

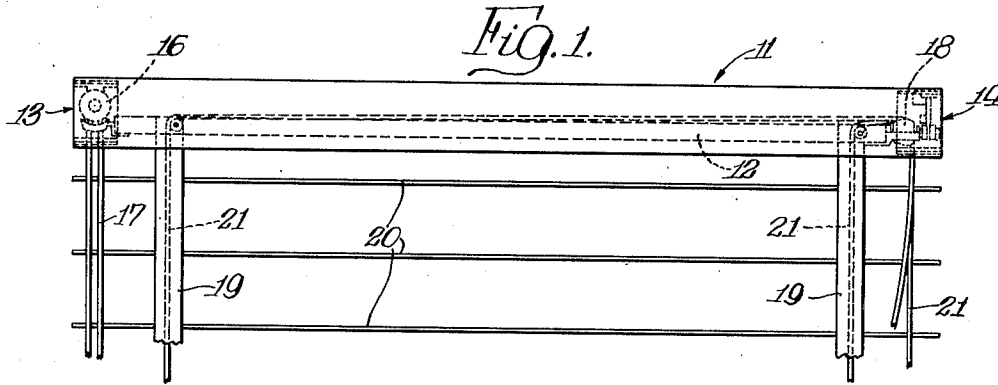
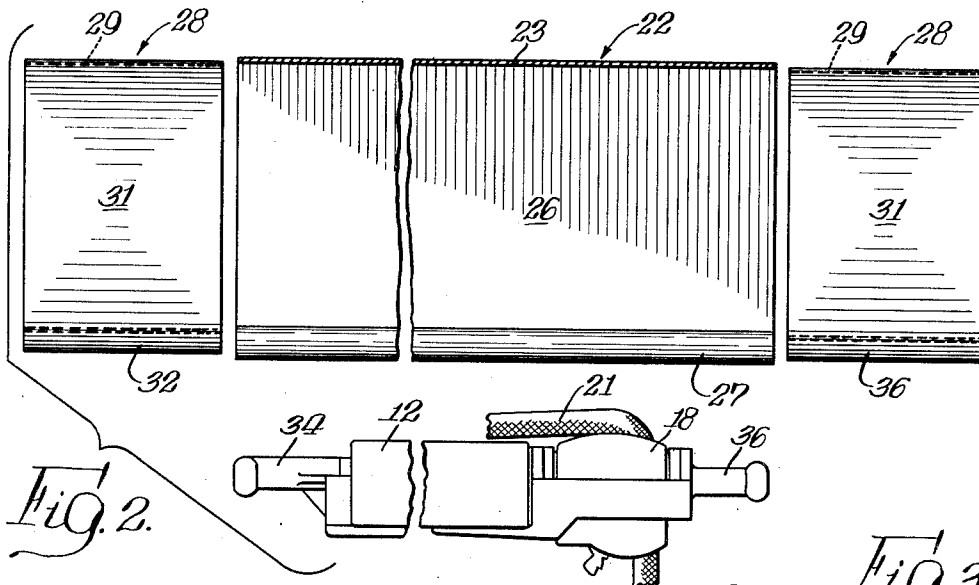
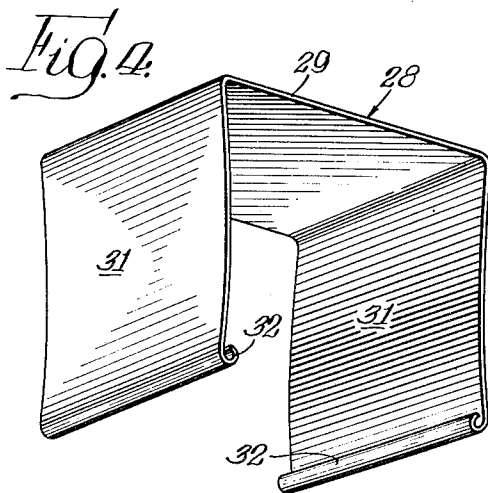
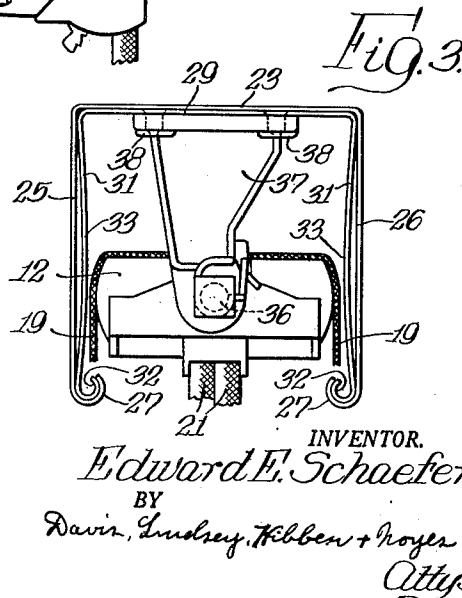
Sept. 15, 1953

E. E. SCHAEFER

2,652,113

VENETIAN BLIND HEAD RAIL ASSEMBLY

Filed Oct. 29, 1949



INVENTOR.
Edward E. Schaefer,
BY
Davis, Lindsey, Hibben + Rogers
Attys.

UNITED STATES PATENT OFFICE

2,652,113

VENETIAN BLIND HEAD RAIL ASSEMBLY

Edward E. Schaefer, Oak Park, Ill.

Application October 29, 1949, Serial No. 124,406

7 Claims. (Cl. 160-177)

1

2

This invention relates to an improved Venetian blind construction and more particularly to a novel head rail assembly for Venetian blinds.

The conventional Venetian blind comprises an upper horizontal rail and a bottom horizontal rail having two or more depending ladder tapes extending therebetween for supporting the slats of the blind. The upper horizontal rail is known as the tilt rail and, as the name implies, is tiltably mounted on suitable pivots or supports with a cord-operated tilting mechanism being operatively connected at one end of the tilt rail for opening or closing the blind. Heretofore, it has been common practice to provide an uppermost supporting head rail having the tilt rail supports, tilting mechanism, and other blind operating mechanism fastened directly thereto and extending downwardly therefrom with the opposite ends of the head rail being supported on suitable brackets affixed to the window, door, or other frame structure upon which the blind is installed. In most instances, the head and tilt rails and the operating mechanism of the blind associated therewith have been concealed from normal view by means of a removable valance supported by portions of the head rail brackets.

Thus, the Venetian blinds heretofore extensively employed have required the use of a plurality of separate parts including a head rail, a valance, and a pair of special brackets for supporting the head rail and valance. In addition, it has been necessary for the Venetian blind manufacturer to construct the head rail and valance to fit each particular installation and to rivet or otherwise fixedly secure the operating mechanism in the desired location on each head rail with the result that in many cases a large inventory of different sized parts has been required in order to fill orders for doors and windows of varying size without expensive time-consuming operations. In other cases, the manufacturer has had to incur a substantial investment in expensive cutting and milling machinery in order to assemble each blind from readily available standard materials.

It is desirable, especially in the case of metal slat blinds, to provide a simple and inexpensive head rail structure which can be fabricated and assembled from readily obtainable metal parts, which can be quickly and easily installed, and which provides an attractive all-enclosed appearance without the need for separate valances or other concealing devices.

Accordingly, a primary object of my invention is to provide a novel and greatly simplified head rail assembly for Venetian blinds in the form of a housing directly mountable adjacent the framework of a window, door, or the like, and adapted to receive the tilt rail and operating mechanism of the blind in normally concealed relation therein.

Another object of the invention is to provide a novel head rail assembly for Venetian blinds in the form of a channel-shaped structure serving both as a support for the tilt rail of the blind and as a concealing valance for the upper portion of the blind.

A further object of the invention is to provide a novel head rail structure for Venetian blinds to which the operating mechanism of the blind may be quickly and easily assembled by means of a plurality of slidably fitted and interchangeable parts.

An additional object of the invention is to provide a novel head rail assembly for Venetian blinds in which the body of the assembly is adapted to be formed from sheet metal in any desired commercial lengths which can be readily cut to fit a Venetian blind of a particular width and the operating mechanism readily secured thereto without the use of tools.

Still another object of the invention is to provide a novel head rail structure for Venetian blinds which may be assembled by the Venetian blind manufacturer with only a very few simple mechanical operations requiring no investment in special cutting or milling machinery and without the necessity of maintaining a large inventory of parts for blinds of varying size.

A still further object of the invention is to provide a novel Venetian blind head rail of simplified design which can be constructed by simple cutting and assembling operations using standard lengths of readily obtainable metal parts.

Other objects and advantages of the invention will become apparent from the subsequent detailed description of the invention and the accompanying drawing wherein:

Fig. 1 is a front elevational view of the upper portion of a Venetian blind including a head rail assembly comprising one specific embodiment of the present invention;

Fig. 2 is an enlarged front view of the head rail assembly shown in Fig. 1 with the parts thereof in exploded or detached relation and with the central portions broken away;

Fig. 3 is an enlarged end view of the head

3

rail assembly as viewed from the right end in Fig. 1; and

Fig. 4 is an enlarged perspective view of a detachable element of the head rail assembly seen in Figs. 1 and 2.

In Fig. 1, I have illustrated the upper portion of a Venetian blind assembly wherein the head rail structure of my invention is in the form of a downwardly opening housing or enclosure designated generally by the reference numeral 11. A horizontal tilt rail 12 is pivotally supported within the head rail structure 11 by means of a pair of tilt rail supports disposed at opposite ends of the head rail structure 11 and indicated generally at 13 and 14. The tilt rail support 13 includes a tilting mechanism 16 which is operable in the conventional manner by a cord 17 for tilting the rail 12 to open or close the blind. Adjacent the tilt rail support 14 is a cord-locking mechanism 18 for retaining the blind in any desired raised position. A pair of depending ladder tapes 19 are fastened at their upper ends to the tilt rail 12 for supporting a plurality of horizontal slats 20 as will be well understood by those skilled in the art. Raising and lowering cords indicated at 21 extend downwardly from the tilt rail 12 through the slats 20 and the opposite ends of these cords extend along the tilt rail 12 and pass through the cord-locking mechanism 18 for operation of the blind in the conventional manner.

As will be more clearly understood from Figs. 2 and 3, the head rail assembly 11 comprises an elongated inverted channel member 22, formed preferably from sheet metal, and having a flat top wall or central portion 23 with depending side walls 25 and 26 at the front and rear of the blind whereby to provide a generally U-shaped cross-sectional configuration. The elongated oppositely disposed bottom edges of the side walls 25 and 26 are rolled or turned inwardly, as indicated at 27, to provide smooth neat-appearing retaining beads.

The tilt rail supports 13 and 14 include a pair of generally U-shaped metal supports or clips, designated generally by the reference numeral 28 (Figs. 2 and 4), which are adapted for insertion in the opposite open ends of the channel member 22, the clip members each having a base or central portion 29 and depending sides 31 of such dimensions as to permit a snug sliding fit of the clip members 28 within the channel member 22. The bottom edges of the sides 31 are also rolled or turned inwardly, as at 32, and when the head rail is in assembled condition the rolled edges 32 of the clip members 28 are received within and snugly embraced by the inwardly turned edges 27 of the sides 25 and 26 of the channel member 22, as best seen in Fig. 3. In addition, when the structure is assembled, the central portions of the sides 31 of each of the clip members 28 are sprung or bowed inwardly in spaced relation from the sides 25 and 26 of the channel member 22, as shown at 33 in Fig. 3. The clip members 28 are thereby secured in position within the channel member 22 by means of the substantially concentric retaining engagement of the complementary rolled edges 27 and 32 and also by the resilient tension of the bowed sides 31 causing the central portions 29 of the clip members to be pressed tightly against the corresponding top wall 23 of the channel member 22.

Each of the clip members 28 has rigidly carried thereon a tilt rail supporting bracket which, in the embodiment of the invention shown in the

4

drawing, extends downwardly from the base 29 of the clip member for receiving and supporting one end of the tilt rail 12. As hereinbefore mentioned, the tilt rail support 13 at the left-hand side of the blind as viewed in Fig. 1 includes a bracket in the form of a tilting mechanism 16 of a conventional type, the adjacent end of the tilt rail 12 having a projecting stud 34 (Fig. 2) extending into the tilting mechanism 16 in operative engagement therewith. The opposite end of the tilt rail 12 has pivotally mounted thereon the cord-locking mechanism 18, the details of which form no part of the present invention, and a similar projecting stud 36 is journaled in a tilt rail supporting bracket 37 comprising part of the tilt rail support 14 at the right end of the blind as viewed in Fig. 1. The bracket 37 is rigidly secured, as by a pair of rivets 38, to the base 29 of the clip member 28 (Fig. 3), and it will be understood that the tilting mechanism or bracket 16 is rigidly fastened in a similar manner to the clip member 28 at the other end of the blind. The stud 36 is freely rotatable in the bracket 37 and may be readily detached therefrom, by means not shown in detail in the drawing, for inserting or removing the tilt rail 12.

It will be seen that the head rail structure 11 may be readily assembled merely by inserting the preassembled clip members 28, having the tilt rail supports 16 and 37 rigidly affixed thereto, into the opposite ends of the channel member 22, the clip members 28 being received in a generally telescopic relation within the channel member 22 and being retained in place at the ends of the channel member by the resilient pressure of the bowed side portions 31 and the close fitting engagement of the rolled edges 27 and 32.

One of the principal advantages of my invention is the fact that the channel member 22 may be fabricated in standard commercial lengths which the manufacturer of Venetian blinds may readily cut to any desired length as needed to fit a Venetian blind of a particular width. The clip members 28 with the tilt rail supports or brackets riveted or otherwise rigidly fastened thereto may be constructed as individual units at the factory by simple cutting, bending, and riveting techniques and may be purchased by the blind manufacturer in such preassembled form. These units are obviously adapted to be fitted interchangeably into channel members of varying lengths, so that the Venetian blind manufacturer, once having determined the overall dimensions of the blind being assembled, simply cuts a standard section of channel member to the desired length and slides a pair of preassembled clip members into the open ends of the cut channel member. Once the clips 28 and their supported mechanism have been moved to the desired position laterally of the channel housing, nothing further need be done except to assemble the operating cords and tapes in the usual manner. No auxiliary means are required to maintain the clips in position as that is accomplished by the tight friction fit of the clips in the channel as above described. Thus, the only equipment needed to assemble the head rail structure is a suitable cutting tool for cutting the channel member to the desired length thereby eliminating the need for relatively elaborate metal-working machinery heretofore required to assemble head rail structures of more complex design. Inasmuch as standard commercial lengths of channel member can be readily and

5

simply cut to fit the particular blind being assembled, it is unnecessary for the manufacturer of Venetian blinds to maintain a large inventory of different sized parts. To assemble the head rail structure herein disclosed he need merely keep on hand a supply of the preassembled clip members and standard commercial lengths of channel member.

In the structure shown in the drawing, the cord-locking mechanism 18 is shown as a tiltable portion of the tilt rail 12 but it is manifest that it could be constructed as a separate unit and secured to the base wall 29 of a clip 28, and the entire unit slidably mounted in the housing. The same would be true of other blind operating mechanism.

In the installation of the blind, the channel member 22 may be drilled with suitable holes on any one of its flat sides for mounting the head rail on a window frame, door frame, or other supporting framework. If desired, the channel members 22 can be provided by the metal fabricator with a plurality of preformed apertures in order to simplify installation. It will be seen that upon installation the head rail assembly of my invention provides a greatly simplified unitary structure for tiltable supporting the tilt rail of the blind and at the same time functioning as a housing or valance for concealing the upper portion of the blind from normal view.

Although the invention has been described in detail with respect to one specific structural embodiment, it will be understood that various modifications may be resorted to without departing from the scope of the invention as defined in the appended claims.

I claim:

1. A head rail assembly for Venetian blinds comprising an elongated open ended channel member of generally U-shaped cross section having its oppositely disposed longitudinal edges turned inwardly, and tilt rail supporting means including a pair of detachable U-shaped clip members slidably fitted into the opposite ends of said channel member, said clip members having their base portions in contact with the base portion of said channel member and their oppositely disposed free edges received within and engaged by the inwardly turned edges of said channel member and said clip members also having their side portions bowed inwardly under resilient pressure for resiliently retaining said clip members snugly within said channel member.

2. A head rail assembly for Venetian blinds comprising an elongated channel member of generally U-shaped cross section adapted to be rigidly mounted adjacent a supporting framework with the channel member opening downwardly, and tilt rail supporting means associated with said channel member and including a pair of detachable U-shaped clip members having tilt rail bracket means rigidly affixed to the base portion of the clip members and extending outwardly therefrom in a direction parallel to the side portions of the clip members, said clip members being slidably fitted into the opposite ends of said channel member with the base portions of the clip members in snug fitting relation against the top portion of the channel member, said channel member and said clip members having their oppositely disposed free edges rolled upwardly with the upturned edges of the clip members being received within and supported by the upturned edges of the channel member in

6

substantially concentric relationship, and the side portions of the clip members being bowed inwardly in a resilient manner for pressing the clip members upwardly within said channel member and thereby resiliently retaining said clip members in place.

3. A head rail assembly for Venetian blinds and the like, comprising an elongated channel member of generally U-shaped cross section including a base portion, oppositely disposed side portions, and inwardly turned edges at the outer ends of said portions, and means for detachably mounting blind-operating or supporting mechanism within said channel member including at least one support member slidably insertable at one end of said channel member and fitted in the latter, said support member having a base-engaging portion bearing against the base portion of said channel member and having spaced therefrom oppositely disposed projecting portions received within and engaged by the inwardly turned edges of said channel member, at least one of said members having a distortable resilient portion and the distance between the base-engaging and projecting portions of said support member being such as to effect resilient coaction of said support member with said channel member whereby said support member is frictionally retained in place in said channel member solely as a result of resilient pressure therebetween.

4. A head rail assembly for Venetian blinds and the like, comprising an elongated channel member of generally U-shaped cross section including a base portion, oppositely disposed side portions, and inwardly turned edges at the outer ends of said side portions, and means for detachably mounting blind-operating or supporting mechanism within said channel member including at least one support member slidably insertable at one end of said channel member and fitted in the latter, said support member having a base-engaging portion bearing against the base portion of said channel member and having spaced therefrom oppositely disposed projecting portions received within and engaged by the inwardly turned edges of said channel member, the distance between the base-engaging and projecting portions of said support member being such as to cause resilient engagement between said inwardly turned edges of said channel member and said projecting portions of said support member whereby said support member is frictionally retained in place in said channel member solely by resilient pressure exerted on said support member between said base portion and said inwardly turned edges.

5. The device of claim 4 further characterized in that said support member comprises a U-shaped clip member having its base portion bearing against the base portion of said channel member and its oppositely disposed free edges received within and engaged by the inwardly turned edges of said channel member.

6. The device of claim 4 further characterized in that said means for detachably mounting blind-operating or supporting mechanism within said channel member comprises a pair of detachable U-shaped clip members slidably fitted into the opposite ends of said channel member with the base portions of the clip members bearing against the base portion of said channel member and the free edges of the clip members being received within and engaged by the inwardly turned edges of said channel member.

7. The device of claim 4 further characterized

7

in that the edges of said channel member are rolled inwardly and said support member comprises a U-shaped clip member having its base portion bearing against the base portion of said channel member and having its oppositely disposed free edges also rolled inwardly with the rolled edges of said clip member being received substantially concentrically within the rolled edges of said channel member.

EDWARD E. SCHAEFER.

5

10

8

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
2,165,292	Morse et al.	July 11, 1939
2,334,132	Sherwood	Nov. 9, 1943
2,410,549	Olsen	Nov. 5, 1946
2,455,135	Nelson	Nov. 30, 1948
2,503,876	Krauss	Apr. 11, 1950
2,505,943	Charbonneau	May 2, 1950
2,534,080	Stuber	Dec. 12, 1950