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VENETIAN BLIND SLAT STRUCTURE

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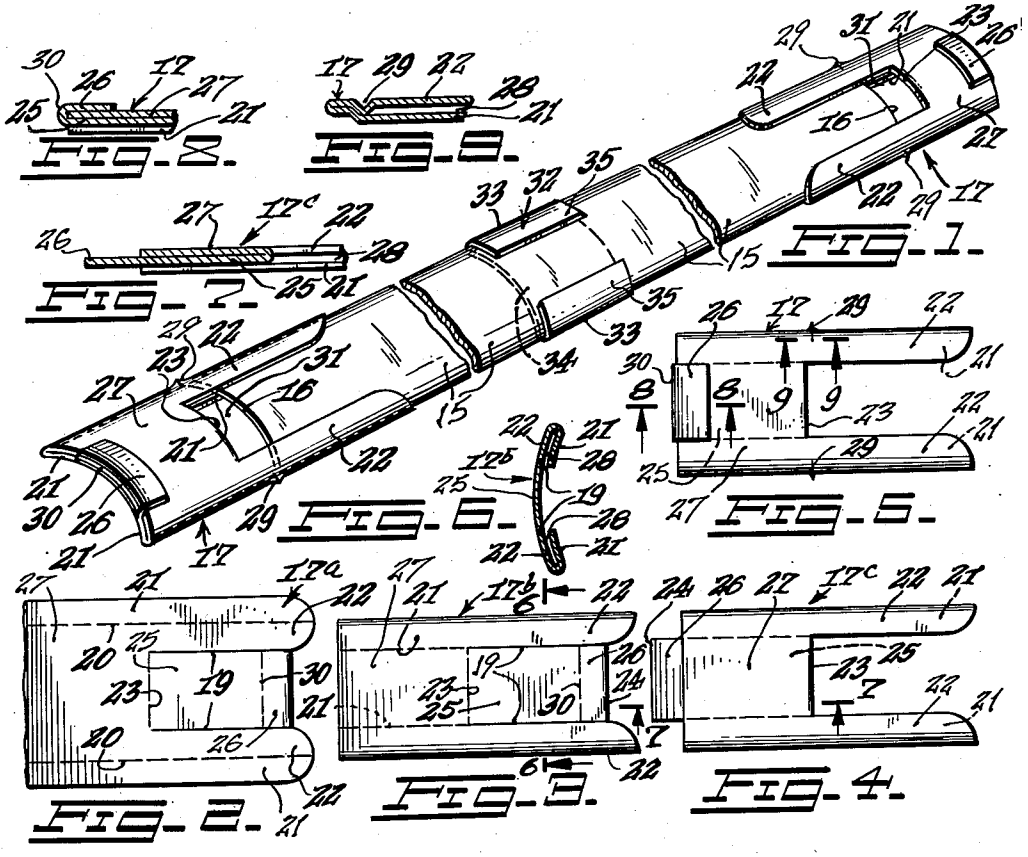


FIG. 1.

FIG. 2.

FIG. 8.

FIG. 9.

FIG. 6.

FIG. 5.

FIG. 2.

FIG. 3.

FIG. 4.

FIG. 10.

FIG. 11.

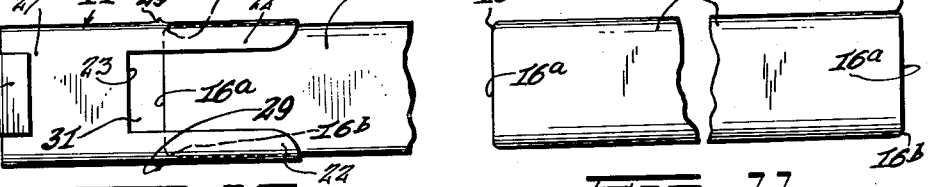


FIG. 12.

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VENETIAN BLIND SLAT STRUCTURE

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1 Claim. (Cl. 160—173)

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This invention relates to new and useful improvements in Venetian blind slats, and, more particularly, the aim is to provide a novel and valuable structure for such a slat characterized by the inclusion of an improved combination of separable parts.

An object of the invention is to provide a Venetian blind slat structure the main member of which can be constituted as is an ordinary Venetian blind slat, that is, which can be virtually perfectly rectangular in outline, as thin as or even thinner than the usual such slat, laterally arched when desired, and smooth surfaced all over both faces, yet which, unlike the ordinary Venetian blind slat, is not weakened by having cut therethrough the familiar slots customarily present for the passage therethrough of the well-known lift cords. Not only is this new slat member not weakened by slottings thereof, but it is also not locally weakened at its ends, since these ends virtually extend rectilinearly across the slat, due to the fact as above stated that the slat is virtually perfectly rectangular in outline.

Another object of the invention is to provide, in combination with said main slat member, and for participation in the new Venetian blind slat structure as elements complementary to said main slat member, a pair of like end fitments for dependable yet readily detachable engagement with the end portions of said main slat member, whereby when said fitments are attached slots for the lift cords are established and when said fitments are detached the said main slat member together with said fitments are all bodily separated and the main slat member may be removed for cleaning. The said main slat may also be covered by a suitable fabric or any other removable decorative covering.

A further object of the invention is to provide, for use in further combination with said main slat member, especially when the latter is very long and/or it is desired to have the same made of an exceptionally thin metal or plastic sheet material, a readily attachable auxiliary fitment adapted to be slipped onto and slid along the main slat member for acting as a stiffener means to combat any tendency of the main slat member toward longitudinal droop.

Still a further object of the invention is to provide said like end fitments of such construction that, while bent up from a single sheet material blank, as a thin sheet metal one, waste of blank material is minimized because the blank is substantially rectangular in outline.

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Yet another object of the invention is to provide said like end fitments as just above explained, and to have a lift-cord engaging portion of such a fitment made smooth by a line of bend of one part of the fitment blank over another part thereof, and attain other structural advantages in the fitment as will be made clear hereinafter.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claim in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a top perspective view, showing one now favored embodiment of the improved Venetian blind slat structure of the present invention, with the slat member shown broken away at two places.

Fig. 2 is a plan view of a blank of sheet material slit along two parallel lines to provide a tongue-like central portion at one end, with various fold lines indicated in dotted lines; said blank for being formed to provide either of the two like end fitments shown at opposite ends of Fig. 1.

Fig. 3 shows the said blank after a first pair of folding operations are performed.

Fig. 4 shows the said blank after a second folding operation is performed.

Fig. 5 shows the said blank after a third folding operation is performed, and after, following completion of said third folding operation, a pair of indenting operations are performed; so that now the blank is fully transformed into a fitment like the two fitments shown at the opposite ends of Fig. 1.

Fig. 6 is a transverse section, taken on the line 6—6 of Fig. 3.

Fig. 7 is a fragmentary longitudinal section, taken on the line 7—7 of Fig. 4.

Fig. 8 is also a fragmentary longitudinal section, but with this taken on the line 8—8 of Fig. 5.

Fig. 9 is a fragmentary longitudinal section, taken on the line 9—9 of Fig. 5.

Fig. 10 is a top plan view of the left-hand end portion of the slat structure shown in Fig. 1, with the slat member virtually instead of actually perfectly rectangular in outline.

Fig. 11 shows the entirety of the slat member

of Fig. 10, broken away at a point along its length.

Fig. 12 is a top plan view, showing another now favored embodiment of the improved Venetian blind slat structure of the invention, with the slat member shown broken away in one place.

Referring now to the drawings more in detail, and first to Figs. 1–11, the slat member illustrated in Fig. 1 and designated **15** is actually perfectly rectangular in outline, having ends **16** which are rectilinear from end to end as well as having a general direction of extension which is perpendicular to the sides of the slat member; while the slat member shown in Figs. 10 and 11 and designated **15a** is virtually perfectly rectangular in outline, because having ends **16a** which are rectilinear from end to end except for corner roundings **16b**—which roundings, being wholly convex, serve as strengthening or anti-split elements rather than otherwise in regard to the end portions of the slat member.

Also, it will be noted that each of the slat member **15** and the slat member **15a** is smooth surfaced all over both its faces, and that each of said slat members is of uninterrupted expanse all over.

Two like fitments **17** are provided for telescopic engagement with and frictional securement to the two end portions of the slat member.

These fitments, below called the end fitments, are each made from a single blank **17a** (Fig. 2) of thin sheet material, preferably a very thin sheet metal, as one of the fairly resilient yet fully yieldingly bendable aluminum alloys.

Said blank is substantially rectangular in outline, having two parallel slits **19**.

Following bending of the blank along the two lines **20** (Fig. 2), to dispose the blank subdivisions **21** below the blank subdivisions **22**, there is obtained the structure shown in Figs. 3 and 6 and there marked **17b**.

Next, following bending of the blank along the line **23**, to swing under and through 180° a tongue-like subdivision of the blank bounded by said line **23**, the slits **19** and a straight edge **24** of the blank, there is obtained the structure shown in Figs. 4 and 7 and there marked **17c**. Said tongue-like subdivision, it is to be noted, is made up of a main portion **25** and a lesser portion **26**.

It will be observed that said structure **17c** now has a pair of legs of U-shaped cross-section, with each such leg where it projects beyond the fold line **23** made up of a pair of blank subdivisions **21** and **22** and with each such leg elsewhere along its length made up of a blank subdivision **21** and a side marginal portion of a plate-like main blank subdivision **27**. Said subdivision **27** is, as so far completed, of two-ply thickness, the under ply being comprised in part of the main portion **25** of said tongue-like subdivision of the blank and in part of portions of the lengths of both the blank subdivisions **21**.

The bends along the lines **20** are made in such manner as to provide all along the length of each of these bends a groove **28** of such slightly less width than the thickness of the slat member as to predetermine that when an end portion of the slat member is inserted into such grooves a good frictional grip will be set up between the slat member and the end fitment carrying said grooves.

Indents are made across the blank subdivisions **21** at the locations indicated at **29** in Figs. 5 and 9, to provide limiting stops as indicated in Fig. 1

against more than the prevised extent of telescopic engagement between an end portion of the slat member and an end fitment applied to that end of said slat member.

Upon making said indents, and bending over along the line **20** and through 180° said lesser portion **26** of said tongue-like subdivision of the blank, to dispose said lesser portion **26** and clench down the same as shown in Figs. 5 and 8, and squeezing each subdivision **22** up flat against the under side of said plate-like main subdivision **27** of the blank as shown in Fig. 9 along the length of said subdivision **22** from an indent **29** to the end of said subdivision **22** now adjacent to the bend line **30**, there is provided the structure shown in Fig. 5.

Said structure of Fig. 5 is also marked **17**; because said structure is one of which either of the fitments **17** is a replica. This being so, the same reference numerals as are used in Figs. 2–9 are appropriately applied to certain of the parts as seen in Fig. 1.

As will be noted, thicknesses are exaggerated in Figs. 1 and 6–8. Actually, a fitment **17**, even at the three-ply thickness thereof at the clenched over blank subdivision **26**, is very thin. For instance, the presence of said subdivision **26** will not ordinarily be visible even at close examination.

Yet the legs **21**—**22** are stiff and strong, due to their U-shaped cross-section, and the remainder of a fitment **17** is also stiff and strong, due to its three-ply construction at the clenched over blank subdivision **26** and its two-ply construction elsewhere all over the same.

With the fitments **17** applied to the end portions of the slat member **15** as shown in Fig. 1, lift-cord slots **31** are established; these slots extending widthwisely of the slat structure, and with one side of each slot provided by a part of the end edge of the slat member and with the opposite side of each slot provided by the edge of the fitment resulting from the bend along the line **30**. Said line **30** being a bend line, it will be laterally rounded. Also, it will be a matter of trifling expense to round the end edges of the slat member **15**, pursuant to the common practice in thus finishing off the end edges of conventional Venetian blind slats. Thus the lift cords passing through the slots **31**, while never touching the ends of said slots, may from time to time touch the sides of said slots and engage said sides while moving relative thereto without any scraping effect on the lift cords.

In Fig. 10, the end fitment there shown is also designated **17**, as it is exactly like the end fitments **17** of Fig. 1. This being so, the same reference numerals **26**, **29** and **31** as are used in Figs. 1–9 are appropriately applied to certain of the parts as seen in Fig. 10.

The aforesaid stiffener fitment is as a whole designated **32**. The same is desirably made of the same sheet material stated hereinabove to be preferable for the making of an end fitment **17**. The fitment **32**, it will be noted, is also most economical to provide, because made of a blank of substantially rectangular cross-section; said blank being bent along two parallel lines **33** to present a main plate-like central portion **34** and two like marginal portions **35** bent toward each other as shown to provide mutually facing grooves for snugly yet slidably embracing the two side marginal portions of the slat member **15**.

Referring to the modified Venetian blind structure of Fig. 12, said structure is shown as in-

corporating a slat member 15' like the slat member 15, and two like slip-on end fitments 36. Each of the fitments 36, made of a single blank of substantially rectangular outline, comprises a main central plate-like portion 37 and two like marginal portions 38 bent over toward each other as shown to provide mutually facing grooves similar to the grooves 38. Indents 39 similar to the indents 29 are applied as shown. Located relative to said indents as illustrated is a lift-cord slot 40. Then, with the fitments 36 telescopically engaged with the opposite end portions of the slat member 15' as in Fig. 12, that is, until the ends of said slat member are stopped by the indents 39, the slots 40 are properly positioned along the length of the slat structure 36—15'—36.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claim.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

A slat structure for a Venetian blind, comprising an elongated main slat member, and a pair of fitments each engaged with an end portion of said member in telescoping relation therewith, each such fitment having at its outer end a plate-like portion and having extended from the inner side of said plate-like portion a pair of legs of U-shaped cross-section to provide parallel grooves along said legs, said grooves facing each other and having their bottoms spaced apart a distance equal to the width of the said slat member, an indent along the length of at least one of such grooves to limit the extent of telescopic overlap between said legs and the adjacent end portion of the slat member, said slat structure near each of its opposite ends having a lift-cord slot, each fitment being so shaped and on each fitment said indent being so located that when said fitments are fully engaged with the opposite end portions of said slat member each of said slots is partially bounded by an end of said slat member, each of said fitments being bent up from a single blank of sheet material, each of said blanks being substantially rectangular in outline, and in the case of each of said blanks said plate-like portion of the fitment being at one end of the blank, said legs of the fitment being extended along both opposite sides of the blank with each leg partially projected beyond said plate-like portion, and a tongue-like portion continuing from the end of said plate-like portion located between the projected ends of said legs, said tongue-like portion being bent to extend beneath said plate-like portion and thereby give said plate-like portion a two-ply thickness and to establish such bend line of said tongue-like member as the other side of the lift-cord slot partially bounded as aforesaid by an end of said slat member.

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