Dec. 9, 1952 H. S. ROSENBAUM 2,620,866

FIXTURE FOR VENETIAN BLINDS

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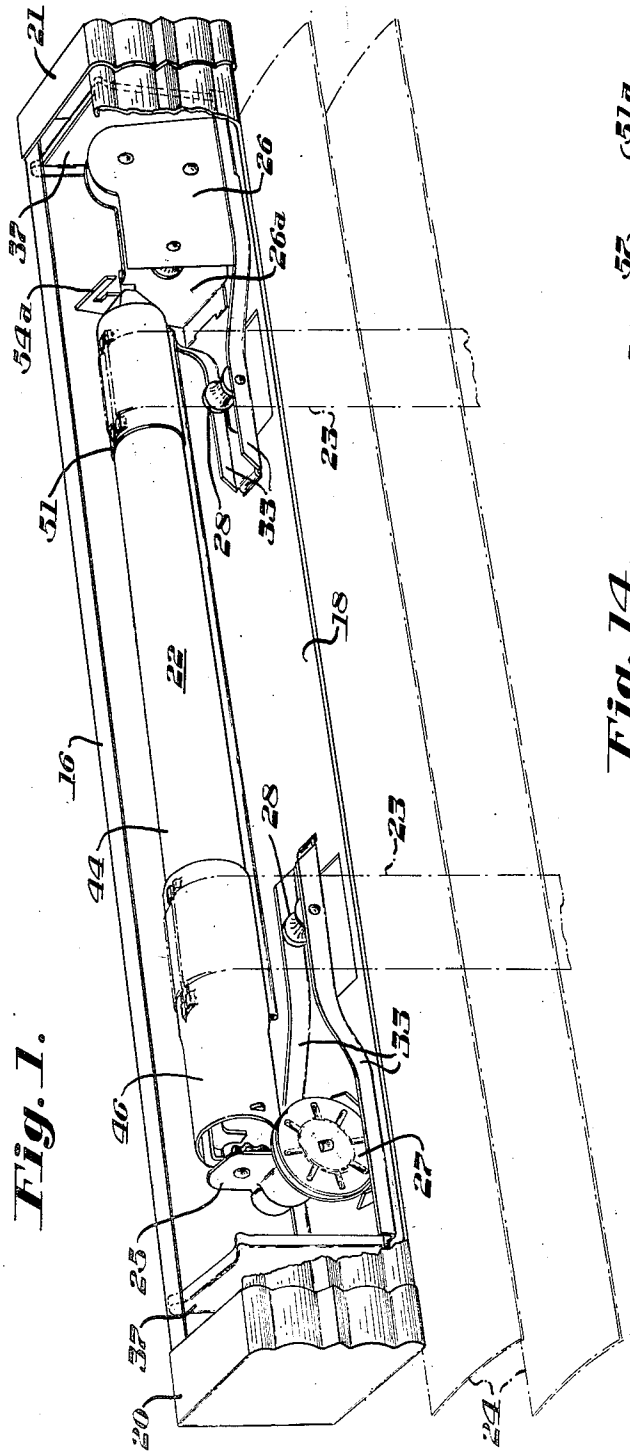


Fig. 1.

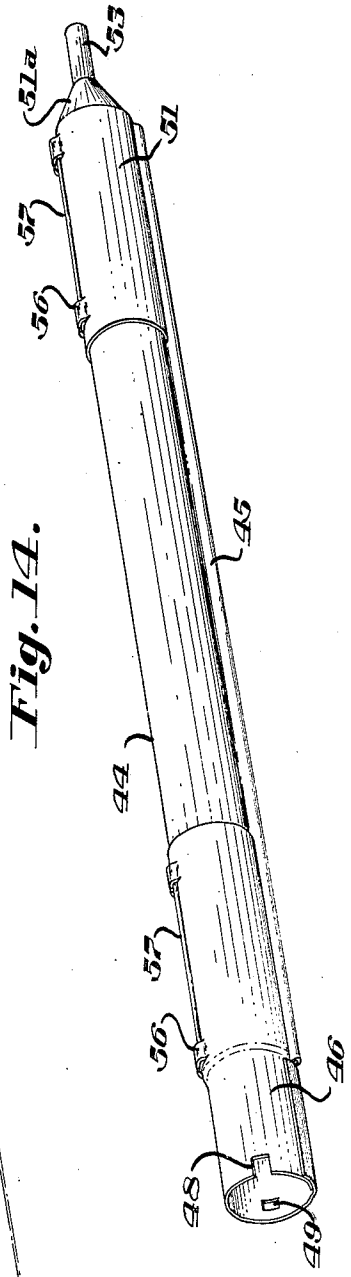


Fig. 14.

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Fig. 8.

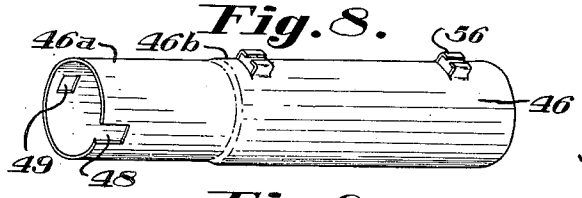


Fig. 10.

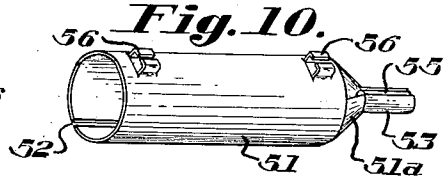


Fig. 9.

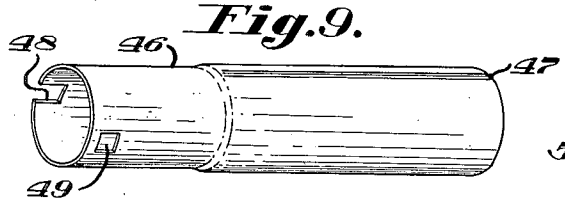


Fig. 11.

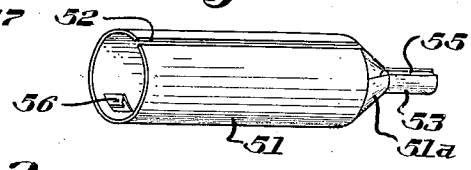


Fig. 2.

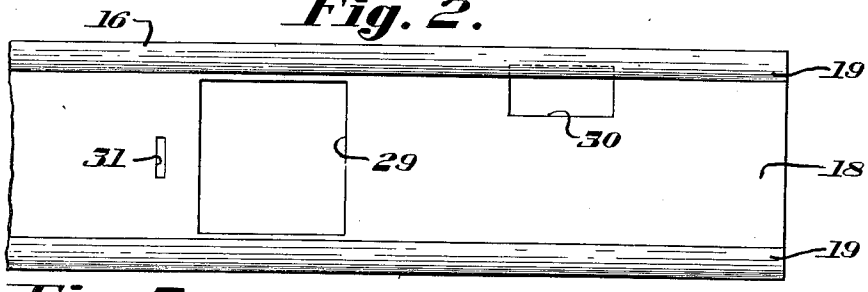


Fig. 3.

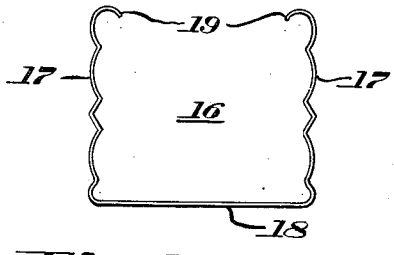


Fig. 6.

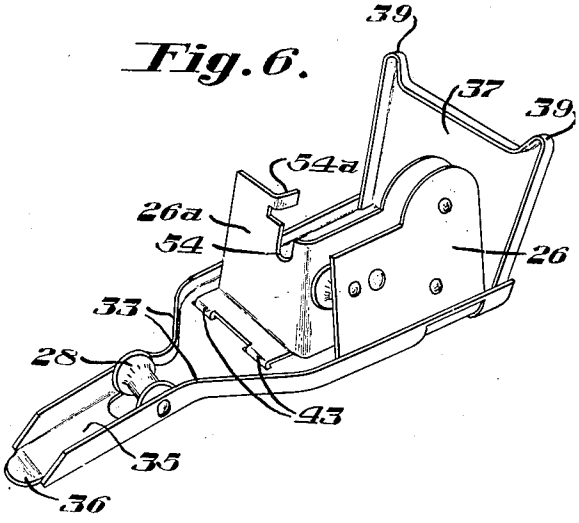
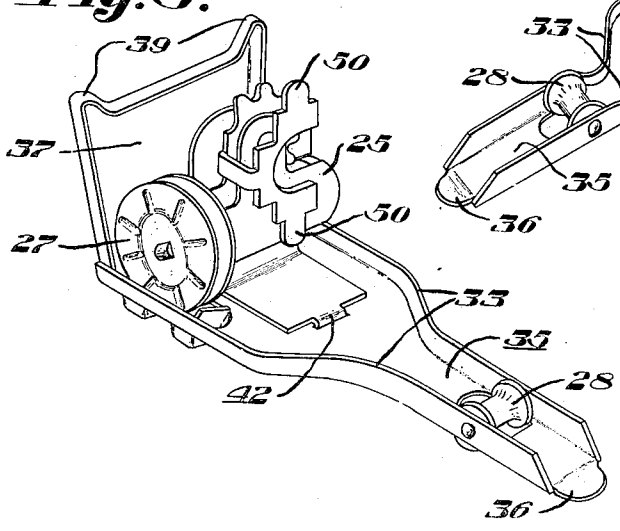


Fig. 5.



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Fig. 4.

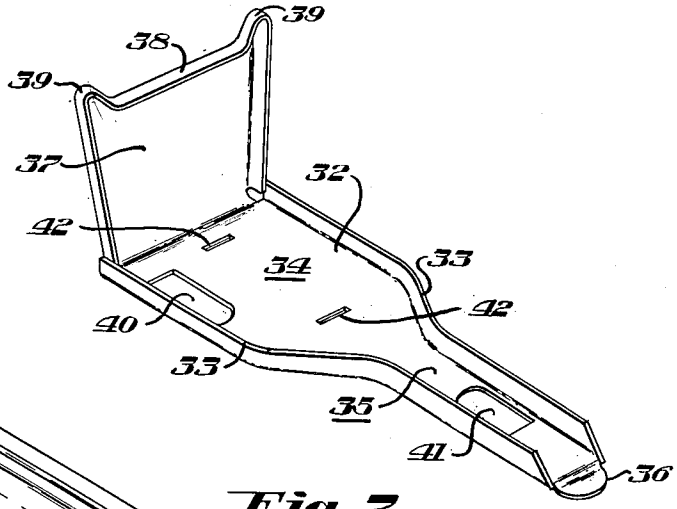


Fig. 7.

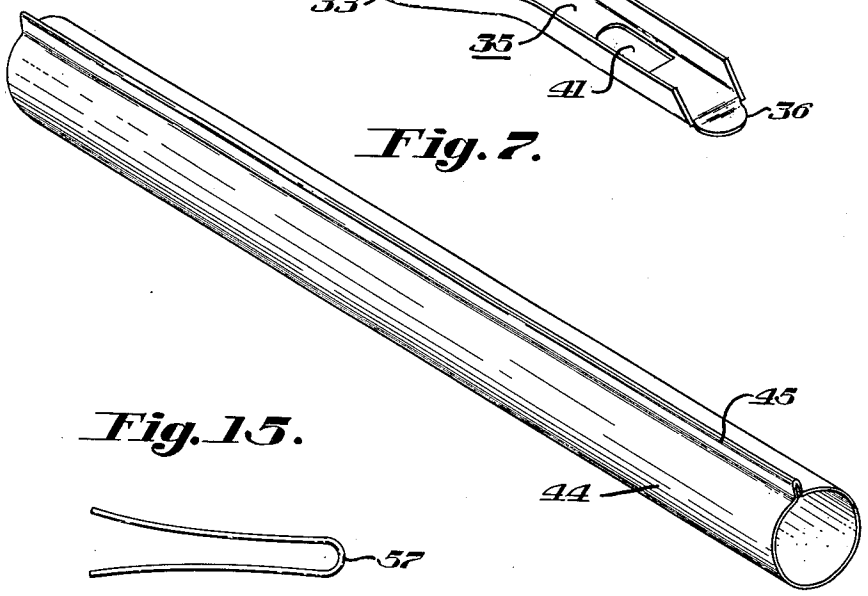


Fig. 15.

Fig. 12.

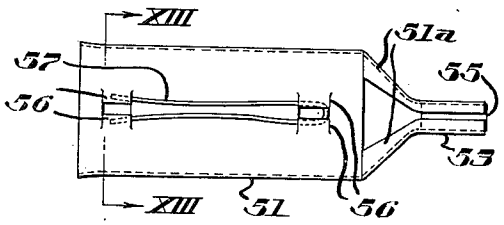
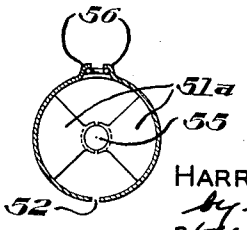


Fig. 13.



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FIXTURE FOR VENETIAN BLINDS

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Application April 22, 1948, Serial No. 22,622

2 Claims. (Cl. 160—177)

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My invention relates to fixtures for Venetian blinds, particularly those having a headrail which both supports and conceals the mechanism for operating the blind. They relate particularly to metal blinds of this type and to fixtures for supporting or assembling the blind operating mechanism.

Metal blinds of the type to which my invention particularly relates generally have a headrail in the form of a U-shaped channel which supports on its base the mechanism for operating the blind, the outer side of the U concealing the operating parts. The operating parts include a tilt roller to which the slat tapes are secured and a mechanism for rotating the roller to tilt the slats of the blind. The headrail also carries a cord lock which holds the cord for raising and lowering the blind in any desired position and several pulleys which guide the cords for raising and lowering the blind. If the blind is of substantial length the channel also carries intermediate supports for the tilt roller. All of these parts, with the exception of the cords and tapes, are made of metal. It, therefore, has been the practice to completely fabricate metal Venetian blinds at the factory. The channels, tilt rollers, and slats are all cut to length and these parts, together with operating mechanism have been permanently secured to each other as by welding, rivets, presses, etc.

There are many different sized windows and, therefore, retail dealers of Venetial blinds (generally small concerns) have had to carry in stock quantities of blinds in different sizes in order to supply customers promptly with the particular size which the customers require. Thus, although it has until recently been the custom to supply metal Venetian blinds in only one shade, a local dealer has had to stock in quantity more than two hundred different widths. In many instances the capital and storage requirements have been almost impossible for a small dealer to meet. This situation has recently been aggravated by the fact that metal Venetian blinds are now manufactured and sold in several different colors.

I have devised fixtures for metal Venetian blinds and particularly for the operating parts thereof whereby a local dealer can assemble the blinds himself. A manufacturer can supply to the dealer channels for the headrails and tubing for the tilt rollers in long lengths and also operating mechanism or "hardware" such as cord locks, tilting mechanism, pulleys, etc. The dealer may cut the channels and tubing for the rollers

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to the required length and, using fixtures which I have invented, assemble the complete headrail in his own shop. This assembly can be done without presses, welding or riveting machines such as are usually available only in factories. In fact, the assembly can be done without any tools at all. Since the local dealer can make up blinds complete with headrails to any size required and in a very short time he does not have to carry large numbers of different sized blinds on stock. By virtue of my invention the dealer carries only long lengths of headrail channels and tubing for the tilt rollers in quantities proportional to the size of his business.

In the accompanying drawings I have illustrated present preferred embodiments of my invention in which

Figure 1 is a perspective view of a headrail for a Venetian blind having a U-shaped channel with parts broken away to show the manner in which my fixtures are used in a headrail;

Figure 2 is a partial plan view of the channel forming the headrail;

Figure 3 is an end view of the channel;

Figure 4 is a perspective view of a fixture which I have designed for installing operating mechanism in the channel forming the headrail;

Figures 5 and 6 are perspective views of differena operating mechanisms which may be installed on the fixture illustrated in Figure 4;

Figure 7 is a perspective of the central portion of a tilt roller which may be installed in the headrail shown in Figure 1;

Figures 8 and 9 are two different perspective views of one end connector used with the central body of the roller shown in Figure 7;

Figures 10 and 11 are two perspective views of another end connector used with the central body shown in Figure 7;

Figure 12 is a plan view of a connector shown in Figures 10 and 11;

Figure 13 is a section along the lines XIII—XIII of Figure 12;

Figure 14 is a perspective of an assembled tilt roller; and

Figure 15 is a plan view of a clip used to secure the slat supporting tapes of a blind to the tilt roller.

A headrail for a metal Venetian blind comprises a channel 16 which, as shown in Figure 3, is generally U-shaped, having sides 17 and a base 18, the upper edges of the sides having inwardly and reversely curved flanges 19 to increase the rigidity of the sides. Installation brackets 20 and 21 are fitted over each end of the

channel to secure the headrail adjacent the top of and between the sides of a window frame. These brackets may be of any conventional type.

The channel 16 supports on its bottom 18 and adjacent each end mechanism for operating the blinds. Such mechanism comprises a tilt roller designated generally by the reference number 22 to which are secured tapes which carry and space the blind slats, the tapes and a few of the slats being indicated in chain lines in Figure 1 at 23 and 24 respectively. The roller 22 is supported at one end by tilting mechanism 25 such as is disclosed in my United States Patent No. 2,544,184, and at the other end by a conventional cord lock mechanism 26. As described in my said copending application, the tilting mechanism is actuated by rotation of a wheel 27, the wheel being rotated by a cord passing around it and extending down from the headrail to easy reaching position. The slats are raised and lowered by cords which pass from points on the bottom rail of the blind adjacent the tapes up over pulleys 28 in the headrail through the cord lock 26 and down to a point where they can be reached. For clarity of illustration these cords are not shown in Figure 1 since their arrangement and operation is well known. A large square opening 29, a smaller rectangular opening 30 and a slot 31 are cut in the bottom 18 of the channel at both ends of the channel as shown in Figure 2. The opening 29 allows the tapes 23 to pass through the channel 16 to the tilt roller 22 to which they are connected. The opening 30 provides passage through the channel for the cords which operate the blind and the slot 31 is used to secure the tilting mechanism and the cord lock to the channel 16 as will be hereinafter described.

Figure 4 illustrates a fixture which I have devised for securing operating mechanism such as the tilting mechanism and the cord lock to the channel. The fixture comprises a base 32, both sides of which have upwardly extending flanges 33 which add rigidity to the base. A portion 34 of the base has sufficient width to support operating mechanism, for example, the tilting mechanism, and at the same time approximate the distance between the flanges 19 on the channel 16. Another portion 35 of the base is reduced in width to such an extent that the side flanges 33 adjacent this portion may be used to support and guide rollers for guiding the cords which raise and lower the slats such as the rollers 22 (see Figures 1, 5, and 6). A downwardly and outwardly extending tongue 36 is formed on one end of the base 32. An end plate 37 extends upwardly from the opposite end of the base, preferably the end adjacent the wider portion 34 of the base. This plate increases slightly in width from its lower edge against the base 32 to its upper edge 38. The upper edge of the plate has two upwardly extending projections 39, which as shown in Figure 4, are on opposite top corners of the plate. As shown in Figure 4, the edges of the plate 37 may be flanged for extra rigidity.

The base 32 has openings 40 and 41 cut therein to align with the openings 29 and 30 cut in the channel so that cords for operating blinds can pass through the base of the fixtures. Slots 42 are also cut in the base to provide means for fastening operating mechanism to the base. As shown in Figures 5 and 6, the tilting mechanism 25 and the cord lock 26 may be secured to the fixture 32 by tongues 43 which extend from their bases through the slots 42 and are bent over in presses to permanently secure the mechanism to the fixture.

A Venetian blind manufacturer may assemble the operating mechanisms to the fixture 32 and supply these assemblies to the retail dealer. The retail dealer will assemble them in a headrail in the following manner. A channel 16 is cut to the required length and the openings 29, 30 and 31 are cut therein near each end of the channel, as shown in Figure 2. The dealer then inserts the tongue 36 of each fixture into one of the slots 31 and presses the opposite end and the plate 37 down between the flanges 19 of the channel. It should here be noted that the portion 34 of the base 32 of the fixture is only slightly less in width than the distance between the flanges 19 so that pressing the fixture downwardly in the channel tends to spring the sides 17 of the channel outwardly. When the bottom edge of the plate 37 contacts the bottom of the channel, the sides 17 of the channel spring inwardly over the projections 39 on the top of the plate, the projections engaging the inner surfaces of the inwardly and reversely curved flanges 19. The tongue 36 and the flanges 19 of the channel in conjunction with the projections 39 securely hold the fixture and the operating mechanism which it suports in the proper position in the channel. The plate 37 not only holds the fixture in this position but also laterally reinforces the sides of the channel.

The tilt roller of the Venetian blind necessarily varies in length according to the width of the window in which the blind is to be installed. I have invented a tilt roller one part of which may be cut by the local dealer so that the tilt roller will have the required length. Thereafter the dealer may manually assemble the parts to form the tilt roller. My roller comprises a central body or tube 44 which may be formed by bending a flat sheet of metal. The edges of the sheet are preferably folded into an external seam 45 which forms a projection extending outwardly from the periphery of the central body or tube. This is the part of my tilt roller which is cut to length by the local dealer. My roller also comprises end connectors shown in Figures 8 to 13 inclusive. The dealer fits these connectors over the ends of the central body 44 to form a completed roller such as is illustrated in Figure 14.

Figures 8 and 9 are perspective views of one of these connectors, the connector there shown being designed so that the tilt roller can be connected to the tilting mechanism. The connector has a tubular body 46 and a longitudinal slot 47 formed in one end of the body. The connector is adapted to be slipped over the central body 44 of the roller, the projection or seam 45 on the central body passing into the slot 47. The seam 45 and the slot 47 thus cooperate to prevent relative rotation between the central body and the connector 46. The other end of the connector has openings 48 and 49 cut therein as shown in Figures 8 and 9. When a roller is installed in the headrail, lugs 50 on the sector of a tilting mechanism such as is shown in Figure 5 engage the openings and the tilt roller is thereby operatively connected to the tilting mechanism.

The other end connector is shown in Figures 10 to 13 inclusive. This connector comprises a hollow body portion 51 which is adapted to be fitted over the central body 44. This connector also has a longitudinal slot 52 which cooperates with the seam 45 of the tube 44 in the same man-

ner and for the same purpose as the slot **47** in the end connector, shown in Figures 8 and 9. One end of this tube is reduced in diameter to form a short longitudinally extending axle **53**. As shown in Figure 1, this axle extends into an opening **54** in an end plate **26***a* of the cord lock **26** so that the roller may be rotatably supported at its end opposite from the tilting mechanism. The axle **53** may be formed by bending segments **51***a* of the body **51** inwardly and then outwardly as shown in Figure 12. The segments are then curved around a short round rod **55** and welded thereto as is shown in Figures 12 and 13.

Both connectors have means whereby the tapes which support the slats can be secured to the tilt roller. These means, best shown in Figures 8 and 10, comprise short strips **56** which are punched out of the body of the connectors **46** and **51**. The strips are positioned on the connectors in pairs, the pairs being spaced from each other along the length of the connector and the strips in each pair being bent first normal to the periphery of the connector and then towards the opposite strip. The ends of the tapes are folded around a U-shaped clip **57** (Figure 15) and the base of the clip is placed between one pair of strips. The legs of the clip are then pressed together so they can be inserted between the second pair of strips on the same connector. Figure 12 shows a clip in position on a connector, the tapes being removed for purposes of illustration.

Figure 14 shows a completed tilt roller. One end connector, such as the connector **46**, has been slipped over one end of the central body **44** and another connector **51** has been slipped over the other end. The connector **46** has a reduced portion **46***a* which thereby creates a shoulder **46***b*. This limits the amount that the connector can be slid along the central body **44**. The segments **51***a* on the connector **51** limit the amount that this connector can be passed along the body **44**. Both connectors have slots **47** and **52** respectively which engage the projection **45** on the central body so that there can be no relative rotation between the connectors and the central body.

By means of my invention a metal Venetian blind can readily be assembled by a local dealer. As noted above, he can obtain from the manufacturer channels for the headrails and tubing for the central body of the tilt roller in long lengths. He may also obtain "hardware" such as titling mechanism and cord locks, these latter two operating mechanisms being permanently affixed at the factory to the fixtures **32**, connectors for the tilt roller, installation brackets, tapes, slats and clips. When he receives an order for a blind of a particular size he can cut the channel and the central body of the tilt roller to the appropriate length and fasten the tilting mechanism and the cord lock in the headrail channel as described above. Thereafter he can assemble a tilt roller by sliding end connectors over the central body to obtain a structure such as that shown in Figure 14. The tilting mechanism is rotated until the lugs **50** on the tilting mechanism are in the position shown in Figure 5 and the uppermost lug **50** is inserted into the slot **49** of the left-hand end connector (viewing Figure 14). The lower lug **50** will engage the slot **48** as the axle **53** of the roller is lowered into the opening **54** in the end plate **26***a* of the cord lock. A tab **54***a* (Figure 6) is then straightened to the position shown in Figure 1 so as to secure the

axle in place. Thereafter the tapes are secured to the tilt roller as described above and the cords necessary for operating the blind are threaded through the slats of the headrail in the conventional manner.

Thus by virtue of my invention all of the parts necessary to make up metal Venetian blinds may be made in a factory at the low cost made possible by mass production techniques. At the same time the retail dealer can assemble these parts without tools and produce Venetian blinds having the same appearance and sturdiness of blinds heretofore assembled in final form only at factories. The dealer is not required to carry large quantities of different sizes of fully fabricated blinds in stock or maintain machines and equipment such as are usually found only in factories.

While I have described certain present preferred embodiments of my invention, it is to be understood that they may be otherwise variously embodied within the scope of the following claims.

I claim:

1. A tilt roller for a Venetian blind having a head rail and slat supporting tapes carried by the roller, said roller comprising a central body having a projection extending outwardly from its periphery, hollow connectors fitted over each end of the central body, each connector having longitudinally extending slots which engage the projection on the central body and each of said connectors having means for securing the tapes to the rollers, one of said connectors having openings in its end beyond the central body to engage a tilting mechanism carried by the head rail, the other connector having at its end beyond the central body a longitudinally extending stem whereby the roller may be rotatably supported in a bearing carried by the head rail.

2. A tilt roller for a Venetian blind having a head rail and slat supporting tapes carried by the roller, said roller comprising a central body having a projection extending outwardly from its periphery, hollow connectors fitted over each end of the central body, each connector having longitudinally extending slots which engage the projection on the central body and each of said connectors having two pairs of ears extending outwardly from the peripheries of the connectors and inwardly towards each other to hold clips for said tapes, one of said connectors having openings in its end beyond the central body to engage a tilting mechanism carried by the head rail, the other connector having at its end beyond the central body a longitudinally extending stem whereby the roller may be rotatably supported in a bearing carried by the head rail.

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