March 30, 1954 H. NELSON 2,673,608

VENETIAN BLIND HEAD BAR CONSTRUCTION AND FITTING

Original Filed Oct. 4, 1947

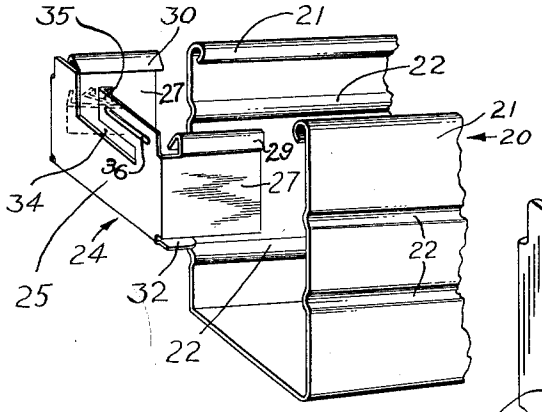


FIG. 1

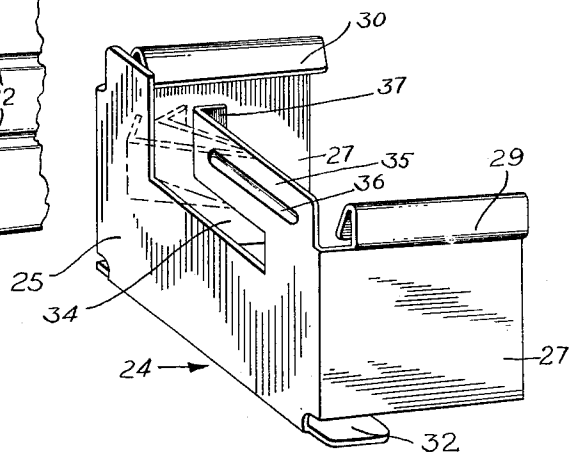


FIG. 2

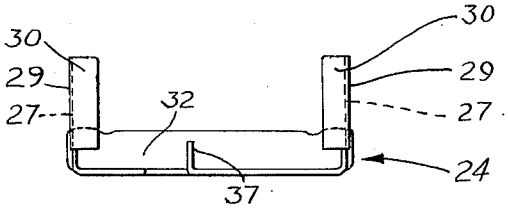


FIG. 3

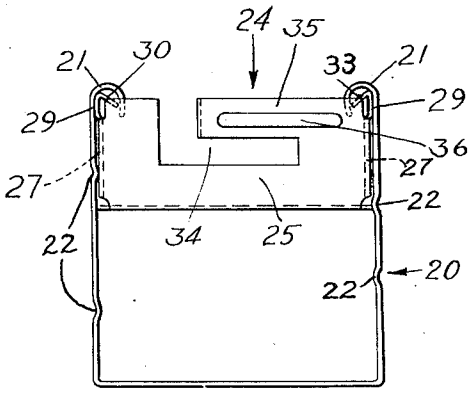


FIG. 4

INVENTOR
HARRY NELSON
BY
Ramsey, Chisholm & Holden
HIS ATTORNEYS

Patented Mar. 30, 1954 2,673,608

UNITED STATES PATENT OFFICE

2,673,608

VENETIAN BLIND HEAD BAR CONSTRUCTION AND FITTING

Harry Nelson, McKeesport, Pa., assignor to Lorentzen Hardware Mf'g Corp., New York, N. Y., a corporation of New York

Original application October 4, 1947, Serial No. 778,002, now Patent No. 2,629,434, dated February 24, 1953. Divided and this application December 30, 1952, Serial No. 328,650

7 Claims. (Cl. 160—178)

1

This invention relates to Venetian blinds and, more particularly, to a Venetian blind head bar construction.

In the enclosed head bar type of Venetian blind, the operating mechanism of the blind is often received within a sheet metal channel extending across the top of the blind and supported at its ends by installation brackets secured to the window frame. The head bar is often formed of a light gauge sheet metal channel having inwardly turned longitudinal edges forming beads running along these edges of the channel.

The present invention is directed to an improved end brace construction for maintaining the proper spacing between the beads at the ends of the head bar channel and reinforcing the channel against bending so as to provide a more rigid channel that can be constructed of lighter gauge metal. To this end, the end brace of the present invention has an intermediate portion extending between the side walls of the channel and a pair of parallel end flanges lying in parallel vertical planes perpendicular to the plane of the intermediate portion and positioned against the inner faces of the sides of the head bar, the upper edge of each end flange having a portion shaped to wedge within a head of the head bar to retain the brace in applied position. The present application is a division of patent application S. N. 778,002, filed October 4, 1947, now U. S. Patent 2,629,434 issued February 24, 1953.

Among the objects of the present invention are to provide an improved Venetian blind head bar construction and end brace therefor in which the end brace may be readily applied to the head bar channel without the use of special tools, in which the end brace greatly increases the resistance of the head bar channel against bending, and in which the end brace is easily and economically formed as a sheet metal stamping, and to generally improve end braces of the type herein described.

Further objects and objects relating to details and economies of construction, manufacture, and use will more definitely appear from the detailed description to follow.

My invention is clearly defined in the appended claims. In the claims, as well as in the description, parts are at times identified by specific names for clarity and convenience, but such nomenclature is to be understood as having the broadest meaning consistent with the context and with the concept of my invention as distinguished from the pertinent prior art. The best form in which I have contemplated applying

2

my invention is illustrated in the accompanying drawings forming part of this specification, in which:

Fig. 1 is a fragmentary isometric view of the end of a Venetian blind head bar channel, showing the brace of the present invention in exploded relation thereto.

Fig. 2 is an isometric view on an enlarged scale of the end brace alone.

Fig. 3 is a top plan view of the end brace.

Fig. 4 is an end view of the head bar channel, showing the end brace of the present invention applied thereto.

Referring particularly to Figs. 1 and 4, the head bar channel **20** with which the end brace of the present invention is employed is formed of a length of channel-shaped sheet metal severed from a piece of indeterminate length. The channel **20** is generally rectangular in cross section and has round, inturned, open, marginal beads **21**, **21** formed along the longitudinal edges of the channel. The channel **20** may also be provided with one or more longitudinal inwardly pressed beads or corrugations **22** on the front and back sides of the channel. The marginal beads **21**, **21** and corrugations **22** add to the appearance of the head bar channel and stiffen it against bending.

The channel **20**, which is formed of relatively light gauge sheet metal, preferably steel, is reinforced at its open ends by end braces, one end brace **24** being shown in detail in Fig. 2. The braces of the present invention are identical, no lefts or rights being required. Each end brace **24** is formed of a sheet metal stamping having a generally flat, intermediate portion **25** adapted to span the space between the inner faces of the upstanding sides of the channel **20**. A pair of generally flat, parallel end flanges **27**, **27** lying in vertical planes perpendicular to the plane of the intermediate portion of the brace are adapted to be positioned against the inner faces of the sides of the head bar channel **20**.

If the head bar channel **20** is provided with inwardly pressed stiffening corrugations **22** as shown in the drawings, the flanges **27**, **27** lie against the backs of these corrugations and are slightly spaced from the general plane of the head bar by an amount equal to the depth of the corrugations. In such a construction, the upper edge portion **29** of each flange **27** is outwardly offset an amount approximately equal to the depth of the corrugations **22** so as to generally align this portion of the end brace against the inner face of the sides of the head bar channel,

the portion 29 then being curved upwardly and inwardly to generally follow the curvature of the marginal beads 21, 21 of the head bar.

The portion 29 of each flange 27 may terminate in a generally flat, inwardly, downwardly extending flange 30 which, when assembled with the head bar, extends chordally of the round bead 21 (see Fig. 4). The flange 30 is tapered somewhat towards its free end (away from the intermediate portion 25 of the brace) to aid in introducing this portion of the end brace within the beads 21, 21. The taper of flange 30 is shown somewhat exaggerated in Fig. 2 of the drawings. Upon application of the end brace 24 to the channel 20, the upper edge portions 29, 29 of the brace, including the flanges 30, 30, tightly engage the inner surfaces of the beads 21, 21 so as to retain the end brace 24 in applied position. This frictional engagement is enhanced somewhat by the resiliency of the beads 21, 21 which are expanded somewhat by the telescoping of these portions within the ends of the beads. If desired, the frictional engagement may be further increased by serrating or roughening the portions of the end brace which engage the inner walls of the beads 21, 21.

The intermediate portion 25 of the end brace 24 preferably projects upwardly to a level somewhat above the lower edges of the inwardly extending flanges 30, 30 of the brace and preferably to a level with the top of edge portions 29, 29 so as to engage against the end edges of the round marginal beads 21, 21 and limit telescoping movement of the end brace within the beads (see Figs. 2 and 4). Preferably, the upper edge portions 29, 29 of the side flanges are cut away adjacent the intermediate portion 25 of the brace to facilitate bending of the side flanges in forming the brace.

The intermediate portion 25 of the end brace 24 is provided with stiffening means which may comprise a laterally, inwardly directed stiffening flange 32 extending along the lower edge of this portion of the brace. This flange is slightly longer than the space between the outer surface of the end flanges 27, 27 of the brace so as to bear against the inner faces of the sides of the channel 20. In addition, an L-shaped slot 34 which extends to the upper edge of the intermediate portion 25 of the brace defines a transversely extending finger 35 which may be reinforced by a stiffening bead 36. The finger 35 is preferably formed with an inturned end 37. This finger may subsequently be bent outwardly as required, as indicated in dot-dash lines of Fig. 1 and 2, to prevent end play of the head bar 20 within the mounting brackets.

An end brace 24 may be applied to each end of the channel 20 by hand pressure alone or may be pressed or driven into position by suitable tools. When in position, the bead-engaging portions 29, 29 (including the portions 30, 30) of the brace are tightly wedged within the marginal beads 21, 21, and the intermediate portion 25 of the brace abuts against the end of these beads. The outer surfaces of the flanges 27, 27 lie against the corrugations 22 of the head bar channel and the stiffening flange 32 abuts against the inner surface of the sides of the head bar channel below or between the corrugations. Thus, the brace of the present invention not only maintains the marginal beads of the channel 20 at a fixed distance, but also serves to reinforce the sides of the channel against bending.

I claim:

1. In the art of Venetian blinds, a stamped sheet metal end brace for a channel-shaped metal head bar having rolled beads along its longitudinal edges, said end brace comprising: a generally flat, elongated, intermediate portion adapted to span between the side walls of the head bar and a pair of parallel end flanges lying in parallel vertical planes perpendicular to the plane of the intermediate portion and adapted to be positioned against the inside surfaces of the sides of the head bar, the end flanges each having a bead-engaging portion along the upper edge thereof tapered in a direction away from the intermediate portion and towards the free ends thereof, said bead-engaging portions being adapted for telescopic engagement within the beads of the head bar, and the intermediate portion extending opposite the ends of the bead-engaging portions.

2. In the art of Venetian blinds, an end brace for a channel-shaped metal head bar having rolled beads along its longitudinal edges, said end brace comprising: a generally flat, elongated strip of metal lying in a vertical plane and adapted to span the head bar, said strip having a pair of parallel end flanges lying in parallel vertical planes perpendicular to the plane of the strip and adapted to be positioned against the inner surfaces of the sides of the head bar, the end flanges each having a portion along the upper edge thereof lying at an angle to the remainder of the flange and adapted to extend chordally within the rolled beads of the head bar for retaining the brace in applied position.

3. An end brace as claimed in claim 2 in which the portion of each end flange lying at an angle to the remainder of the flange is slightly tapered in width towards its free end.

4. In the art of Venetian blinds, a stamped sheet metal end brace for an upwardly opening, channel-shaped metal head bar having rolled beads along its longitudinal edges and vertical sides each having at least one inwardly pressed corrugation extending longitudinally thereof, said end brace comprising: a generally flat, elongated, intermediate portion adapted to span between the side walls of the head bar, and a pair of parallel end flanges lying in parallel vertical planes perpendicular to the plane of the intermediate portion and adapted to be positioned against the inner surfaces of the sides of the head bar, the end flanges each having a bead-engaging portion along the upper edge thereof adapted for telescopic engagement within the beads of the head bar, the bead-engaging portions of the end flanges being offset outwardly slightly beyond the general plane of the end flanges, and a part of the intermediate portion of the brace likewise extending outwardly beyond the general plane of the end flanges.

5. In the art of Venetian blinds, a stamped sheet metal end brace for an upwardly opening, channel-shaped metal head bar having rolled beads along its longitudinal edges and vertical sides each having at least one inwardly pressed corrugation extending longitudinally thereof, said end brace comprising: a generally flat, elongated, intermediate portion adapted to span between the side walls of the head bar, and a pair of parallel end flanges lying in parallel vertical planes perpendicular to the plane of the intermediate portion and adapted to be positioned against the inner surfaces of the sides of the head bar, the end flanges each having a bead-engaging portion along the upper edge thereof adapted for telescopic engagement within the beads of the head bar, the bead-engaging por-

tions of the end flanges being offset outwardly slightly beyond the general plane of the end flanges.

6. A Venetian blind head bar assembly, comprising: a channel-shaped sheet metal head bar having inwardly turned, rolled, open beads along its longitudinal edges, and an end brace reinforcing the end of said channel against bending, said end brace comprising: a generally flat, elongated, intermediate portion spanning between the side walls of the head bar and a pair of parallel end flanges lying in parallel vertical planes perpendicular to the plane of the intermediate portion of the brace and positioned against the inside surfaces of the sides of the head bar, the end flanges each having a bead-engaging portion along the upper edge thereof telescoped within and engaging the inner surface of a head bar head and the intermediate portion of the brace being positioned against the end edges of the beads.

7. A Venetian blind head bar assembly, comprising: a channel-shaped sheet metal head bar having inwardly turned, rolled, open beads along its longitudinal edges, and an end brace reinforcing the end of said channel against bending, said end brace comprising a generally flat, elongated, intermediate portion spanning between the side walls of the head bar and a pair of parallel end flanges lying in parallel vertical planes perpendicular to the plane of the intermediate portion of the brace and positioned against the inside surfaces of the sides of the head bar, the end flanges each having a bead-engaging portion along the upper edge thereof tapering in a direction away from the intermediate portion and towards its free end, the bead-engaging portions being telescoped within and engaging the inner surface of a head bar bead and the intermediate portion of the brace being positioned against the end edges of the beads.

HARRY NELSON.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
2,455,135	Nelson	Nov. 30, 1948
2,534,080	Stuber et al.	Dec. 12, 1950