April 27, 1943. L. C. WILLIAMS 2,317,660

VENETIAN BLIND

Filed Aug. 20, 1942 2 Sheets-Sheet 1

FIG. 1.

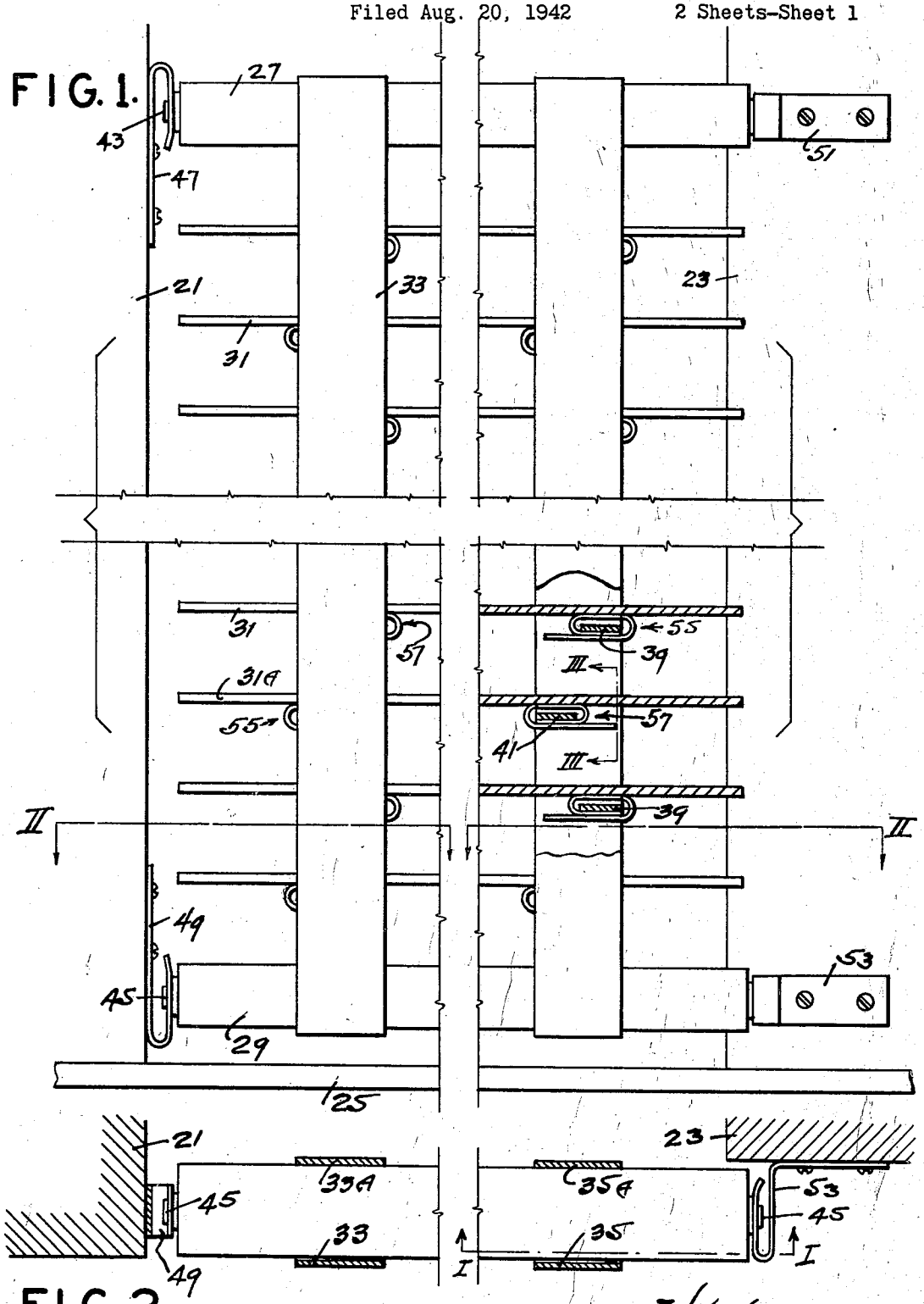


FIG. 2.

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Filed Aug. 20, 1942 2 Sheets-Sheet 2

FIG. 3.

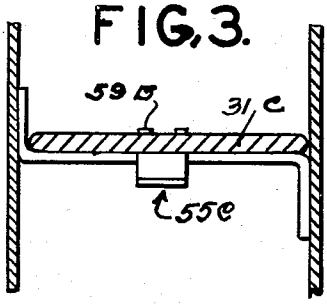


FIG. 4.

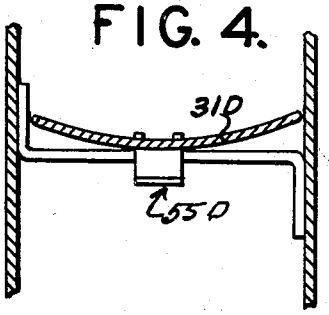


FIG. 5.

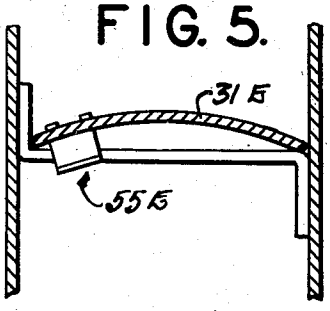


FIG. 8.

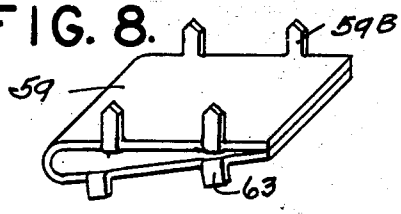


FIG. 6.

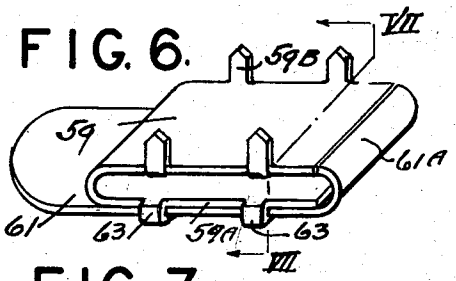


FIG. 9.

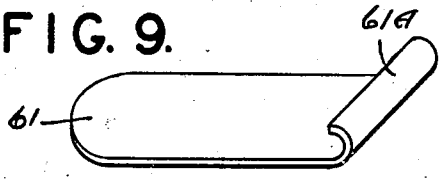


FIG. 7.

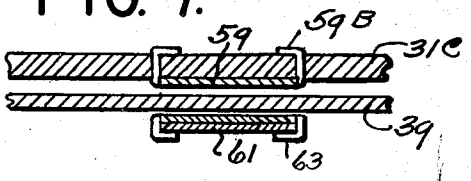


FIG. 10.

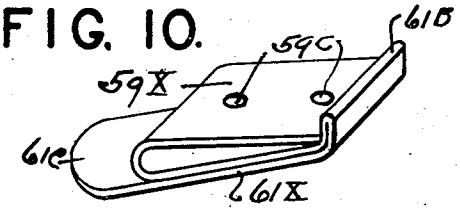


FIG. 12.

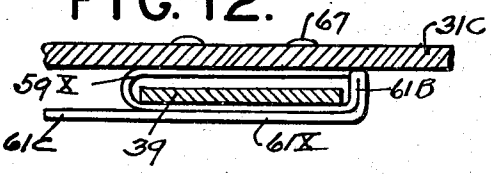


FIG. 11.

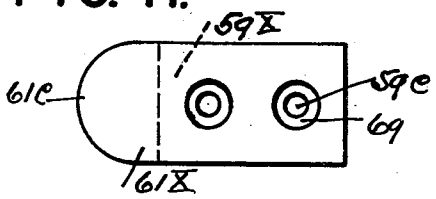


FIG 13

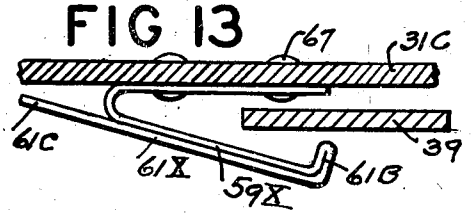
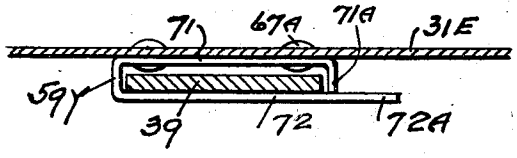


FIG. 14.



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UNITED STATES PATENT OFFICE

2,317,660

VENETIAN BLIND

Lisle C. Williams, Memphis, Tenn.

Application August 20, 1942, Serial No. 455,403

8 Claims. (Cl. 160—178)

This invention relates to improvements in slatted blinds of the so-called "Venetian" type in which the slats are supported by ladder tapes, as of heavy cloth or webbing, and particularly relates to means for detachably securing the slats to the cross tapes of the ladders.

The present invention makes use of the usual oscillatably supported upper, and complementary lower, rails and the usual ladder tapes extending therebetween.

The objects of the present invention are:

To provide simple and efficient means for detachably securing the slats to the cross tapes of the ladders;

To provide securing means which will prevent the slats being displaced in the direction of their length in the ladder tapes while providing freedom against binding engagement with the cross tapes during shift of the ladder tapes to effect rotational movement of the slats.

The means by which the foregoing and other objects are accomplished and the method of their accomplishment will readily be understood from the following specification upon reference to the accompanying drawings, in which:

Fig. 1 is a fragmentary front elevation showing upper and lower portions of a blind having slats supported by ladder tapes, a portion of the view being cut away in section, as on the line I—I of Fig. 2, to disclose the attaching feature of the present invention.

Fig. 2 is a corresponding sectional plan taken as on the line II—II of Fig. 1.

Fig. 3 is a sectional elevation, taken as on the line III—III of Fig. 1, showing the invention as applied to a flat wooden slat.

Figs. 4 and 5 are similarly taken views showing attachment of slats of arcuate cross section to the tapes, Fig. 5 illustrating the usual manner in which such slats are turned, and Fig. 4 an oppositely turned or inverted slat positioning.

Fig. 6 is a much enlarged perspective view of one form of attaching clip; and

Fig. 7 is a sectional elevation of the clip taken as on the line VII—VII of Fig. 6, showing a fragmentary portion of the slat to which the clip is secured and a fragmentary portion of the clip-engaged cross tape.

Figs. 8 and 9 show the two pieces used to make up the clip shown in Fig. 6.

Fig. 10 is a perspective view of a one piece form of clip; and

Fig. 11 is an inverted plan of the clip shown in Fig. 10.

Fig. 12 shows a side elevation of the clip of Fig. 10, and a fragmentary portion of a flat slat to which the clip is secured by rivets, the clip being shown closed over a cross tape.

Fig. 13 shows a corresponding view with the clips open to permit placing on or release from a cross tape.

Fig. 14 is a side elevation similar to Fig. 12, showing a further modified form of the clip attached to a slat and closed over a cross-tape.

Referring now to the drawings in which the various parts are indicated by numerals:

21 is one side frame of a window casing, 23 an opposite side frame, and 25 the window sill. The blind comprises a top rail 27, a bottom rail 29, slats 31, and ladder tapes supporting these slats in uniformly spaced relation, the spacing as usual being less than the slat widths so that the slats may be oscillatably shifted to overlapping relation and form substantially complete closure.

The ladder tapes include the usual side tapes 33, 33—A, 35, 35—A, in pairs with cross tapes 39, 41 for the support of the slats, the side tapes extending over and under the top and bottom rails respectively and being secured thereto, and the cross tapes 39, 41 being in usual stepped relation with respect to the side tapes. The top and bottom rails preferably have projecting pins 43, 45 respectively, which engage with brackets, as the brackets 47 and 49, if, as indicated in the left half of Fig. 1, the rails come between the side frames, or with a slightly different form of brackets 51, 53 if, as indicated in the right half of Fig. 1, the rails are forward of the side frame 23.

The present invention relates particularly to the means by which the slats 31 are secured to the cross tapes 39 and 41. Preferably each slat has two securing clips 55, 57, these clips being identical, and similar in detail preferably to one of the alternate shown in Figs. 3 to 13 inclusive.

The clips 55 at one end of the slats are closer to the end of the slat than are the clips 57 to the opposite end of the same slat, the difference in spacings from the end of the slat being equivalent to the amount the cross tapes are stepped, and the slats being alternately turned end for end as are the slats 31, 31—A, of Fig. 1, so that the clip 55 of the slat 31, engaging with the cross tape 39, will line the end of that slat up with the ends of the slat 31—A with the cross tape 41 engaging with the clip 57.

As shown in Figs. 3 and 4, the clips, as the clips 55—C and 55—D, may be secured along the respective longitudinal axes of the slats 31—C, 31—D, and the clip 55—E along a side edge of the

slat 31—E. It will be understood, however, that the clip might as readily have been secured along the center line of the slat 31—E, or any of the others secured as is the clip 55—E along a side edge.

The clips each comprise a resilient part 59 of deep, substantially U-shape, and a handle part 61 which is solidly secured to one leg 59—A of the U part, as by lugs 63, here shown as integral with the leg 59—A of the U and engaging with the handle part to effect the securing, but which may as readily be integral with the handle part and engaging with the U part.

The U part 59 is made as of thin spring metal, plastic, or other suitable elastic material and is biased to close the outer ends of its legs together. The handle part 61 extends beyond the bight of the U part to form a depresser grip and at the ends of the U legs is upwardly bent to form a closure end 61—A, which may be substantially similar to the bight end of the U.

It will be understood that it is immaterial whether the clip be made from a single piece of material or a number of pieces, and in Figs. 10 to 13 the U part 59—X and handle part 61—X of the clip are shown as integral. The clips may be attached to the slats in any desired manner.

In Figs. 6, 7 and 8 the clip is shown, as provided, with prongs 59—B by means of which this attachment may be secured, whether to the flat slat 31—C or arcuate slats 31—D or 31—E.

In Figs. 10 and 11 the clips are shown provided with holes 59—C through which rivets 67 (Figs. 12 and 13) may be used as the attaching means. Where rivets are used it is preferable that the handle part 61—X of the handle adjacent leg of the U 59—X, have larger apertures 69 through which the rivets may be inserted.

The depth of the end closure 61—A, or 61—B, is such that when the clip is secured to the slat the two legs of the U will be held in substantial parallelism, that is, in the position shown in Figs. 6 and 12, and an enclosure be formed for the cross tape 39 or 41, as the case may be, which will permit free movement of the slats with reference to the length of the cross tape and, therefore, prevent binding in any position of closure adjustment of the blind. The length of the clip between its U end and the handle closure end 61—A or 61—B, as the case may be, is such, as most clearly shown in Fig. 12, as to provide a clearance between these end portions and the side edges of the cross tape which will prevent yet will accomplish substantially accurate alinement of the ends of the slats relatively to each other.

To remove or replace the slat the grip 61—C of the handle (Fig. 13) is pressed toward the slat, thus springing the end 61—B (or 61—A, as the case may be) of the clip open and permitting the cross tape to be moved into the clip, or outward therefrom.

In Fig. 14 the clip is shown as a single piece, U, 59—Y, having one leg 71 attached as to the thin slat 31—E, as by rivets 67—A, the leg having an outwardly bent end portion 71—A, which extends into contact with the other leg 72. The leg 72 extends beyond the outwardly turned end portion 71—A to form a grip 72—A by which the leg 72 may be raised to remove the clip from or replace it on the cross-tape 39. The clip is resilient and is biased to close the leg 72 against the leg end portion 71—A.

It will be understood that the primary idea involved in the present invention is to provide a tape attaching means which is readily attached or detached, yet is not easily accidentally disengaged and which does not effect gripping engagement with the tape, nor is it readily distortable to effect such gripping, so that at all times the slat may be free for adjustment as the blind is being opened or closed.

I claim:

1. In a Venetian blind, having a ladder tape including a cross-tape and a slat adapted to rest on said cross-tape, means for detachably securing said slat to said cross-tape, including a part disposed in substantial parallelism with said slat and spaced therefrom to form an elongated slot adapted to loosely receive said cross-tape, said part having one end inwardly bent into abutting relation to said slat to form a closure for one end of said slot and establish said spacing; means resiliently securing the opposite end of said part to said slat, said means including a portion spaced slightly in excess of said cross-tape width from the first said end, forming a closure for said opposite slot end, and means secured to said part and continuing beyond said secured end, forming a grip manually depressible for separating said abutting end from said slat to permit removal or insertion of said cross-tape.

2. In a Venetian blind, having a ladder tape including a cross-tape and a slat adapted to rest on said cross-tape, means for detachably securing said slat to said cross-tape, including a part disposed in substantial parallelism with said slat and spaced therefrom to form an elongated slot adapted to loosely receive said cross-tape, said part having one end inwardly bent into abutting relation to said slat to form a closure for one end of said slot and establish said spacing, means, including a resilient portion, spaced slightly in excess of said cross-tape width from said end closure, forming a closure for the opposite end of said slot, securing said opposite end of said part to said slat, and means secured to said part and continuing beyond said secured end, forming a grip manually depressible for separating said abutting end from said slat to permit removal or insertion of said cross-tape.

3. In a Venetian blind, having a ladder tape including a cross tape and a slat adapted to rest on said cross-tape, means for detachably securing said slat to said cross-tape, including a part disposed in substantial parallelism with said slat and spaced therefrom to form an elongated slot adapted to loosely receive said cross-tape, said part having one end inwardly bent into abutting relation to said slat to form a closure for one end of said slot, means, spaced slightly in excess of said cross-tape width from said end forming a closure for the opposite end of said slot and resiliently securing said part to said slat, said means being biased to urge the first said end into abutting relation, and means secured to said part forming a grip manually operable for separating said abutting end from said slat to permit removal or insertion of said cross-tape.

4. In a Venetian blind, having a ladder tape including a cross tape and a slat adapted to rest on said cross-tape; means for detachably securing said slat to said cross-tape comprising a clip rigidly attached to said slat, said clip including a U-shaped part of resilient material, having legs spaced to loosely receive a said cross-tape flatwise therebetween, and of length substantially equal to said cross-tape width, a handle part, rigidly secured to said U part and having an inwardly bent portion forming a closure for the open end of said U, said handle part extending

oppositely beyond the bight of said U to form a depresser grip, said U part being biased to hold said inwardly bent handle portion in abutting relation with said slat.

5. In a Venetian blind, having a ladder tape including a cross-tape and a slat adapted to rest on said cross-tape, means for detachably securing said slat to said cross-tape comprising a clip adapted for rigid attachment to said slat, said clip including a U-shaped part of resilient material, having legs of length and spacing to loosely receive a said cross-tape flatwise therebetween, one of said legs being extended beyond the other, inwardly bent to form a closure for the open end of said U, and reversely folded along itself to form a handle part extending oppositely beyond the bight of said U to form a depresser grip, said U part being biased to hold said inwardly bent leg portion in abutting relation with said slat.

6. In a Venetian blind, having a ladder tape including a cross-tape and a slat adapted to rest on said cross-tape, means for detachably securing said slat to said cross-tape comprising a clip adapted for rigid attachment to said slat, said clip including a U-shaped part of resilient material, having legs of length and spacing to loosely receive a said cross-tape flatwise therebetween, a first of said legs being bent to form a closure for the open end of said U, and the other of said legs extending beyond said first end, said U being biased to effect closure contact of said ends.

7. In a Venetian blind, having a ladder tape including a cross-tape and a slat adapted to rest on said cross-tape, means for detachably securing said slat to said cross-tape comprising a clip adapted for rigid attachment to said slat, said clip including a U-shaped part of resilient material, having legs of length and spacing to loosely receive a said cross-tape flatwise therebetween, a first of said legs being bent to form a closure for the open end of said U, and the other of said legs extending at least to substantial contact with said first end.

8. In a Venetian blind, having a ladder tape including a cross-tape and a slat adapted to rest on said cross-tape, a substantially U-shaped clip secured to said slat, said clip having legs spaced to receive flatwise therebetween a said ladder cross-tape and of length to house said tape, one said leg being abruptly bent at its outer end toward the other thereof to provide a closure for the outer end of said U, said closure end being of depth substantially equal to that of the opposite end of said U.

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