E. Cate,

Window Blind.

No. 5,097. Patented May 1, 1847.

Fig. 4.

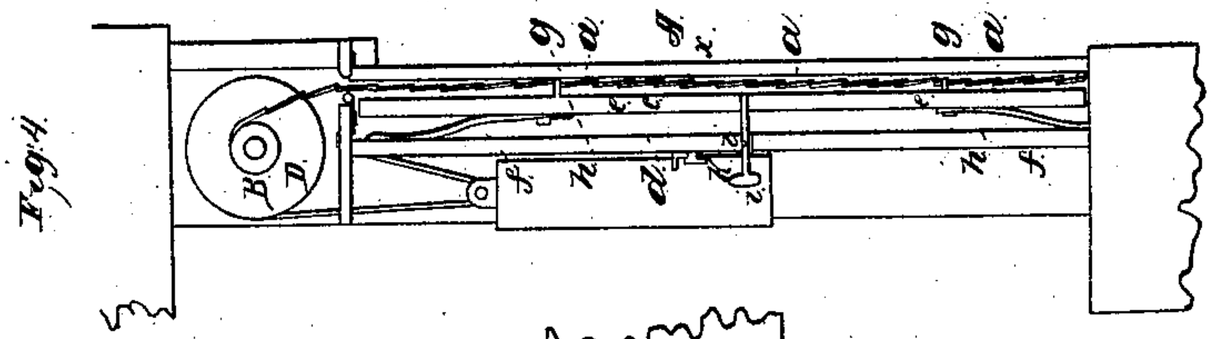


Fig. 3.

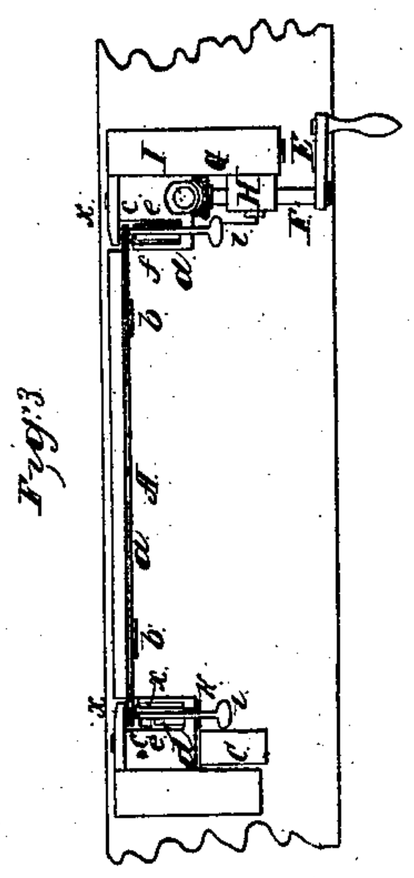


Fig. 2.

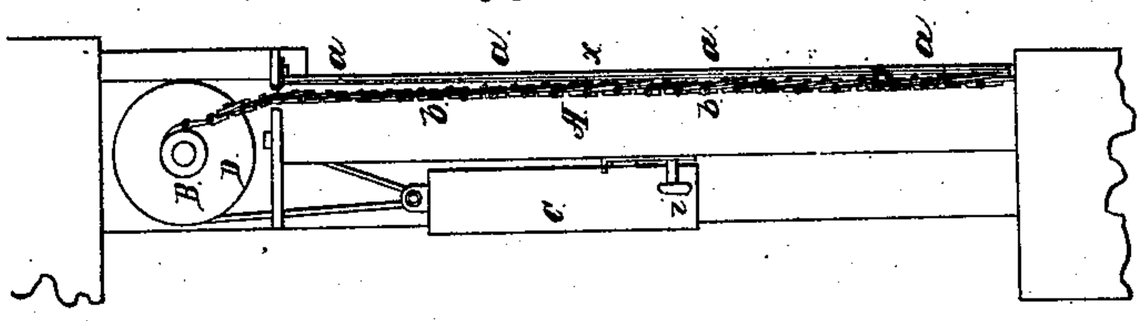
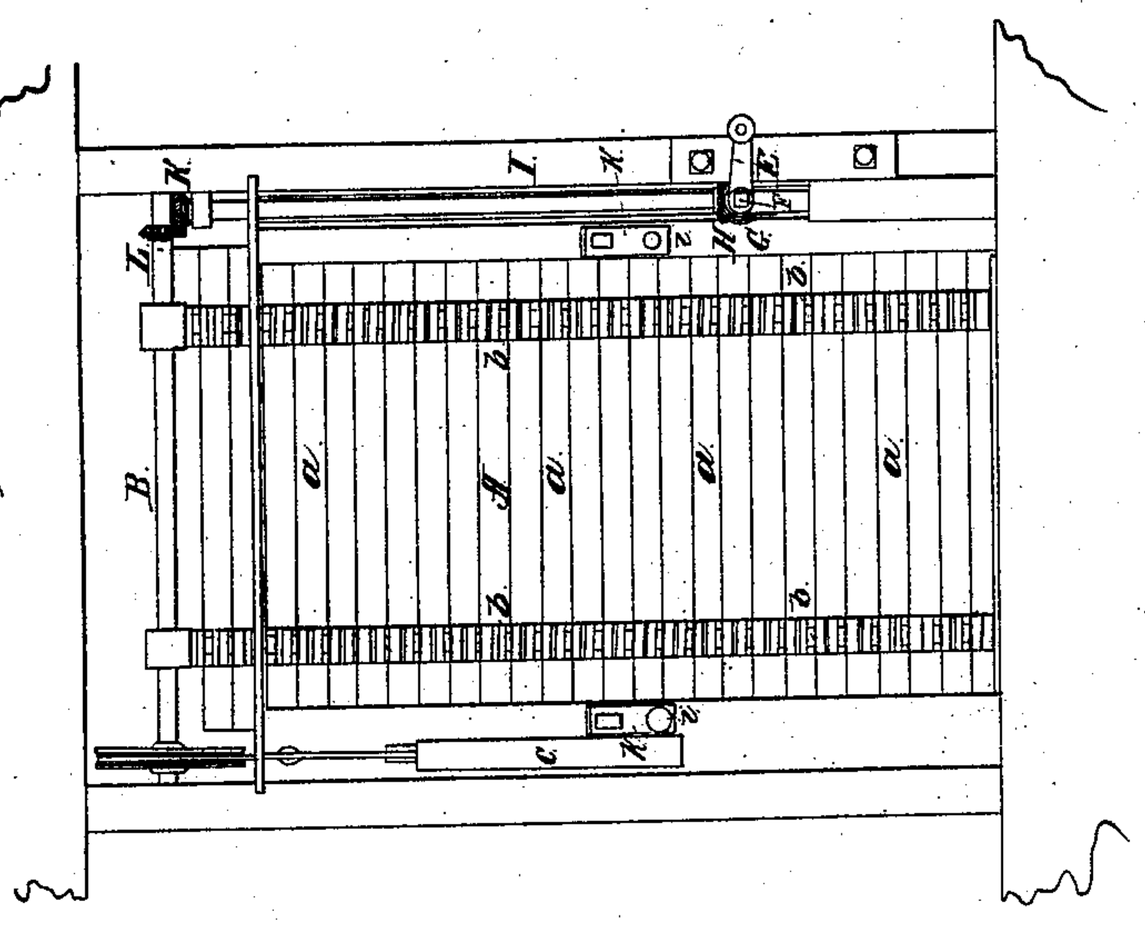


Fig. 1.



UNITED STATES PATENT OFFICE.

EBENR. CATE, OF BOSTON, MASSACHUSETTS.

WINDOW-BLIND.

Specification of Letters Patent No. 5,097, dated May 1, 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 Iron Elevating Folding Window Shutters or Blinds now in General Use for Store-Fronts, &c.; and I do hereby declare that the nature of the same is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings Figure 1 denotes an elevation of my improved elevating, folding shutter or blind. Fig. 2, is a vertical, central and transverse section, and Fig. 3 is a horizontal section thereof. Fig. 4 is a vertical and transverse section taken through one of the locking bars to be hereinafter described.

There are now in common use in various cities, both in this country and in Europe, elevating, folding window shutters, or blinds, such as are described or mentioned in the Letters Patent granted in the United States, on the eleventh day of April, A. D. 1842, to Arthur L. Johnson of Baltimore Maryland. They consist of a series of metallic or wooden slats, united together at their edges by hinges, and made at their ends to rest and travel up and down, in parallel grooves, or guides applied to the window frame or other convenient part of a building. They are raised and depressed by means of a windlass barrel, over which they are wound and unwound. My invention is an improvement thereon, or combination therewith of a certain peculiar mechanism, the purpose of which I shall hereinafter describe.

In the aforementioned drawings A denotes a window blind, composed of a series of metallic or wooden slats *a*, *a*, &c., arranged, lapped over one another, and united together by hinges *b*, *b*, &c., as seen therein. The blind so made has its side, or vertical edges placed in vertical guide passages *c*, *c*, made or formed in the window frame. It is connected to a horiontal shaft or barrel B which is disposed over the blind, and revolves in suitable bearings properly affixed to, or made in the window frame. A balancing weight C is suspended to a pulley D applied to the shaft or barrel, the object of the said weight being to balance the window blind. The elevation or depression of the blind is effected by means of a crank E fixed upon one end of a short horizontal shaft F, a beveled gear G on the other end, another beveled gear H fixed upon a vertical shaft I and engaging with the gear G, a beveled gear K, on the top of a vertical shaft I, and another beveled gear L, fixed upon the shaft of the windlass barrel, and engaging with the gear K, the whole being arranged, and made to operate together as seen in the drawings. Any other proper mode of effecting a rotation of the windlass barrel may be adopted.

The window shutter or blind so constructed and operated, I consider as making no part of my invention, which is as follows: To the rear side of the blind, and near each vertical edge thereof, and within a vertical chamber *d*, formed in rear thereof, and in the window frame, I apply one of two vertical bars *e*, *e*, made to extend from top to botton of the blind, or thereabout, as seen in Fig. 4. Each of said bars may be pressed forward toward, and against the blind, by one or more springs *f*, *f*, or other suitable contrivances properly applied to it, and acting against the back of chamber *d*. It (the bar) may have if desirable any suitable number of small pins, or studs *g*, *g*, inserted in, and made to project from its front face and to enter holes *h*, *h*, (corresponding in size, and in their distances apart to them) made through the slats or window blind. These studs should be of such length, that when the vertical bolt bar is forced forward so as to rest against the blind, and press it forward against the front plate *x*, of the groove *c* they may pass partially or entirely through the blind, and also so that on the bolt bar being moved back or retracted, a short distance, they will pass entirely out of the holes of the blind, and leave it to be freely raised up or lowered down as occasion may require. The horizontal width of the chamber should correspond with that of the bolt bar, as seen in Fig. 3, that is to say, the bar should be made to fit it so closely as not to have any injurious lateral movement, and still be able to move freely back and forth, or toward and from the blind.

I make the distance or space between the front plate *x*, and the front edge of the side plate *y* of the chamber *d*, much greater than has heretofore been customary, that is to say I make the said space of a width about three times the thickness of that part of the

blind which moves in it, and I do this in order to prevent any rust or oxidation, or dust, which frequently lodges between the slats, and the sides of the said space or groove in which they move—from operating so as to cause any binding or friction of the blind when raised or lowered. In fact the spaces or grooves *c*, *c*, within which the ends of the blind move, should be made of such width, that the blind, when resting centrally in them may remain freely, out of contact with the sides thereof. When the bars *e*, *e*, are allowed to be sprung forward, and press against the blind, they force it closely against the front plates *x x* and thus make to all intents and purposes a close, or sufficiently close joint, to prevent the admission of rain, or any extraneous matter, into the grooves *c*, *c*, or chambers in rear of them. When the pressure bars *e*, *e*, are drawn back they leave the blind hanging freely in the grooves or wide spaces between the plates *x* and *y*, at each side of it, so that on putting in operation, the mechanism for raising or lowering the blind, the said blind may be raised or lowered freely, without any injurious friction in its guide grooves.

In winter it sometimes occurs, that water will be blown or otherwise get between the blind and the front plate *x*, and there be frozen, so as to render it difficult to operate the blind. Besides under such circumstances, as well as where the blind bears hard in its grooves, from other causes, the hinges are liable to be broken, or injured. It therefore becomes a very important matter, that the blinds should be moved away from contact, with the front plates *x*, *x*, in order to travel freely up and down without obstruction. It will thus be seen that the main object of the bars *e*, is to press the blind, (when down) forward and close against the front plates *x*, *x*, for the purposes above mentioned.

The pressure bar *e*, may be drawn back by a knob *i*, or other contrivance of like nature applied to it, as seen in Fig. 4, and extending through the back part of the chamber *d*, and when so drawn back, the locking bar may be kept retracted by a sliding bolt or plate *k* affixed to the back of the chamber as seen in Fig. 4, and made to slide into and out from a suitable notch *l*, made in the shank of the knob *i*. I do not, however deem this mode of fastening the locking bar back, as constituting any part of my invention, as I intend to adopt any other convenient and proper method of accomplishing the same. The bar may be forced forward, and retracted by a screw or screws. From the above it will readily be seen, by any person of ordinary skill as a mechanician, how completely the bars, when thrown forward against the blind (provided they are provided with pins *g g*) not only prevent it from being raised either upward or being drawn out of place by force, applied on the outer side of it, or that side of it which faces the street, but press it close up against the front plates *x x* and thus exclude rain, etc.

My invention when applied to a blind, such as above described enables me to construct it, without any of the ordinary bending of the ends of the slats, such as is claimed by the aforesaid Johnson, in order to keep them from being drawn out of place. By having plain slats without bent ends, I am enabled to operate the blind with much less friction, and to much better advantage, than can be effected by the invention of the said Johnson. Besides I not only keep the blinds or slats from being drawn out of place laterally and horizontally when closed down, but I obtain further a very important advantage, viz., that of being able to prevent any person from raising the blind by any force applied to it in the street.

I therefore claim as my invention—

The pressure bars *e*, *e*, in combination with the folding blind and its frame, as constructed with wide grooves and made to operate in connection therewith substantially as described.

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

EBENR. CATE.

Witnesses:

R. H. Eddy,

S. W. Waldron, Jr.