(No Model.)

J. S. JUDGE.

WINDOW SHADE.

No. 604,329. Patented May 17, 1898.

FIG. 1.

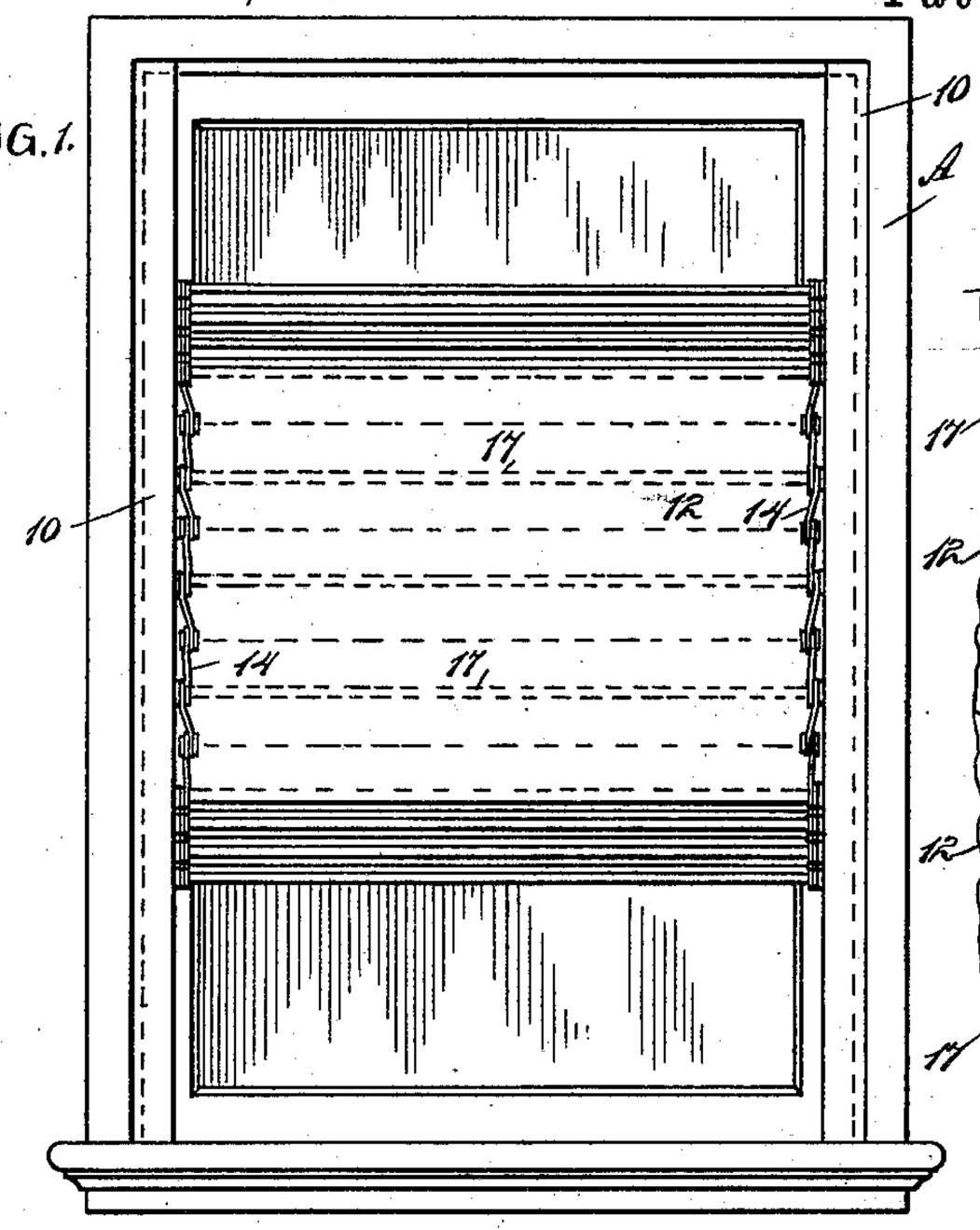


FIG. 3.

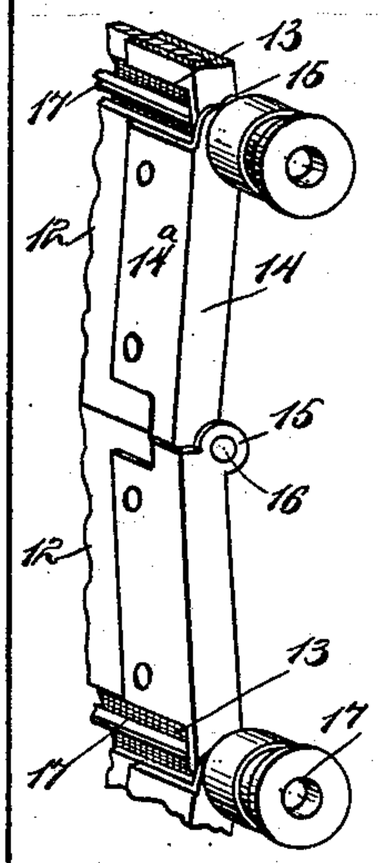


FIG. 2.

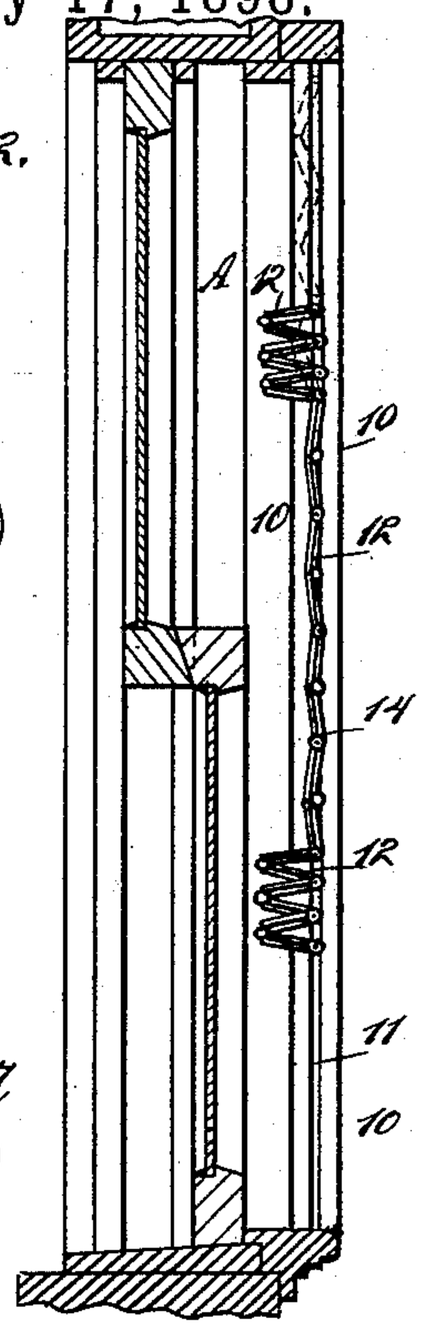


FIG. 4.

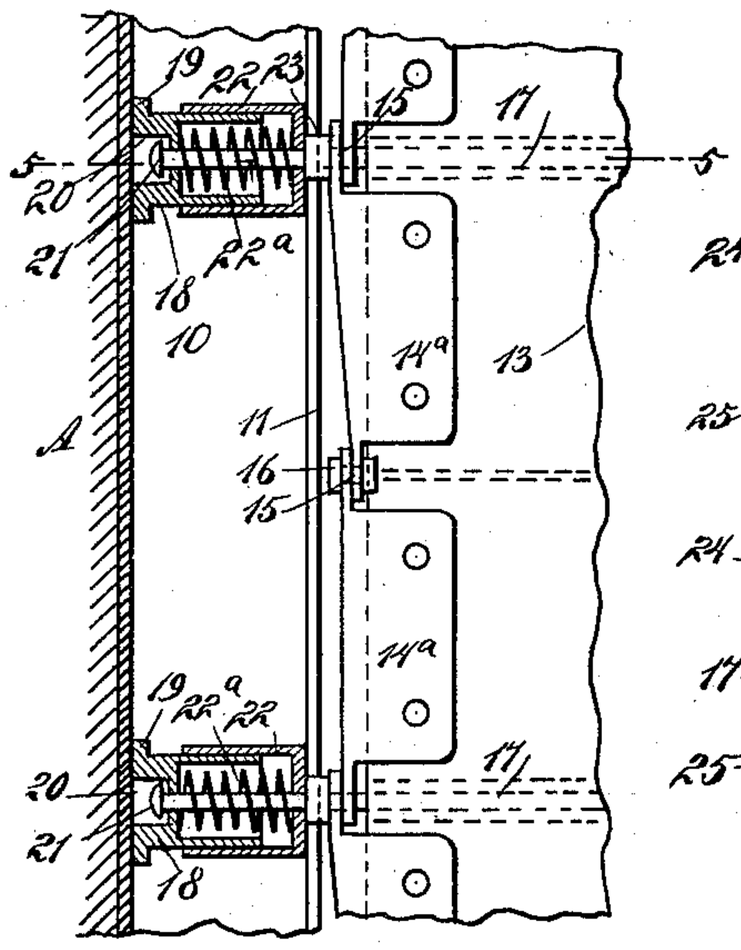


FIG. 6.

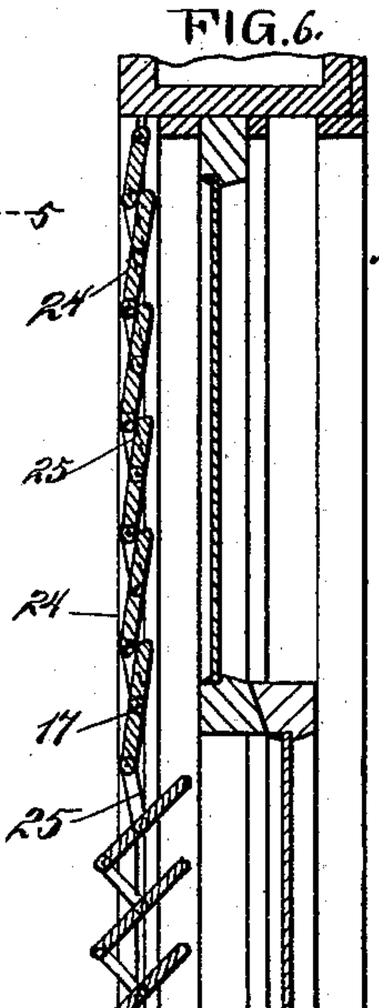


FIG. 5

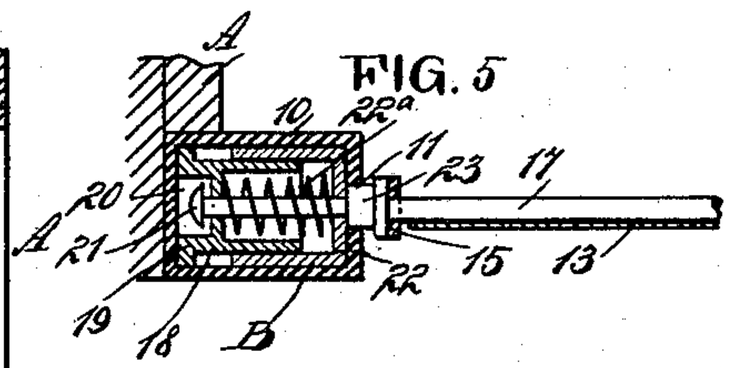
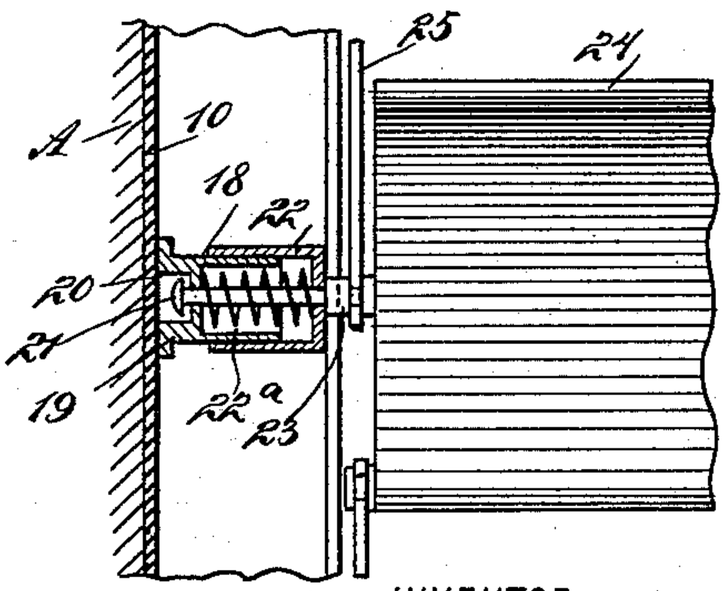


FIG. 7.



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WINDOW-SHADE.

SPECIFICATION forming part of Letters Patent No. 604,329, dated May 17, 1898.

Application filed August 19, 1897. Serial No. 648,748. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. JUDGE, of Peterborough, in the Province of Ontario and Dominion of Canada, have invented a new and useful Improvement in Window-Shades, of which the following is a full, clear, and exact description.

The object of the invention is to provide a window-shade of the slat type capable of attachment to any window and being of a simple and economic construction.

Another object of the invention is to provide a slat shade which may be gathered in or folded at the top, bottom, or at points intermediate of the same, while other points may be lengthened out in a vertical direction, the adjustment of one part not interfering with the adjustment of other portions of the shade.

A further object of the invention is to provide for retaining the various portions of the shade in their adjusted positions until purposely readjusted.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of a window to which the improved shade is applied at the inside. Fig. 2 is a vertical section through the window and frame sashes and the shade, illustrating the shade as being folded up at portions of its length. Fig. 3 is an enlarged detail view illustrating the manner in which two slats are connected. Fig. 4 is a vertical section on an enlarged scale, the said section being taken through the guide for the roller-bearings of the slats of the shade and showing a portion of several of the slats from the outside. Fig. 5 is a horizontal section taken substantially on the line 5 5 of Fig. 4. Fig. 6 is a vertical section through a window frame and sashes and through a modified form of the shade, the said shade being particularly adapted for the outside of the window; and Fig. 7 is a detail view illustrating the construction of one of the slats and the manner in which it has its bearings in its guides.

A represents a window-frame provided with the necessary sashes, and either at the front or at the back of the window-frame, according to where the improved sash is to be located, a guide 10 is secured to the inner face of the window-frame at each of its upright portions or those upright portions which are adjacent to the sashes. Each guide is open at the top or at the bottom and is provided with a vertical groove or slot 11, which extends from top to bottom, and, furthermore, the said guides may be secured to the frame in any suitable or approved manner.

In the preferred form of the shade it is constructed of a series of horizontal slats 12, made from any suitable material, and when the slats are placed upon the inside of the window-frame the outer faces of all the slats of the shade are connected by a canvas strip 13 or a strip of any other suitable flexible material. Each slat of the shade is provided at each of its ends with a cap 14, usually made of metal, having side flanges 14^a, which are secured to the front and the rear portions of the slats. Each cap 14 is provided at the top and at the bottom of the surface covering the end of the slat with a lug or an ear 15, and preferably, as shown in Fig. 4, the outer edge portion of a cap carrying the ears 15 and located adjacent to a second cap is given a downward and an inward inclination. Thus each alternate cap is inwardly inclined and the other made straight. The purpose of the inclination of the alternate caps is to provide for a lug or ear 15 of the inclined cap engaging with the inner face of the lug or ear on the adjacent straight cap. The slats are arranged in pairs, and each pair of slats is connected by passing a pivot-pin 16 through the engaging ears of the lugs of the caps of said slats; but one pair of slats is connected with another pair by means of a spindle 17. This spindle while being carried through the opposing or abutting lugs or ears 15 is also carried beyond said lugs or ears and is of such length that the ends of the spindle may pass into the grooves or slots 11 in the guides 10.

At each end of each spindle 17 a roller tension device or bearing is formed, and each bearing consists of a hollow cylinder 18, provided at its outer end with a flange 19 and a depression 20, in which depressions heads 21,

formed on the ends of the spindles 17, are contained, the spindles playing loosely in the said cylinders 18, as shown particularly in Fig. 5. Each of the cylinders 18 is received within a second cylinder 22, through which the spindles 17 are loosely passed, and springs 22ª are coiled around the ends of the spindles 17, having bearings against the outer end portions of the inner cylinders 18 and the inner end portions of the outer cylinders 22. These roller-bearings for the spindles 17 are designated in their entirety by the reference-letter B. The spindles 17 are preferably provided with rollers 23 where they pass through the grooves or slots 11 of the guides 10, as is also shown in Fig. 5.

Under this construction it will be observed that after the roller-bearings for the ends of the spindles 17 have been entered into the guides 10, with which the flanges 19 on said bearings directly engage, and also the outer cylinders 22, the slats at any portion of the shade may be gathered up or straightened out, as occasion may demand, to shorten or lengthen the shade at any point in its length and that such adjustment may be accomplished at desired points in the length of the shade without interfering with the position of the slats at other points in said shade.

In Figs. 6 and 7 I have illustrated a shade which is particularly adapted for the outside of a window, and under such construction the slats 24 are made wider than the slats for the inside and are pivoted at their centers by spindles 17, provided with the same roller-bearings B as has been heretofore described; but the lower end portion of each slat is connected by a link 25 with the pivotal portion of the spindle 17 of the slat immediately below it in order to prevent rattling or prevent severe storms from dislocating the various slats. It is obvious that under this latter construction the shade, or more properly the shutter, for the outside of a window may be adjusted in the same manner as the inner shade for the window, heretofore described.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A window-shade, consisting of a series of slats pivotally connected together, and arranged in pairs, each pair of slats at opposite ends being provided with roller-bearings spring-pressed in an outward direction, as set forth.

2. A window-shade consisting of a series of pivotally-connected slats, and roller-bearings projected from the end portions of sundry of the said slats, the said roller-bearings being in spring-controlled sections.

3. The combination, with the window-frame provided with a tubular guide formed with a longitudinal slot, of the window-shade composed of a series of slats pivotally connected together, and tension devices in said guide and connected through said slot with sundry of said slats, whereby the slats may be held at any desired height, as set forth.

4. The combination with the tubular guides formed with longitudinal slots, of the series of slats pivotally connected together and having spindles extended through said slots into said guides, and tension devices in said guides and connected with said spindles, said tension devices being formed in sections spring-pressed against opposite walls of said guides, as and for the purpose set forth.

5. A window-shade consisting of a series of pivotally-connected slats, the said slats being arranged in pairs and each pair of slats at opposite ends being provided with a spindle, and roller-bearings at the ends of the spindles, the roller-bearings being constructed in telescopic sections, and springs interposed between the said sections, for the purpose set forth.

6. The combination with the window-frames having guides, of a shade composed of slats pivotally connected together and arranged in pairs, each pair at opposite ends being provided with a spindle having its ends extending into the guides, hollow cylinders 18 in said guides and received on the ends of said spindles, cylinders 22 in which the spindle ends are loosely inserted and telescoping with the cylinders 18, and springs coiled around the ends of said spindles and bearing against each cylinder 18 and its corresponding cylinder 22 to press the same apart, as and for the purpose set forth.

7. The combination, with guides having vertical slots therein, of a shade consisting of a series of pivotally-connected slats, sundry of the said slats being provided with friction-rollers at their end portions, said friction-rollers being constructed in telescopic, spring-controlled sections, arranged to enter and travel in said guides, for the purpose specified.

JOHN S. JUDGE.

Witnesses:
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HERBERT CHOATE.