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B. WALKER

2,661,058

VENETIAN BLIND PARTS

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FIG. 1.

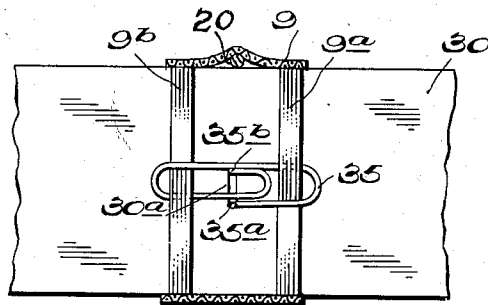


FIG. 2.

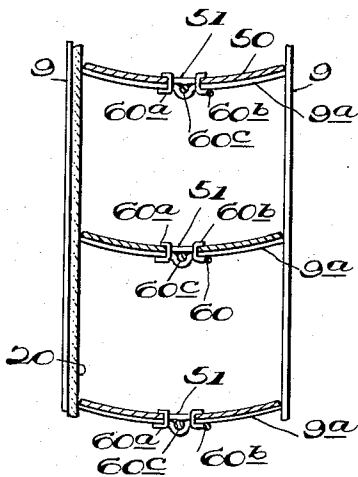
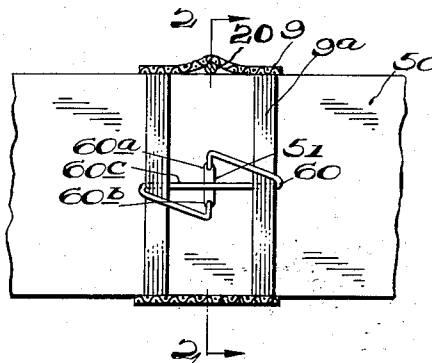


FIG. 3.



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VENETIAN BLIND PARTS

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Original application December 31, 1947, Serial No. 794,851, now Patent No. 2,576,160, dated November 27, 1951. Divided and this application October 31, 1951, Serial No. 254,074

3 Claims. (Cl. 160—178)

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This invention pertains to improvements in Venetian blinds, particularly to blinds in which the lifting cords or tapes or other means of lifting the blind do not go through holes in the slats to secure them against lateral displacement and where the lifting cords or tapes, etc., operate between the slats and the side members of the ladder tape as described in my application Serial Number 794,851, filed December 31, 1947, and which has matured into Patent No. 2,576,160, November 27, 1951, this application being a divisional application thereof. A particular application of this invention is in connection with Venetian blinds in which greater lateral stability of the slats relative to the ladder tape is desired in order to keep the ends of the slats in end alignment in the blind or to keep the slats from turning over in case the different sides of the slats are painted different colors or to keep the crown of the slats all in one direction in case of crowned metallic or composition slats.

This invention pertains primarily to spring clips made of wire or other suitable material adapted to be normally supported by the cross members of a Venetian blind ladder tape or a flexible slat spacing mechanism. These spring clips engage one or more apertures in the slats or they engage the slat adjacent to one or more edges of the slat as well as engagement adjacent to the aperture. Such engagement with the slat provides lateral stability of the slat relative to the slat supporting cross member. A further object of the invention is to provide a spring clip of a construction which can be readily secured to or detached from engagement with the cross members which support the slats in the Venetian blind. Another feature of the invention is to provide a spring clip of very inexpensive construction which may be formed of wire or other suitable material and is adapted for engagement on staggered ladder rungs or cross members and adapted to engage apertures in the slats which are midway between the width extremities of the side members of the ladder tapes so that only single routing of the slats is necessary for the engagement. Another object of the invention is to provide lateral stability of the slats by a spring clip carried on the ladder spacing elements, the engagement with the slat being formed in a positive manner to be more secure than the snap on type of engagement. In this invention, in some forms, hooked ends of spring clips engage the edges of the slats at the apertures, thus providing a very easily detachable and yet very secure holding of the slat relative to

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the ladder tape or cross members of the ladder tape. An important feature of this invention is the providing of a spring clip which can be readily used to convert conventional Venetian blinds having ordinary route holes for the passage of the lift cords through the slats to the removable type of slat construction wherein the lift cord can be changed and run over the edge of the tilt rail with or without a notch in a manner shown in my United States Patent No. 2,200,349 and then down between the ladder rungs at the opposite sides of the ladder tapes to be secured to the bottom rail. This method would leave no stability in a lateral direction to the slats unless the blind were inside hung so that the slats could secure stability from the window frame or other end guided means known in the Venetian blind art. The spring clips shown in this invention are readily attached to the staggered ladder rungs and engage the slat adjacent to the edges of the route hole or could engage one outside edge of the slat and an edge at the route hole to provide lateral stability of the slat relative to the cross tape to hold the ends of the slat in alignment. The spring clips shown in this invention are very inexpensive, easily attached to the ladder rung, grip the slat securely, and are readily detachable from the slat without the aid of tools for the easy removal of the slat. A further object of this invention is to provide means whereby Venetian blind slats can be readily removed for cleaning, repairing, replacement or other uses merely by manually unclasping the spring clip and sliding the slat out from the Venetian blind tapes, it only being necessary to secure the slat adjacent to one tape though any number of such clips from one to a number equalling the number of slats may be used at other tapes or slat spacing elements to keep them in alignment with the main tape used for stabilizing all of the slats. A further object of this invention is to provide an exceedingly inexpensive and easily manufactured method of securing the slats, having an aperture in a given position relatively central to a ladder tape, to cross members on which the slats rest, regardless of whether they are dual or staggered, are of thread, woven or metal construction.

Other advantages will be pointed out in the accompanying description and claims.

This invention is illustrated by way of example in the accompanying drawings.

Figure 1 is a bottom plan view from underneath the slat, partly cut away, showing one form of the invention in which double ladder rungs are

used and a spring clip similar to a paper clip is employed for engaging the aperture of a slat.

Fig. 2 is a vertical cross section of another form of the invention as observed in the plane of line 2-2 on Fig. 3.

Fig. 3 is a transverse sectional view of the structure of Fig. 2 as observed from the bottom of one of the slats.

In all figures, like numerals of reference refer to corresponding parts in the drawings.

In Figure 1, I have shown a slat 30, a ladder tape with side members 9 and double ladder rungs 9a and 9b. These ladder rungs may be of the spring type, woven type, plastic type, metal or any other suitable cross members known to the Venetian blind industry or such as may be developed in the future for supporting slats in spaced relationship. A spring clip 35 is formed somewhat in the same general shape as a conventional paper clip except that the ends 35a and 35b are suitably formed in hooks somewhat similar to ends 60a and 60b of Figure 2. These end portions 35a and 35b grip the edges of a small aperture 30a formed in slat 30. The paper clip type of form for the spring clip is very simple to make and gives a construction which is readily engageable with double ladder rungs and yet provides sufficient spring motion for the ends so that good engagement with the aperture in the slat by the hooked ends of the clip is readily obtained. The self-locking feature may be provided by the ends of the clip in line with each other so that engagement or disengagement is secured by having one portion of the wire pass over another during engagement or disengagement.

In Figures 2 and 3 I have shown a ladder tape 9 with cross rungs 9a and a spring clip 60 hooked over the cross rungs 9a of the ladder tape with the hooked ends 60a and 60b engaging the opposite edges of the slat adjacent to the aperture 51. Straight central section 60c of the spring clip 60, in this form of the invention, passes across the center portion of the aperture 51 and forms the engagement with the cross members or the ladder rung 9a. This clip is exceedingly cheap to manufacture, gives a very positive hold of the slat for positive lateral stability relative to the ladder tape and can be most easily attached to the ladder rungs which being of a flexible nature can be compressed together or one end hooked and one or both sides deflected for hooked engagement to the other side. The side members 9 of the ladder spacing element or tape hold the cross rungs in such a position as to form suitable support for the spring clip whether the slat is in position or has been removed for cleaning. Though these views all show the spring clip as engaging the slat at opposite edges of an aperture in the slat, it is obvious that a very slight modification of the spring clip would make it suitable for engaging the slat at one edge and at an aperture. The engagement of the slat at the edge could be at the unnotched edge or in a notch at the edge suitable for nesting the lifting cord.

The spring clips as shown in all of the views are very easy to manufacture, may be made of wire or other suitable material, are easily engaged with the cross rung of the ladder spacing element or ladder tapes which support said spring clips when the slats have been removed for cleaning or other purposes. The spring clips as shown are highly advantageous for converting conventional Venetian blinds to the removable slat construction in a manner previously stated by run-

ning the lift cords 20 down the outer edges of the slats as shown in my issued Patent No. 2,200,349 providing lateral stability by engagement of the slat through the conventional route hole by the spring clips as shown in the figures. Throughout these figures the apertures in the slats have been shown substantially midway between the widths of the side members of the ladder tapes or ladder spacing elements. It however is obvious that one or more apertures may be used and the two ends of the clips may each engage a separate aperture or an aperture and an edge of a slat, or that the apertures may be located more nearly in line with the cross members on which the slats rest and the spring clips engage separate apertures depending on whether they are attached to a right or a left cross rung. The spring clip form shown does not require crossing or doubling of the wire thickness under the slat and therefore reduces the slat pile when the blind is raised.

I do not wish in any way to limit myself to the exact details or mode of operation set forth in this specification and drawings, for it will be obvious that wide departure may be made in the way of details without departing from the spirit and scope of my invention which is set forth in the following claims.

I claim as my invention:

1. In a Venetian blind, a slat provided with a slot intermediate the opposite side edges thereof, a ladder tape including opposed side members and a pair of spaced parallel cross rungs, and a spring wire clip for removably securing said slat to said cross rungs including inwardly facing loop portions for extension about said rungs from the outer edges thereof, and said clip further including hooked ends intermediate said loop portions removably engageable with opposite edges of said slot.

2. The structure according to claim 1, wherein said clip comprises opposite parallel side portions intermediate said loop portions, one of said side portions comprising a wire length projecting inwardly from each of said loop portions in offset parallel relation, one of said hooked ends being provided by the terminal of one of said wire lengths, and the other wire length provided with a loop portion facing the respective rung receiving loop portion, and the other of said hooked ends being provided by the terminal of said last named loop portion.

3. The structure according to claim 1, wherein said clip comprises a straight portion interconnecting said loop portions at corresponding sides thereof, and other straight portions projecting inwardly toward a plane normal to the intermediate portion of said first straight portion from the opposite sides of said loop portions and being in diverging relation to said first straight portion toward said plane, and said hooked ends being provided by the terminals of said last named straight portions.

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