

March 27, 1928.

W. S. SHAFT

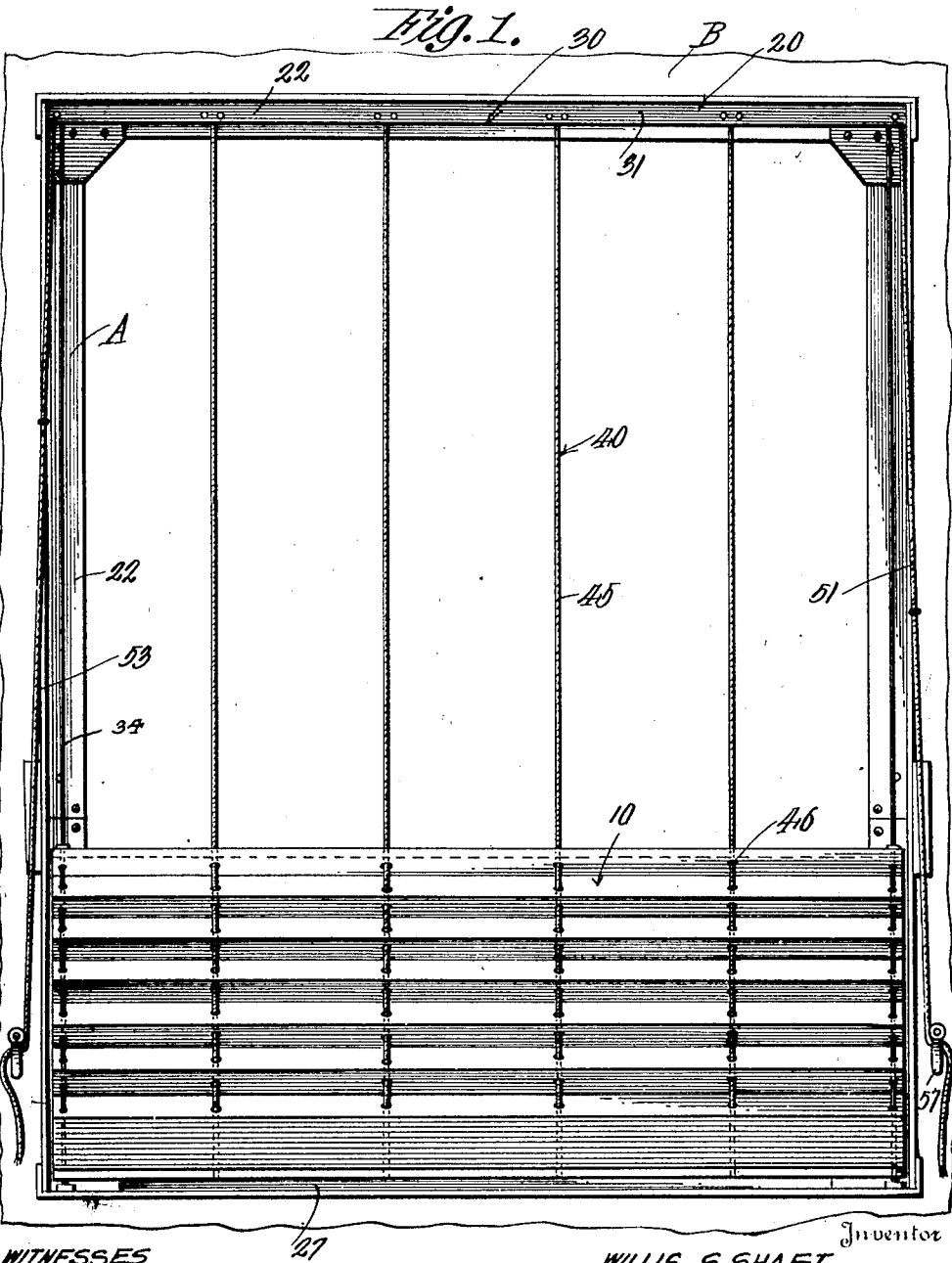
1,663,819

SHADE

Filed Nov. 14, 1923

3 Sheets-Sheet 1

Fig. 1.



WITNESSES
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March 27, 1928.

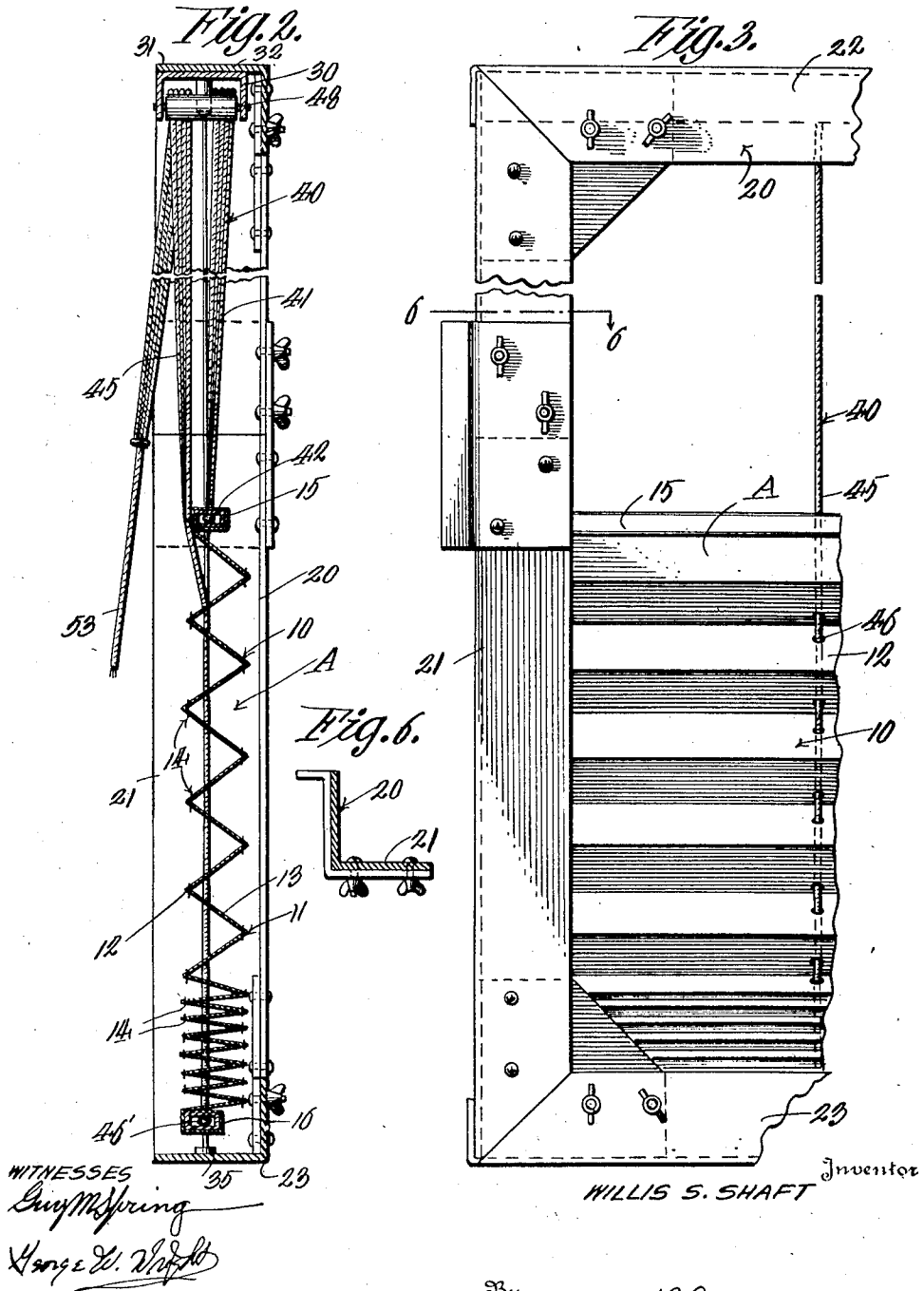
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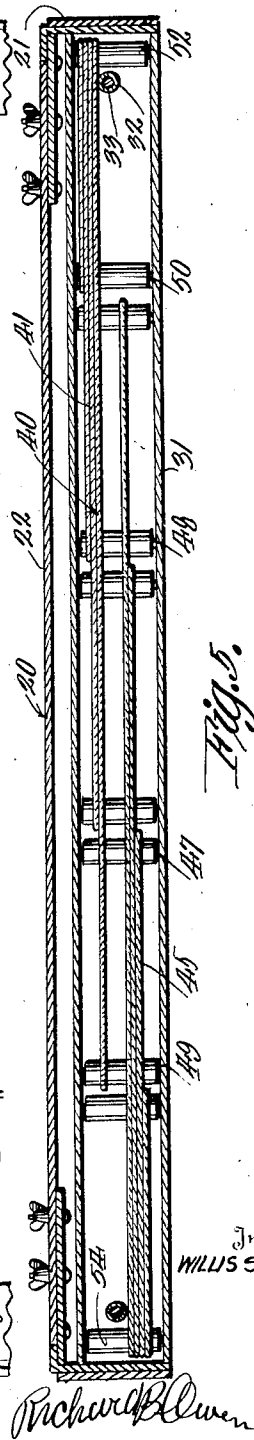
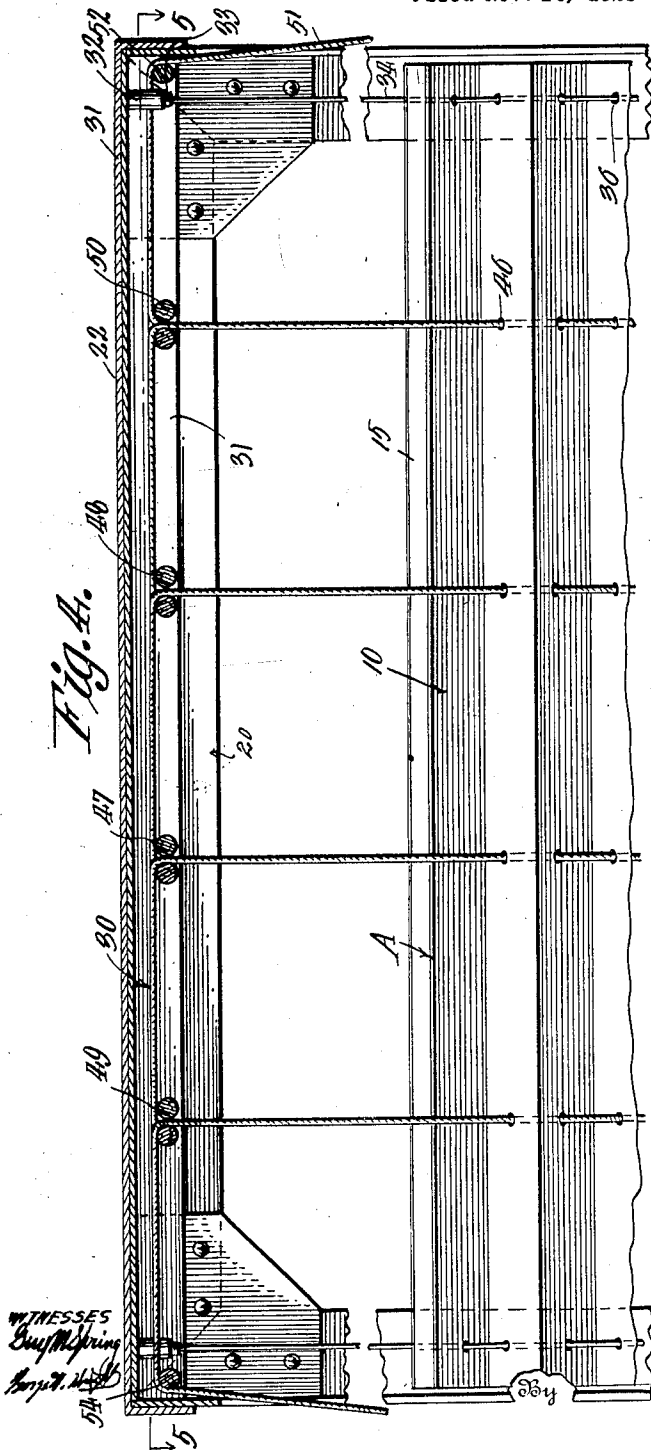
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UNITED STATES PATENT OFFICE.

WILLIS S. SHAFT, OF FARIBAULT, MINNESOTA.

SHADE.

Application filed November 14, 1923. Serial No. 674,761.

This invention appertains to shades and curtains and is an improvement on my prior Patents #1,038,005 and 1,289,281, issued to me September 10, 1912, and December 31, 1918, respectively.

The primary object of the present invention is to provide a curtain or shade for openings of a relative great width having novel means for supporting the curtain or shade at spaced points throughout the entire width thereof, said means forming the lifting device of the curtain, whereby the curtain will be raised at a plurality of spaced points simultaneously, thereby effectively preventing binding movement of the curtain or shade on its guiding means.

Another prime object of the invention is the provision of a plurality of lifting cords disposed at equidistant spaced points throughout the entire width of the curtain for raising the upper and lower portions of the curtain or shade and novel guiding means for said lifting cords, the plurality of lifting cords for the lower portion of the shade being attached to a single pull rope disposed at one side of the shade, and the plurality of lifting cords for the upper portion of the shade being attached to another single pull rope disposed at the other side of the shade.

A further object of the invention is the provision of novel means for forming the curtain or shade itself, so as to effectively insure the proper and easy folding of the shade during the raising or lowering thereof, the plaits of the shade being sewed on opposite sides forming effective hinges for said plaits.

A further object of the invention is the provision of novel means for mounting the shade in a supporting frame, whereby the shade and frame can be mounted as a single unit in the desired opening.

A still further object of the invention is to provide an improved shade or curtain of the above character, which will be durable and efficient in use, one that will be simple and easy to manufacture, and one which can be placed upon the market at a reasonable cost.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more specifically described, claimed and illustrated in the accompanying drawings, in which drawings:

Figure 1 is a front elevation of the improved curtain and shade.

Figure 2 is a vertical section through the same.

Figure 3 is a fragmentary rear elevation of the improved curtain or shade.

Figure 4 is an enlarged fragmentary side elevation of the shade showing parts of the frame and the supporting bar in section, illustrating the arrangement of the novel lift cords and the guide rollers therefor.

Figure 5 is a horizontal section taken on the line 5-5 of Figure 4 illustrating the arrangement of the novel lifting cords and the guide rollers therefor, and

Figure 6 is a detail horizontal section taken on the line 6-6 through the frame for the curtain or shade.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter A generally indicates the improved curtain or shade and B the casing of the opening in which the improved curtain or shade A can be associated.

The casing B can be considered of any character, as the improved curtain or shade A is adapted for a number of different uses, such as for windows, porches, and the like.

The improved curtain or shade A includes essentially the shade proper 10, the frame 20 for receiving the same, the means 30 for mounting the curtain 10 within the frame 20 and the means 40 for raising the curtain.

The curtain or shade proper 10 is preferably formed of some flexible material, such as herring bone weave coutil, although the curtain or shade proper 10 can be formed of canvas, or oiled or treated material to prevent moisture if so desired when the same is to be used on porches or the like. It is preferred to make the curtain or shade proper 10 out of a single strip or sheet of fabric and then fold the same in opposite directions transversely, as at 11 and 12 to form the plaits 13.

In order to insure the proper folding of the plaits during the raising and lowering movement of the shade and to prevent the plaits from losing their shape and to prevent undue wear at the fold of the plaits, each plait is sewed as at 14 or otherwise secured together. The stitches 14 are disposed alternately on opposite sides of the

shade or curtain proper 10 as can be clearly seen by referring to Figure 2 of the drawings. This forms an important feature of the invention.

5 The upper and lower ends respectively of the shade proper 10 are secured in any preferred way to hollow steel stiffening bars 15 and 16, which serve to hold the shade in proper position across an opening and as means for anchoring the lifting cords to the
10 curtain and for adding sufficient weight to the curtain to insure the automatic lowering thereof both from its upper and lower ends when the lifting means 40 of the curtain 10 is released.

The frame 20 can be formed of angle iron if so desired or pressed steel or wood and suitably painted to conform to the tone of the shade or curtain proper 10 and the casing
20 B with which the curtain is associated. As shown the frame 20 includes the longitudinally extending guide rails 21 which serve as guides for the side edges of the curtain and top and bottom rails 22 and 23. These
25 rails can be connected together and braced in any preferred way.

The means 30 for securing the shade or curtain proper within the frame 20 includes an upper case 31 formed of channel iron or
30 other material disposed in an inverted position. This case 31 extends transversely across the frame 10 and is secured to the upper rail 22 thereof in any desired way. The case 31 has secured adjacent to the oppo-
35 site ends thereof depending sleeves 32 in which are adjustably mounted threaded plugs 33 carrying rigid guide rods 34, which can be formed of brass if so desired. The extreme lower end of these guide rods 34 are detachably attached to retaining sockets 35
40 secured to the lower rail 23 of the frame. By referring to Figures 1 and 4 of the drawings, it can be seen that these guide rods 34 are arranged within the marginal edges of the side rails 21 of the frame. These guide
45 rods 34 are passed through properly spaced eyelets or openings 36 formed in the plaits of the curtain or shade proper 10. The guide rods are threaded through these open-
50 ings in such a manner, and these openings are so arranged, as to permit the plaits to slide on the guide and to lie in parallel relation to one another when the curtain or shade proper 10 is in its lowered folded position.

55 The means 40 for raising the curtain or shade proper 10 embodies a set of lifting cords 41 for the top of the curtain and a set of cords 45 for the lower portion of the curtain. The lifting cords 41 for the up-
60 per portion of the curtain 10 are four in number, as can be clearly seen by referring to the drawings and these four lifting cords are disposed at equidistant spaced points throughout the width of the curtain 10. The
65 lower terminals of the lifting cords 41 are

preferably knotted as at 42 and arranged within the hollow upper stiffening rod 15. The lifting cords 45 for the lower por-
70 tion of the curtain are also four in number and are threaded through suitable openings 46 arranged within the plaits 13 of the curtain or shade proper. These cords are arranged at equidistantly spaced points
75 throughout the entire width of the curtain and are threaded through the alternate plaits of the curtain. The extreme lower ends of the lifting cords 45 are preferably knotted as at 46' and secured within the lower stiffen-
ing rod 16.

It is obvious that by providing a plurality
80 of lifting cords 41 and 45 for the upper and lower ends of the curtain disposed at equidistant spaced points throughout the entire width thereof, a relative wide curtain can be
85 easily raised or lowered without the curtain binding within the frame or on the guide rods.

Arranged within the case 31 at spaced points is a plurality of pairs of rotatable spaced guide rollers 47, 48, 49 and 50. These
90 pairs of guide rollers extend transversely of the case 31 and are arranged directly above the points of connection of the lifting cords 41 and 45 with the stiffening bars 15 and 16 and the rollers of each pair are so
95 arranged that the lifting cords can be placed between the same and then over the same. The pairs of rollers 47 and 48 are arranged at equidistant points on each side of the vertical longitudinal center of the frame 20,
100 while the pairs of rollers 49 and 50 are arranged at equidistant points between the pairs of rollers 47 and 48 and the side rails 21 of the frame 20. The outer terminals of the lifting cords 41 for the upper end of the curtain or shade proper 10 are secured to a
105 single pull rope 51 which is trained about an end guide roller 52 rotatably carried by the casing 31 adjacent to one end thereof. The outer ends of the lifting cords 45 for the lower end of the shade or curtain proper 10 are secured to a single pull rope 53, trained
110 over a guide roller 54, which is secured to the case 31 adjacent to the end thereof which is opposite to the end supporting the roller 52.

Now by referring to Figures 4 and 5, it can be seen that the lifting cords 41 are trained about the roller of each pair of rollers 47, 48, 49 and 50 which are disposed at
120 the right of Figure 4, while the lifting cords 45 are trained about the other rollers of each of the pairs of rollers 47, 48, 49 and 50 disposed at the left of Figure 4.

Now it is to be noted that the lifting cords 41 are brought about one side of the sleeve 32 disposed adjacent to the roller 52, while the lifting cords 45 are disposed about the other side of the sleeve 32 disposed adjacent
125 to the single guide roller 54. Thus it can

be seen that the sleeves 32 also act as guide means for these lifting cords and thus hold the cords at one side of the case 31 and prevent the cords from interfering with each other. This also forms an important feature of the invention.

By pulling on the pull cord 51, it can be seen that the upper portion of the curtain or shade proper 10 will be lifted, while by pulling on the pull cord 53, the lower portion of the shade or curtain proper 10 can be lifted. This permits the effective adjustment of the curtain or shade proper 10. The pull ropes 51 and 53 can be detachably secured to suitable clips 57 secured to the frame 20 or casing B.

From the foregoing description, it can be seen that I have provided novel means for supporting a relatively wide curtain or shade at a plurality of spaced points throughout the entire width thereof, which act as means for permitting the even raising or lowering of the shade or curtain.

Changes in details may be made without departing from the spirit or the scope of this invention.

What I claim as new is:

1. A shade structure comprising a foldable shade, control cords therefor, a single channel iron adapted to be positioned at the top of a window frame in an inverted position with its open side toward the shade and of a length approximately equal to the width of the window frame, and sets of guide rollers supported by the flanges of said channel iron in spaced relation with each other and the side wall of the channel iron to confine said control cords which pass over said rollers.

2. A shade structure comprising a foldable shade, groups of control cords therefor, a channel member of a length substantially equal to and adapted to be arranged in an inverted horizontal position at the top of a window frame, and sets of guide rollers mounted at the open side of said channel member and spaced from the top wall of the latter to receive thereover said cords and direct the same through the open side of the channel member.

In testimony whereof I affix my signature.

WILLIS S. SHAFT.