S. HEDGES.

Curtain-Fixture.

No. 207 520. Patented Aug. 27, 1878.

Fig. 1.

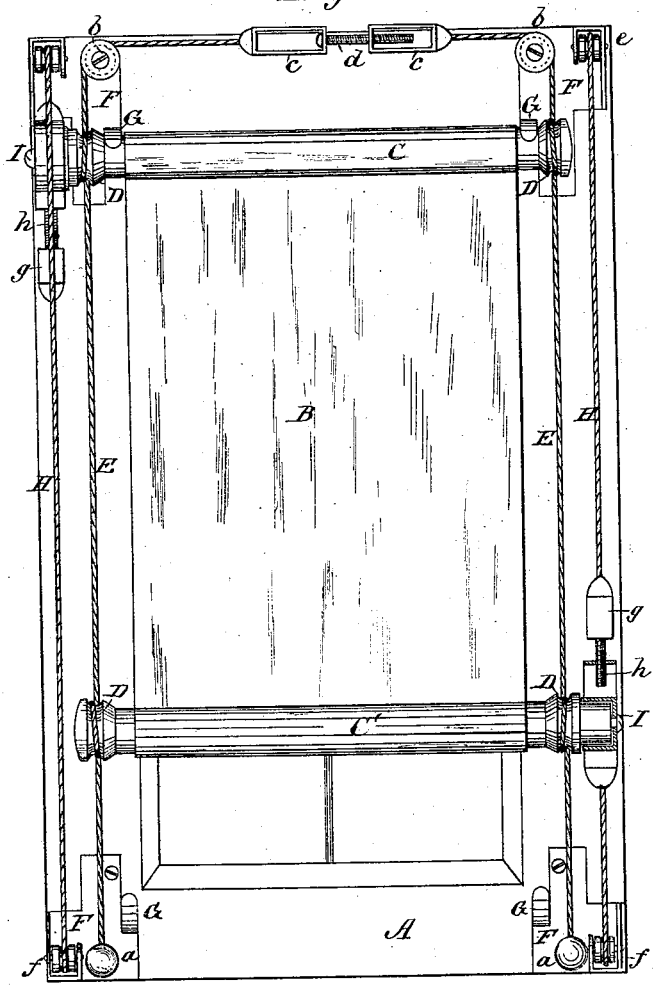


Fig. 2.

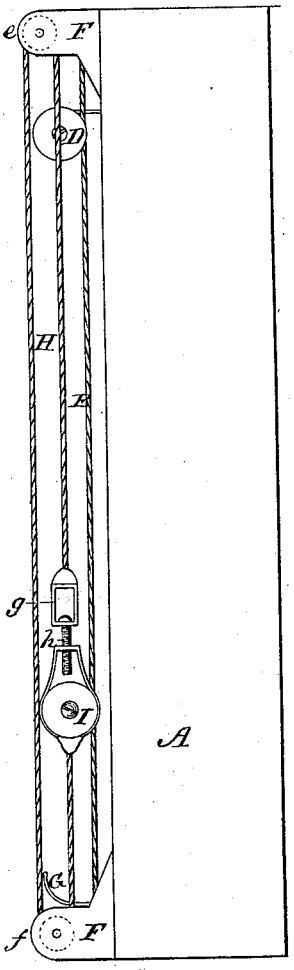


Fig. 3.

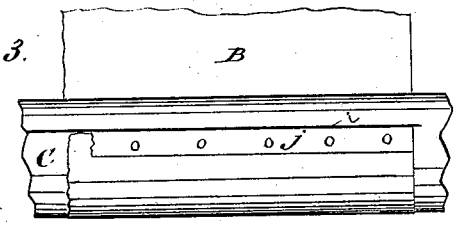
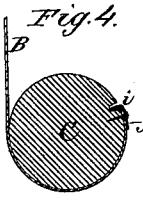


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

SAMUEL HEDGES, OF WHEELING, WEST VIRGINIA.

IMPROVEMENT IN CURTAIN-FIXTURES.

Specification forming part of Letters Patent No. **207,520**, dated August 27, 1878; application filed January 16, 1878.

To all whom it may concern:

Be it known that I, SAMUEL HEDGES, of Wheeling, in the county of Ohio and State of West Virginia, have invented a new and Improved Window-Shade Fixture; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a front, and Fig. 2 a side, view of the devices applied to a window-frame. Figs. 3 and 4 are enlarged details, illustrating the manner of attaching the shade to the rollers.

My invention relates to certain improvements upon that form of window-shade in which two rollers are employed, one at the top and the other at the bottom of the shade, to enable both ends of the same to be adjusted, the said shade being sustained by a tightened cord wrapped around the rollers, which, as the rollers are separately adjusted by an independent cord, serves to give by frictional contact the necessary rotary motion to wind or unwind the shade.

The improvements consist, first, in the devices for adjusting the tension or taking up the slack in the cord which is wrapped about the rollers to sustain the shade; secondly, in the combination, with the shade-rollers, of stop-projection, for correcting the crooked position of the rollers should they get out of a true horizontal line; thirdly, in combining with the rollers, as sustained by the tension-cords, an endless cord, having in its circuit a tension-adjusting device and a socket, in which the projecting ends of the rollers rest and are free to revolve, while said endless cord and socket move the roller up or down; and, fourthly, in the means for attaching the shade to the roller, all as hereinafter more fully described.

In the drawing, A represents a window-frame to which my devices are applied. B is the window-shade, having its upper end attached to roller C and its lower end attached to roller C′. D are grooved pulleys, cast and rigidly attached to the rollers, so as to revolve with them. Around these pulleys is wrapped upon each side of the shade a stationary cord, E. These cords are attached below to cast plates F on the frame-work by means of a knot contained in a hollow conical boss, *a*, cast upon said plates, and after being wrapped about the grooved pulleys on the rollers are passed around friction-pulleys *b* at the top of the window, and their ends then united by means of the tension-adjusting device. This tension device consists of two links, *c c*, connected by a screw-stem, *d*, and having at their outer extremities hollow conical and perforated ends, in which the knot of the cord is held and concealed from sight. Now, as the weight of the shade and rollers is sustained by the cords E, and rotation imparted to said rollers by the frictional contact of said cord, it is obvious that any looseness of the cord would defeat the adjustment of the shade. To provide for this difficulty, caused by the inevitable stretching of the cord, I connect with the ends of the cord the tension devices, as before described, whereby the slack may be taken up by turning the screw-stem, which is to be provided with a transverse hole, so as to permit a nail or other object to be inserted to give axial motion to said stem.

In wrapping the cord about the pulleys on the roller one point is to be observed which is of considerable importance in the practical working of the device, as follows: The ends of the cord upon opposite ends of the shade must be in line with each other—that is to say, if the end of the cord below the lower roller is on the right hand of the loop or wrap around said roller, then the end of the cord above the upper roller must be on the right of the loop or wrap of that roller, and vice versa. This brings the strains in alignment with each other for both rollers, and causes said rollers to move in true parallel positions, whereas if a different arrangement of wrap were employed an unequal strain would be the result, and the rollers, being free and unconfined, would be driven from their correct position.

G are the stops for the rollers, which are formed with or cast upon the plates F. If one end of a roller gets in advance of the other, when the roller reaches the limit of its adjustment said forward end strikes one of these stops first, and is detained thereby, while the other end continues to advance until horizontal and parallel with the other

roller. By correcting this tendency to deviate from a horizontal parallel position it will be seen that these stops prevent the uneven and crooked winding of the shade.

To give positive motion to the rollers, in order to secure the adjustment thereof with the shade, a cord, H, is passed around pulleys *e f* in the upper and lower plates F upon each side of the shade. One end of this cord is knotted and secured in the hollow perforated conical end of a link, *g*, and this link is connected by means of a screw-stem, *h*, with a socket-plate, I, in which freely revolves the projecting end of the roller. In a hollow cone upon the bottom of the socket-plate is secured the knot of the other end of this cord, so that with said adjusting device in circuit the cord H is made continuous. Now, by pulling upon this endless cord the rollers may be moved in either direction, and as they move their frictional contact with the fixed cord causes their rotation and the winding or unwinding of the shade. This endless cord is adjusted as to tension by the screw-stem *h* in the same manner as the fixed cord. These devices, it will be seen, do not rely upon the gravity of the shade for the downward adjustment, but operate with a positive motion in both directions.

To secure the shade to the roller, a narrow longitudinal groove or slit is made in the same, as at *i*, Figs. 3 and 4, and one edge of a strip, *j*, of sheet metal is inserted therein, the strip bent over, and after being lapped upon the edge of the shade is tacked through the same to the roller, thus forming a firm, durable, and neat attachment.

As shown, the pulleys *e* and *f* are arranged in right-angular projections from the frame, and this will be the preferred arrangement whenever the window-frame is not flush with the inner wall, as in basement-windows; but when the window-frame is flush with the inner wall the pulleys may be arranged flat against the wall and in the same plane as the shade.

With respect to the manner of attaching the shade to the roller, I am aware that a longitudinal groove has been made in the roller, and the edge of the curtain fastened in said groove by a strip which fills up the same. In this case, however, the strain of the curtain is at right angles to its fastened edge, and the sharp edge over which the curtain binds is liable to wear the same in two at the point. In my case it will be seen that the bend is in the metal strip instead of the cloth, the metal strip having one edge inserted in the slit and the other being bent over to fasten the curtain tangentially without a bend and without passing over a sharp corner.

I am also aware of the fact that there is no patentable invention in simply attaching a piece of cloth to a roller by tacking through a flat and plain metal strip; but when the cloth is once wrapped around the roller the sharp back edge of this strip cuts the curtain. The back edge of my strip being bent round and inserted into the slit, the cutting-edge is removed from contact with the curtain, and a smooth round surface left for the curtain to pass over.

Having thus described my invention, what I claim as new is—

1. The tension-adjusting devices consisting of the screw-stem *d* and the links *c c*, having hollow conical perforated ends, in combination with the shade B, rollers C C′, and stationary cord E, substantially as and for the purpose described.

2. The stops G, arranged upon both sides of the window, combined with the shade B and the vertically-adjustable rollers C C′, substantially as and for the purpose described.

3. The combination, with the shade B and rollers C C′, of the cord H, arranged about pulleys, as described, and having in its circuit the link *g*, screw-stem *h*, and socket-plate I, arranged about the extremity of the roller, substantially as and for the purpose described.

4. The combination of the longitudinally grooved or slitted roller C, the shade B, and the strip *j* of sheet metal, arranged with one edge in the slit of the roller and the other tacked down upon the shade, as and for the purpose described.

The above specification of my invention signed by me this 2d day of January, 1878.

SAMUEL HEDGES.

Witnesses:
SOLON C. KEMON,
A. B. ROBERTSON.