W. S. SHAFT.

WINDOW SHADE.

APPLICATION FILED JAN. 18, 1915.

1,289,281.

Patented Dec. 31, 1918.

3 SHEETS—SHEET 1.

Fig. 1.

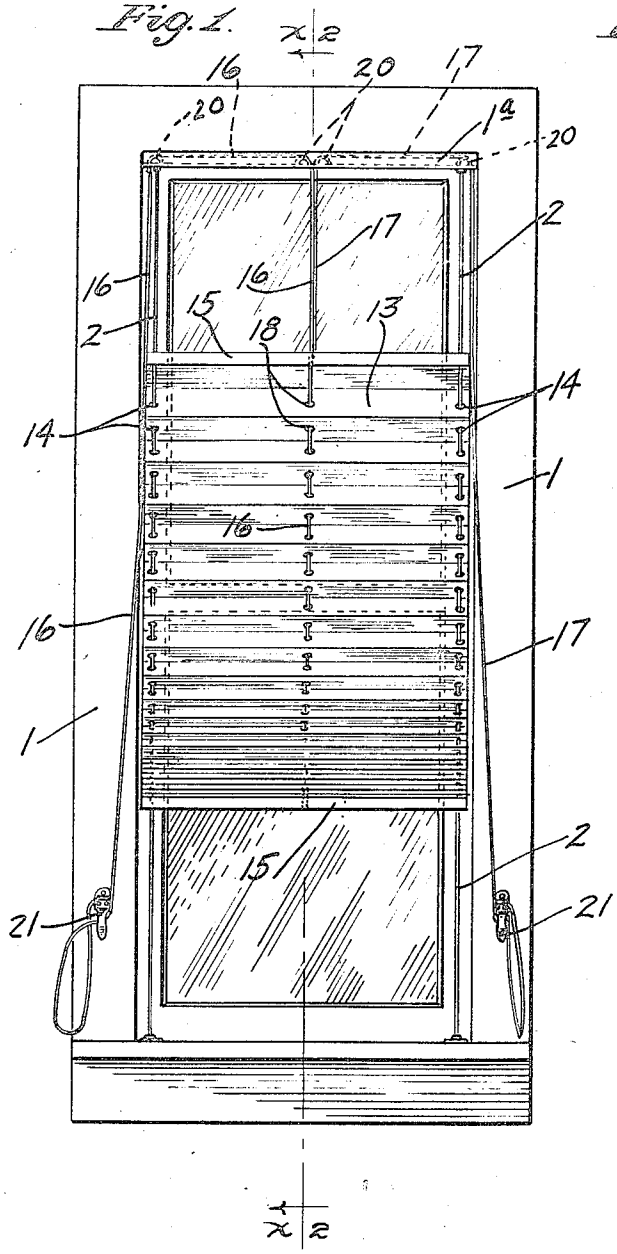
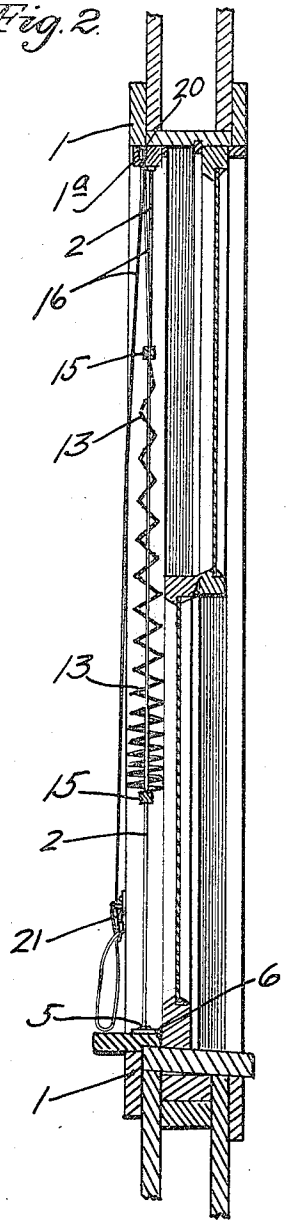


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 3

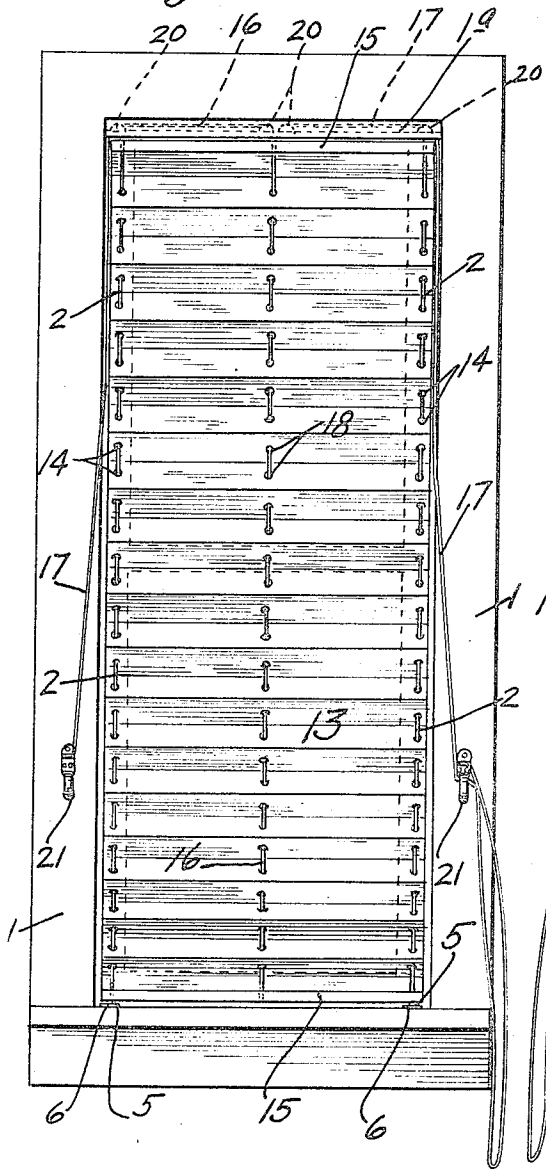
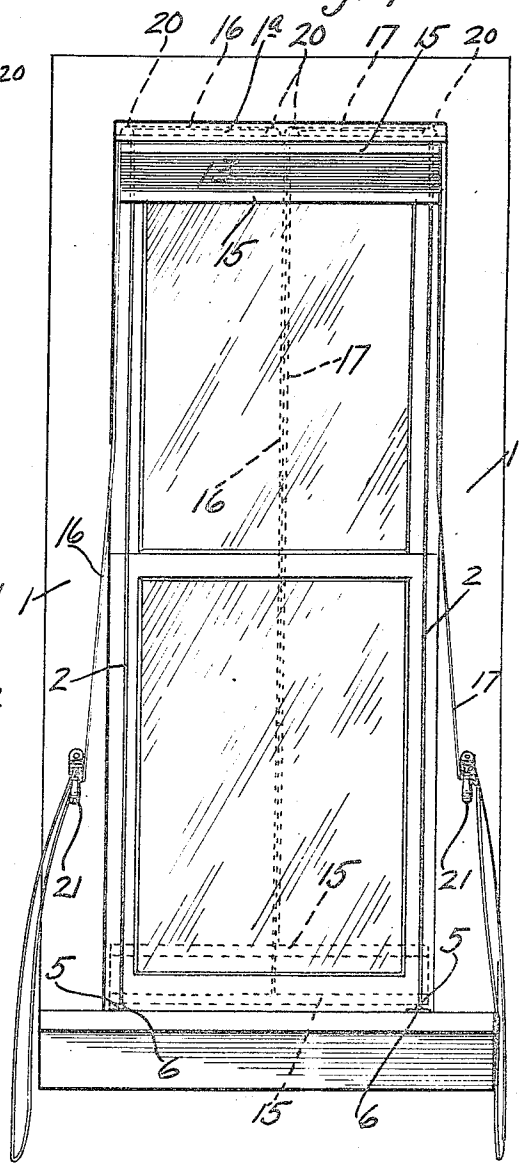


Fig. 4



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3 SHEETS—SHEET 3.

Fig. 5

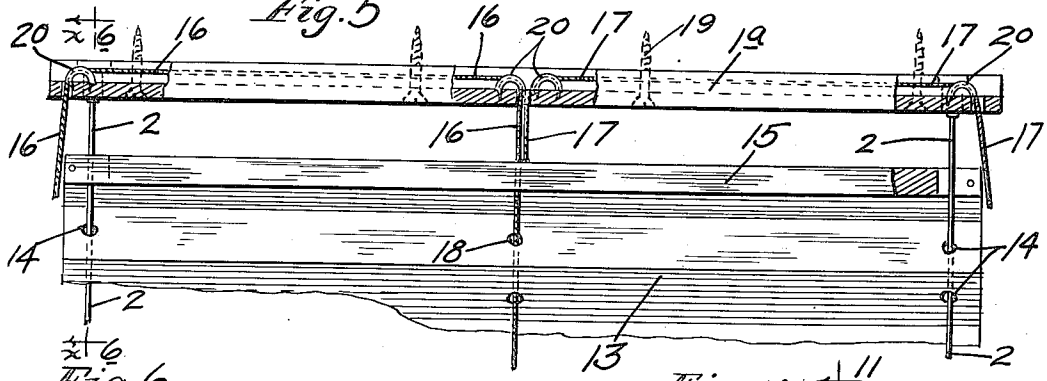


Fig. 6

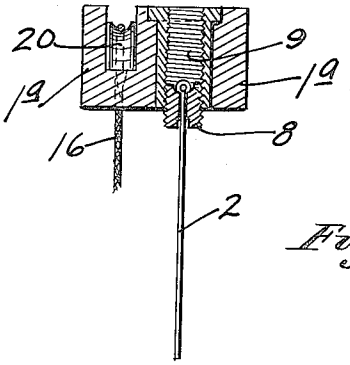


Fig. 12

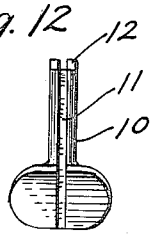


Fig. 10

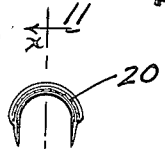


Fig. 11

Fig. 13

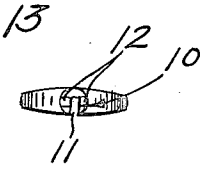


Fig. 7

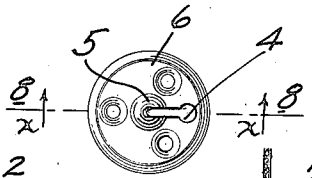


Fig. 8

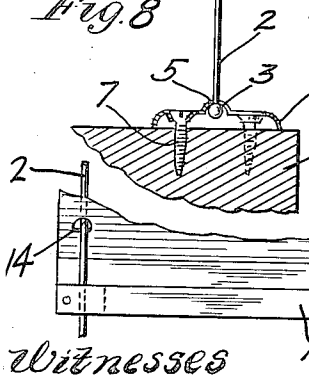
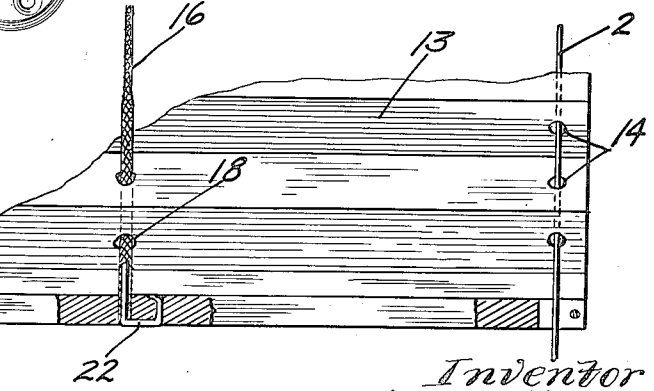


Fig. 9



Witnesses

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UNITED STATES PATENT OFFICE.

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WINDOW-SHADE.

1,289,281. Specification of Letters Patent. Patented Dec. 31, 1918.

Application filed January 18, 1915. Serial No. 2,818.

To all whom it may concern:

Be it known that I, WILLIS S. SHAFT, a citizen of the United States, residing at Faribault, in the county of Rice and State of Minnesota, have invented certain new and useful Improvements in Window-Shades; 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 window shades and is especially designed as an improvement on, or modification of, the shade disclosed and broadly claimed in my prior patent 1,038,005, of date, September 10th, 1912.

Generally stated, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Figure 1 is an elevation looking at the inner side of the window and showing my improved shade applied thereto, the shade being adjusted both at bottom and top to an intermediate position;

Fig. 2 is a vertical section taken on the line x^2 x^2 on Fig. 1;

Figs. 3 and 4 are views corresponding to Fig. 1, but illustrating different adjustments of the shade;

Fig. 5 is a fragmentary view partly in elevation and partly in vertical section showing a portion of the window frame and shade;

Fig. 6 is a vertical section with some parts broken away, particularly showing the means for securing the upper end of one of the shade guiding rods;

Fig. 7 is a detail in plan showing an anchor for securing one of the guide rods at its lower end;

Fig. 8 is a section taken on the line x^8 x^8 on Fig. 7, showing the said anchor devices secured to the window sill;

Fig. 9 is a fragmentary view in elevation showing the lower portion of the shade;

Fig. 10 is a detail in elevation showing one of the cord guides;

Fig. 11 is a section taken on the line x^{11} x^{11} on Fig. 10;

Fig. 12 is a plan view showing a key for tightening the guide rods; and

Fig. 13 is an end elevation of the key shown in Fig. 12.

The window frame is indicated as an entirety by the numeral 1. Extending from top to bottom of the window frame, near the sides thereof, is a pair of tightly drawn parallel shade guiding rods 2, preferably made from small steel wire. At their lower ends, these guide rods 2 are provided with heads 3 that are passed through bayonet rods 4, and are drawn into sockets 5 of anchoring heads 6, which latter, as shown, are rigidly but detachably secured to the sill of the window frame by screws 7 (see particularly Figs. 7 and 8). At their upper ends, the guide rods 2 are passed through axial passages in externally threaded plugs 8 that serve as tightening heads. After the guide rods 2 are passed through the said plugs 8, their ends are bent or offset so that they cannot be drawn back through the axial perforations of said plugs (see particularly Fig. 6). The said plugs 8 are screwed into internally threaded sleeves 9 that are anchored in the tops of the window frames 1.

The expanded outer portion of the rods 4 permit the lower end heads 3 of the guide rods 2 to be passed downward therethrough, and the contracted portions of said rods laid in the sockets 5, so that when the rods are tightened, they cannot be displaced at their lower ends. For tightening the rods 2, I provide a key 10 (see particularly Figs. 12 and 13) which has a longitudinal slot 11 adapting it to be placed on the guide rod with its axis registering with the axis of said rod. At its end, the stem of the key 10 is provided with lugs 12 adapted to enter corresponding notches formed in the lower end of the plug 8. Hence, when the key is applied as just indicated, it may be turned around the guide rod and the plug 8 adjusted so as to put the proper tension on the guide rod. The above noted rotary movement of the plug 8, as is evident, does not twist the guide rod to any considerable extent, as the said guide rod is swiveled thereto.

The window shade proper is indicated by the numeral 13 and is of some suitable flexible material, preferably a fabric. Near its vertical edges, the shade 13 is provided with properly spaced eyelets 14 through which the guide rods 2 are alternately passed in such manner that the shade is drawn together to form an accordion plaiting, and

hence, occupying a minimum of space, (see particularly Figs. 2 and 4). Cleats 15, preferably of wood, are secured to the upper and lower edges of the shade. Shade adjusting cords 16 and 17 are attached, respectively, to the lower and upper cleats 15. The cord 16 is passed freely through a perforation in the upper cleat 15 and alternately through perforations 18 in the folds of the shade. Otherwise stated, the cord 16 follows the same alternated path through the folds of the shade that are followed by the guide rods 2. The shade adjusting cords 16 and 17 pass over suitable guides on the upper portion of the window frame. Preferably, the said window frame is provided with a detachable bar 1^a shown as secured thereto, by screws 19; and the devices for anchoring the upper ends of the guide rods, to-wit, the sleeves 9 and screws 8 are applied to and removable with this bar 1^a (see particularly Figs. 5 and 6), the said bar 1^a is formed with a longitudinal groove within which is set small arched channel-shaped cord guides 20, best shown in detail in Figs. 10 and 11. Both of the adjusting cords 16 and 17, after passing upward over the inner, and outward over the outer guides 20, are passed again downward through perforations in the said bar 1^a, and are brought down within easy reach of a person standing on the floor, and are adapted to be adjustably secured by fasteners 21 of any suitable type, (see particularly Figs. 1 and 2). As an important feature, the lower end of the cord 16 that is attached to the lower cleat 15 is provided with a stiffened lower portion that is rigidly anchored to the said lower cleat. Preferably, this is done by employing a stiff wire 22 which is passed through and clenched into the central portion of the lower cleat 15 and is passed upward into the interior of the expanded lower end of the said cord 16 (see particularly Fig. 9). This stiffened portion of the lower portion of the cord 16, in length, should be slightly less than the distance through the folded shade, so that the said stiffened portion will not prevent the adjustment of the shade shown in Fig. 4. The purpose of the stiffened lower end portion of the cord or cable 16 is to give greater lifting stability to the lower cleat 15. It has the effect of providing the said lower cleat with the rigid upward extension to which the cord is attached, with the result that the tendency to raise the lower portion of the shade equally, at its opposite sides, is greatly increased.

The overhead supporting bar 1^a is preferably made as a part of the shade attachment and it is important to note that all of the parts of the shade are attached thereto, and are removable therewith from the window. For the application thereof to the window, it is only necessary to attach the said bar 1^a, properly to the window frame, and to attach the anchoring heads 6 to the window sill.

By passing one of the lifting cords or cables alternately through the folds of the shade, it is utilized as a means for maintaining the central portion of the shade in proper plaited form, and for causing the same always to fold properly at its intermediate portion. This feature is especially important when the window shade is wide, and when it is made of very light material.

Various different adjustments of the shade are shown in the drawings. Fig. 3 shows the shade extended to close the window; Figs. 1 and 2 show the shade partly spread at the intermediate portion of the window; Fig. 5 shows the shade folded at the top of the window. It is, of course, obvious that the shade is capable of all sorts of intermediate adjustments and may be completely folded at the bottom of the window, or at an intermediate point.

The term "guide wires" is herein used in the liberal sense to include the wire-like, rod-like, or cable-like guide capable of being passed through perforations in the alternated folds of the shade, and on which the shade, as thus applied, can freely slide either to open up, close up, or to shift its position in the window opening.

What I claim is:

1. The combination with vertical guides and means for attaching the same to a supporting frame, of a plaited shade free for vertical movements at upper and lower intermediate portions and having near its edges, perforations through which said guides are passed alternately, and adjusting cords extended above said shade, one thereof being attached to the upper portion of said shade and the other being passed alternately through perforations in the intermediate portions of the folds of said shade, in the same manner as are the said guides, and attached to the lower portion of said shade.

2. The combination with a supporting bar, of vertical guides attached thereto, a plaited shade free for vertical movements at upper and lower intermediate portions and having near its edges perforations through which said guides are alternately passed, adjusting cords extending above said shade, one thereof being attached to the upper portion of said shade, the other being passed alternately through perforations in the intermediate portions of the folds of said shade, in the same manner as are said guides, and attached to the lower portion of said shade, and pulleys carried by the supporting bar around which said adjusting cords are passed.

3. The combination with vertical guides, of a plaited shade mounted to slide vertically on said guides, a cleat applied to the

lower edge of said shade, and an adjusting cord having a rigid lower end portion rigidly anchored to the intermediate portion of said cleat, adapted to pass through the perforations of closed folds.

4. The combination with vertical guides and a plaited shade mounted to slide vertically thereon, of a cleat applied to the lower edge of said shade and an adjusting cord passed through perforations in the intermediate portions of the alternated folds of said shade, and having a rigid lower end portion rigidly secured to an intermediate portion of said cleat, adapted to pass through the perforations of closed folds.

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

WILLIS S. SHAFT.

Witnesses:
JOHN K. GOLD,
C. D. MCGREW.