grooves *f f* as seen in Fig. 3. The projections *e e*, &c., move in the said grooves *g, g*.

The several slats are connected together in their middle parts, or at other proper places, by hinged plates or links *h, h*, each of said plates or links being hinged at its top to or near the upper edge of one of the slats B, and at its bottom to the upper edge of the blind slat B, immediately below the one first mentioned, as seen in the drawings. The blind so made is suspended to a horizontal barrel or shaft D by chains *i k l*—the central chain *k* being jointed to a bent spring *m* which extends around, and is attached to the shaft D, as seen in Fig. 4. The said shaft rotates in bearings at E E and has a cogged wheel *n* fixed on one end of it. Into the said cogged wheel, a worm or screw *o* fixed upon a vertical shaft *p* works. The said shaft is rotated by two bevel gears *q, r*, and a crank shaft *s*, arranged together as seen in the drawings. On the lower slat B of the blind or any convenient one above it, I attach or fix or hinge a bent piece of metal *t*. By applying the hand thereto, and pressing the same downward, the different slats will be so acted on as to be made to turn in their bearings, and open like a Venetian blind, or take the positions as exhibited in Fig. 5. The same effect may be produced by confining the said bent stud or piece *t* down to the window sill by a bolt or any other proper contrivance, and at the same time putting the winding up mechanism in operation, so as to draw upon the blind. By relieving the blind of such forces the superincumbent weight of those parts of the several slats, which project beyond their axes of motion, will cause them to turn in their bearings, and close down upon one another as seen in Fig. 4. By inspection of Fig. 10 it will be seen that the journals of the slat therein delineated are not placed in a line passing longitudinally through the center of the slat, but are disposed, so that there may be more weight of slat, on one side of them, than on the other. When arranged in the side bearing plates, this extra weight

causes the slat to fall nearly into a vertical position or so as to lap over the slat below it. There may be other modes of causing the slats to close down upon one another. I intend to avail myself of any suitable to the purpose. The length of each of the several slats, should be somewhat or a little less, than the width of the opening of the window frame, as seen in the drawings—in order that they may turn freely in their bearings without obstruction. By turning the crank shaft *s* in a proper direction the whole blind may be gradually wound upon the windlass barrel or shaft *D*. By reversing the motion of the crank shaft, the blind may be unwound and lowered down.

What I claim as my invention is—

The two hinged chain bearing and guide plates, in combination with each slat of the blind, having journals as described, the said plates being conjoined and made to move in grooves in the window frame and applied to the slat, and operated in all respects substantially as specified.

In testimony whereof I have hereto set my signature this first day of February, A. D. 1847.

EBENEZER CATE.

Witnesses:

R. H. EDDY,
S. W. WALDRON, Jr.