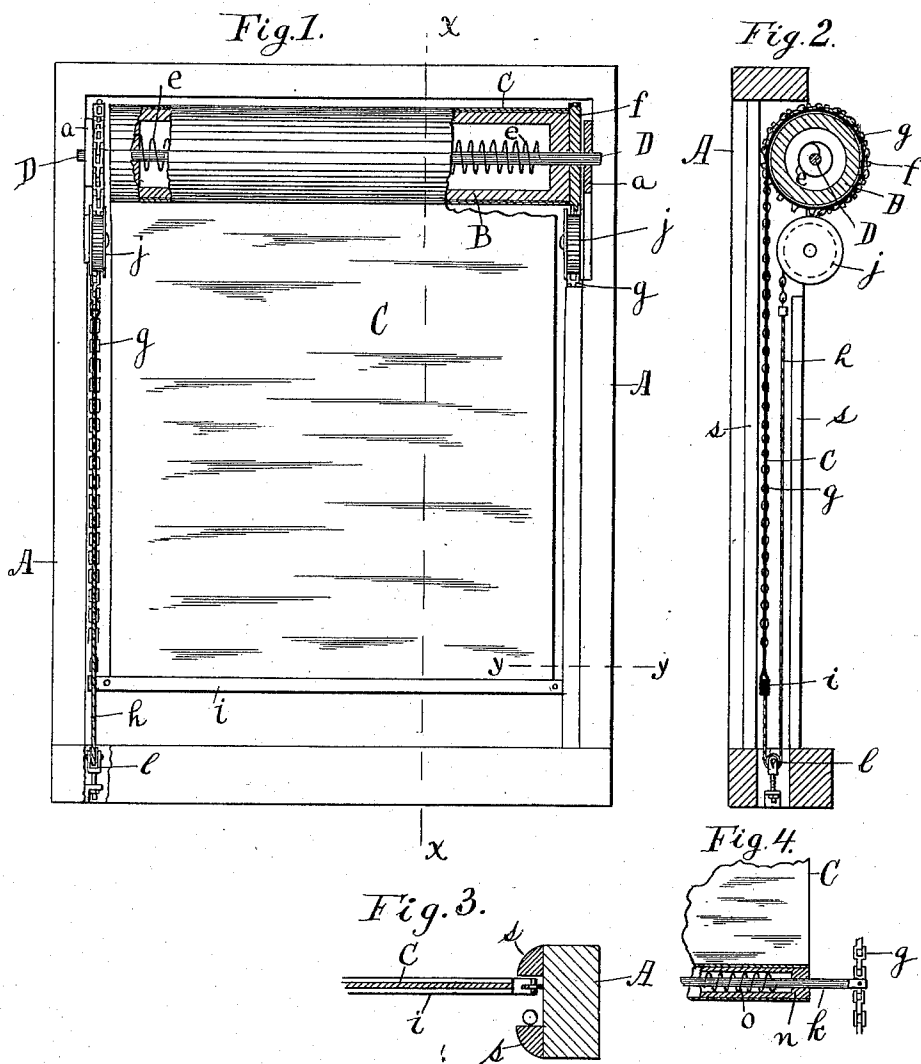


(No Model.)

J. A. LIDBACK.
WINDOW CURTAIN.

No. 544,815.

Patented Aug. 20, 1895.



Witnesses:
E. Dudley Freeman
James E. Woodwell

Inventor:
John A. Lidback
by S. M. Bates
his atty.

UNITED STATES PATENT OFFICE.

JOHN A. LIDBACK, OF PORTLAND, MAINE.

WINDOW-CURTAIN.

SPECIFICATION forming part of Letters Patent No. 544,815, dated August 20, 1895.

Application filed January 16, 1895. Serial No. 535,078. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. LIDBACK, a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Window-Curtains; 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 a window-curtain so constructed that it will remain in place at whatever elevation it may be left against any of the causes which ordinarily displace such curtains.

The invention is particularly designed as a curtain for open and closed street-cars, railway-cars, and the like, where difficulty is usually encountered in securing the curtains so that they will remain in place against the jarring motion of the cars. Car-curtains are particularly subject to rough usage by ignorant people, who do not always know enough to make use of the handles often provided for moving the curtain up and down and who are liable to seize it at one side or the other and push it roughly up or down. In order to meet this condition I aim to construct a curtain which shall be so simply and substantially made that it will be proof against the roughest sort of treatment and may be manipulated by taking hold of the curtain-stick at the center or at one side indifferently, the curtain-stick always remaining horizontal.

In the accompanying drawings I have illustrated a curtain constructed according to my invention.

In the drawings, Figure 1 is a front view of the curtain with portions cut away. Fig. 2 is a section on the line *x x* of Fig. 1; and Fig. 3 is a section on the line *y y* of Fig. 1, on an enlarged scale. Fig. 4 is a section of the lower end of the curtain in a modified form.

A A represents the window-casing, and C is the curtain, which is wound in the usual manner on the roller B. The roller B is mounted on a shaft D, which extends through it, the ends of the shaft being mounted in suitable bearings *a*. The roller is free to rotate on the shaft D to a limited extent, connection being made between them by the torsion-spring *e*,

one end of which is secured to the shaft and the other end to the roller. Secured solidly to the shaft at each end of the roller is a sprocket-wheel *f*, on which runs an endless sprocket-chain *g*. That portion of the chain which does not pass over the wheel in the operation of the curtain is replaced by a cord *h*; but for the purposes of this specification I have denominated the entire member as an "endless sprocket-chain," since it is a matter of indifference whether a whole chain is used or whether a cord is substituted for a portion of the chain. The chain is passed around a pulley *l* at the lower end of the casing and a guide or guide-pulley *j* is placed immediately below the wheel *f*, so that the two parts of the chain are made to run close together, near to the inside of the casing and within the groove or recess formed by the moldings *s s*. The pulley *l* is provided with means by which it may be adjusted vertically to regulate the tension on the chain. The lower edge of the curtain is secured to the endless chain on each side by means of the curtain-stick *i*. Before being fastened to the chain the curtain is drawn down, while the chain is held in place to prevent the sprocket-wheel from rotating. The curtain-roller is thus turned against the action of the spring, and a pull is exerted on the curtain, which tends to roll it about the roller independently of any movement of the chain and the sprocket-wheel.

The curtain is moved up and down by grasping the lower edge at any point and raising or lowering it. The ends of the curtain-stick, being secured to the chain, move the chain up or down, rotate the sprocket-wheel, and turn the roller which winds up the curtain as fast as the lower edge is raised and unwinds as the lower edge is lowered.

It will be seen that the tension on the roller (before described) overcomes any tendency for the curtain to wrinkle at the top, as it would do if the positive motion of the sprocket-wheel did not wind as fast as the curtain-stick was lifted, and it forms an automatic adjustment which keeps the curtain taut at all times, for when the curtain is at rest there is always a pull on the curtain-stick, caused by the tension of the spring, as before described. The curtain is held in place against the jar of the car, &c., by the friction of the

sprocket-chain passing over its various bearings.

It will be seen that the lower edge of the curtain is always bound to be horizontal, since the two sprocket-wheels and chains have the same motion.

The roller B may, if desired, be made solid with the shaft D and the sprocket-wheels, and in that case the tension on the curtain may be maintained by means of a similar roller mounted on the lower end of the curtain, as shown in Fig. 4.

The shaft *k* is substituted for the curtain-stick, and on this is mounted the roller *n*, connected to the shaft by a torsion-spring *o*. Before the shaft is attached to the chain it is drawn down so that the roller *n* unwinds a portion of the curtain which is rolled on it against the force of the spring *o*. When the roller *n* is lifted and the upper roller caused to rotate, if the slack is not taken up as fast as the curtain-stick is lifted the lower roller takes it up, winding it on by the action of the spring *o*.

I claim—

1. The herein described window curtain consisting of a curtain roller, a curtain wound thereon, a shaft on which said roller turns bearings for said shaft, a torsion spring connecting said shaft with said roller, a sprocket wheel secured to said shaft at each end of said roller, an endless sprocket chain engaging each of said sprocket wheels, a guide pulley at the lower end of the window casing over

which said chain passes, the lower edge of said curtain being secured to said sprocket chain.

2. The herein described window curtain consisting of a curtain roller, a curtain wound thereon, a shaft on which said roller turns, bearings for said shaft, a torsion spring connecting said shaft with said roller, a sprocket wheel secured to said shaft at each end of said roller, an endless sprocket chain engaging each of said sprocket wheels, a vertically adjustable-guide pulley at the lower end of the window casing over which said chain passes, the lower edge of said curtain being secured to said sprocket chain.

3. The herein described curtain consisting of a curtain roller, a curtain wound thereon, a shaft on which said roller is mounted, bearings for said shaft, a sprocket wheel secured to said shaft at each end of said roller, an endless sprocket chain engaging each of said sprocket wheels, a guide at the lower end of the window casing over which said chain passes, the lower end of said curtain being secured to said chain and means for taking up any slack which may form in said curtain between its upper and its lower ends.

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

JOHN A. LIDBACK.

Witnesses:

S. W. BATES,

E. DUDLEY FREEMAN.