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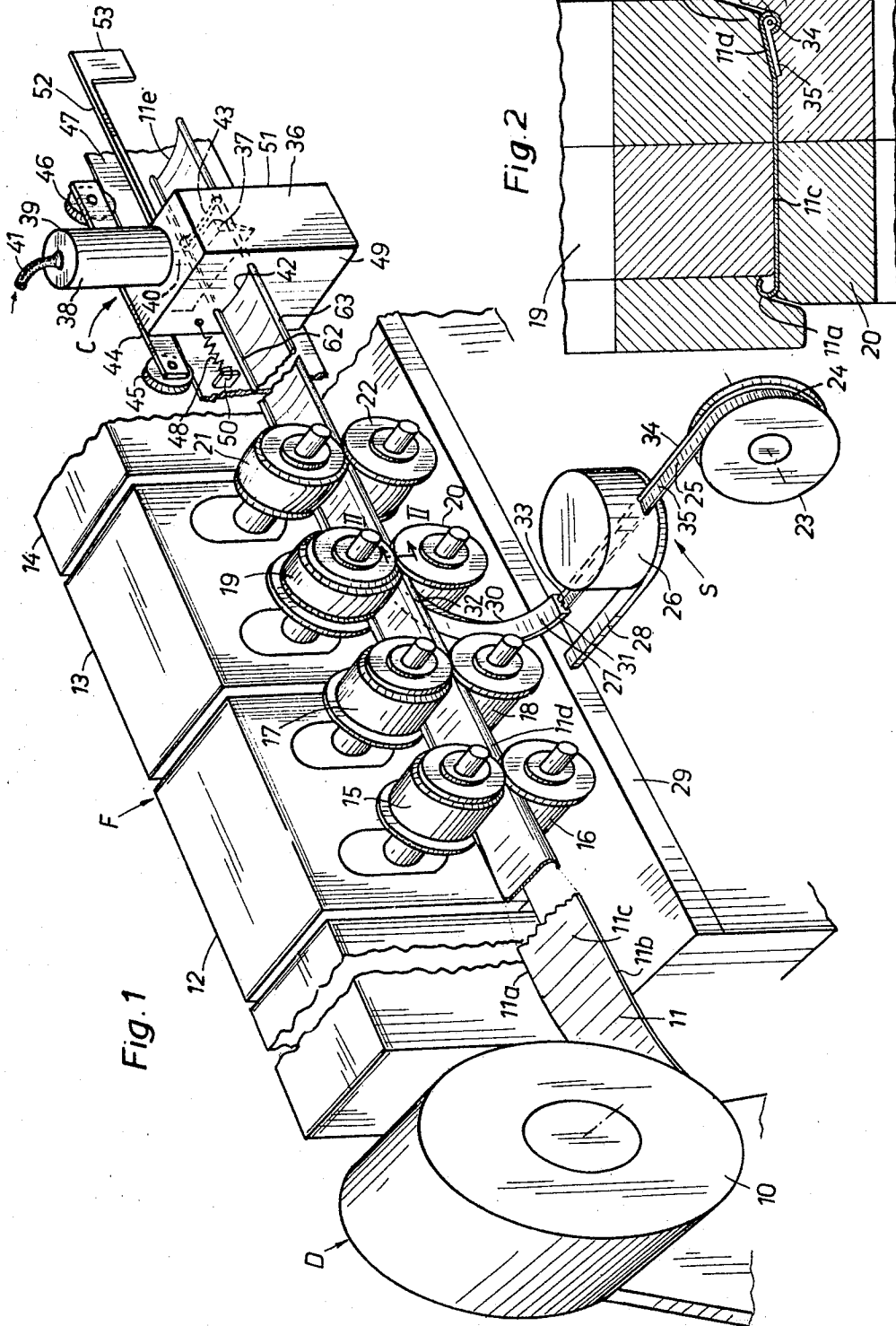
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METHOD AND APPARATUS FOR PRODUCING VENETIAN BLIND SLATS

Filed July 30, 1965

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Fig. 3

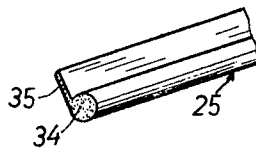
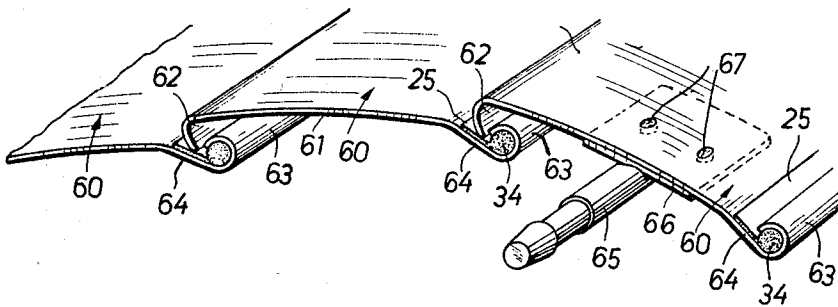


Fig. 4



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METHOD AND APPARATUS FOR PRODUCING VENETIAN BLIND SLATS

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9,327/62

17 Claims. (Cl. 29—417)

The application is a continuation-in-part of my co-pending United States application, Serial No. 296,838, filed July 22, 1963 entitled "Slat Structure For Roller Blinds," and now abandoned. The present invention has reference to an improved method of, and apparatus for, the production of slat members or structures for Venetian or roller blinds.

Venetian blinds incorporating a plurality of curved metal slats, wherein each slat structure or member possesses an inwardly bent lower longitudinal edge and an outwardly flanged or beaded upper longitudinal edge are already well known to the art. Such type Venetian blinds have been disclosed in my United States Patent No. 2,840,156, granted June 24, 1958 and entitled "Venetian Blind." In such physical construction of Venetian blind the slats are hingedly connected to carrier tapes or straps in such a manner that the upper and lower edges of adjacent slats overlap when the Venetian blind is drawn into closed position in front of a window or otherwise. In Venetian blinds of this type, when the slats are lowered or pivoted into their closed position the inwardly bent lower edge of each slat impacts against the upper edge of the neighboring slat close to the region of the flanged or beaded edge thereof. This causes considerable noise and damage to the slat members. Specifically, it will be appreciated that, in most instances, these metal slats are usually enamelled or varnished at their surface, so that such impact of each two neighboring slats can cause damage to the surface finish of these slat members, and if this happens, with time the Venetian blind becomes unsightly, especially when they are pivoted into their open, i.e. horizontal position. Additionally, during such time as the Venetian blind is raised or lowered it is not possible to prevent adjacent slat members from chafing against one another along their marginal portions, whereby additional damage is caused to their surface coating.

Now, in my aforementioned co-pending application, I have disclosed and claimed a Venetian blind structure incorporating individual slat members where the previously mentioned outwardly flanged or beaded upper longitudinal edge is provided with means for protecting these slat members from becoming damaged and for considerably reducing or preventing noise during operation of the Venetian blind. Specifically, such means embody a strip member formed of elastic material which preferably extends the full length of each slat member and is attached to the upper flanged edge thereof. Each of these strip members is advantageously provided with a substantially cylindrical beaded portion which merges with an integral tangential lip or web which covers an adjacent section of the upper edge portion of the associated slat member. Due to this advantageous construction of the strip member, when the slat members are brought into their closed position, the lower inwardly curved edge of one slat member will impact directly against the embedded elastic strip member of a neighboring slat member instead of directly impacting against the surface of such neighboring slat. Consequently, such impact is cushioned so that not only undesirable noise, but also damage to the surface coating of the slats is effectively avoided.

Now, a primary object of this invention is directed to the provision of an improved method of, and apparatus

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for, the production of such type slat members which are provided with a strip member at a flanged longitudinal edge thereof.

A further object of this invention has reference to an improved method of, and apparatus for, the production of slats for Venetian blinds provided with means for protecting the slats from becoming damaged and for considerably reducing noise when such Venetian blind is operated.

A more specific object of this invention is to provide an improved method of, and apparatus for, the production of slats which are each provided with a protective insert member along one longitudinal edge thereof, the latter being formed so as to effectively clamp and urge the aforesaid protective insert member against the body of the associated slat, and wherein production of the slats is continuous, namely, the insertion of such insert member is undertaken during shaping or forming of the slats.

Another considerable object of the invention pertains to an improved apparatus for the production of slat members for Venetian blinds wherein a protective member can be inserted and fixedly clamped to the slat structure during slat production, specifically when the band from which the slats are formed is moving.

Yet a further important object of the present invention has reference to an improved method for the production of slats provided with a strip member for protecting the slats from surface damage and for ensuring for quiet operation of the Venetian blinds at which the slats are used, and wherein the strip member is inserted and embedded in the band from which the slats are formed during travel of such band.

Another very important and specific object of this invention is directed to an improved method of, and apparatus for, the continuous and substantially automatic production of slat structures for Venetian blinds incorporating a protective strip member which is incorporated at the slats in such a manner that no additional fastening expedient is required other than the torque-exerting clamping which each slat exerts on the associated protective strip member.

Now, in order to implement these and still further objects of the invention which will become more readily apparent as the description proceeds, the method of the present invention contemplates continuously delivering a band to a forming station where the band is first pre-formed at forming rollers so that at least one, and preferably both longitudinal opposed edges thereof, are flanged or flexed in opposite directions, but only to an extent that a strip member delivered from a supply source can be continuously introduced along and into the region of the at least one pre-formed flanged longitudinal edge which can be impacted or contacted by a longitudinal edge of an adjacent upper seat structure during operation of the Venetian blind. The thus pre-formed band then moves towards further forming rollers of the forming station, but prior to reaching these further forming rollers which impart further flanging to the aforesaid at least one pre-formed longitudinal edge of the band member, the strip member is inserted into the region of said one longitudinal pre-formed flanged edge and is seized by the moving band and continuously pulled-off its supply source. The band with its at least one pre-formed longitudinal edge and the therein inserted strip member is then fed through these further forming rollers, whereby further flanging of the or these longitudinal edges takes place. Specifically, at least the aforementioned one flanged edge is further flanged or flexed so as to snugly engage and embed the inserted strip member and to continuously pull such along with the travelling band towards a cutting station. According to an important aspect of the invention, during this further forming operation a torque is applied to the

strip member in such a manner that a tangentially depending lip or web of such strip member is forced snugly against the body of the band, so that solely by virtue of the torque-applying clamping action of this one flanged longitudinal edge the strip member remains securely embedded in and the web snugly bears against the band. After having been fully formed into the desired configuration the continuously moving band is delivered to a cutting station which cuts this band, preferably during its travel, into finite strips substantially corresponding to the length of the individual slat structures. It will be appreciated that the cutting operation takes place at such time as the strip member is already inserted in the band from which the slats are formed. If any other finishing operations are required such can then be undertaken.

A preferred embodiment of inventive apparatus for carrying out the aforescribed inventive method incorporates a supply station which delivers a continuous supply of a band member to a forming station possessing cooperating pairs or sets of forming or shaping rollers. These sets of forming rollers work the band member so that it will possess a desired configuration. Particularly, some of these forming rollers pre-form the band such that at least one, and preferably both opposed longitudinal edges are slightly flexed. Before the band member which is thus pre-formed is fed to further forming rollers which impart a substantially final configuration to the band member, there is introduced into the at least one longitudinal edge of the band member a strip member which is then continuously pulled-off its supply source due to the movement of the band member through the further forming rollers. The latter cause the strip member to become fixedly clamped at such one further formed longitudinal edge of the band member and the thus formed band member together with the therein embedded strip member is then delivered to a cutting station. At this cutting station the continuously moving band coacts with a cutting device provided at the cutting station in order to impart substantially the same speed of movement to the cutting device that the band member possesses. When both band member and cutting device have attained the same speed of movement then the cutting operation is triggered, a slat member of predetermined finite length is cut from the continuously moving and incoming band member. This cutting operation repeats each time the band member passes into the cutting station, so that production of these slat members is continuous.

Other features, objects and advantages of the invention will become apparent by reference to the following detailed description and drawings in which:

FIGURE 1 is a fragmentary, perspective view of a preferred embodiment of apparatus designed according to the teachings of the present invention capable of forming slat members of the type described for Venetian or roller blinds;

FIGURE 2 is an enlarged, fragmentary, cross-sectional view through the first pair of forming rollers disposed downstream and adjacent the strip inserting station taken substantially along the line II—II of FIGURE 1;

FIGURE 3 is an enlarged, fragmentary, perspective view showing details of the physical structure of the protective strip member which is inserted into the slat members formed with the apparatus of FIGURES 1 and 2; and

FIGURE 4 is an enlarged, fragmentary, perspective view of a portion of Venetian blind incorporating slat members formed with the apparatus depicted in FIGURES 1 and 2.

Directing attention now to the drawings, the preferred exemplary embodiment of inventive apparatus for carrying out the inventive method of forming improved slats for use in Venetian blinds, in its major components embraces a supply or delivery station D which continuously feeds a strip or band member 11, typically an aluminum band, to a forming station, generally designated by refer-

ence character F. Additionally, there is provided a strip inserting station S which is disposed laterally of the forming station F and which feeds a continuous strip member 25 (FIGURES 1 and 3) to the forming station F for insertion in the band member 11 undergoing shaping. The continually delivered and moving band member 11 with the thus inserted strip member 25 then leaves the forming station F, arriving at a cutting station C where this band member 11 is cut into individual slats 60 (FIGURE 4) of predetermined finite length, each of which has fixedly embedded thereat a corresponding length of the inserted strip member 25.

While the foregoing provides a brief over-all description of the general arrangement of the inventive apparatus for forming such slat members 60, a specific preferred illustrative physical construction embodies a supply coil or roll 10 arranged at the supply station D and from which there is payed-off a continuous metal band member 11 e.g. aluminum band, which is fed towards the forming station F. The latter, in effect, provides a rolling mill incorporating a number of stands 12, 13, 14, etc., wherein only two such stands 12 and 13 have been shown in any considerable detail. It will be clearly understood, however, that there can be provided any desired number of these stands with associated forming elements. In the illustrated embodiment each stand has rotatably mounted thereat two pairs of cooperating forming elements or rollers. Specifically, at the stand 12 there is provided a first pair of cooperating forming rollers 15, 16 and downstream in the direction of travel of the band member 11 a second pair 17, 18. Likewise, at the forming stand 13 there is provided two further pairs of forming rollers 19, 20 and 21, 22. The sets or group of rollers 15 to 22 are driven, in known manner, by any suitable means so that the band member 11 is continually pulled-off the supply roll 10 and is advanced through such group of rollers 15 to 22 towards the cutting station C.

Additionally, each cooperating pair of these rollers 15 to 22 is suitably constructed so that as the band member 11 progressively passes from the first pair of cooperating rollers 15, 16 to the last-illustrated pair of cooperating rollers 21, 22, this band member 11 is properly worked or formed into the desired configuration. More specifically, the aforesaid first pair of rollers 15, 16 pre-form the incoming band member 11, and such that the rear edge 11a is here bent or flanged slightly upwards, to begin to form the flanged longitudinal lower edge 62 of the finished slat member 60 of FIGURE 4, while the forward edge 11b is bent slightly downwards, in order to begin to form the flanged longitudinal upper edge 63 of these finished slat members 60. At the same time, these forming rollers 15, 16 also appropriately begin to shape the intermediate portion 11c of the band member 11 to possess an outwardly curved or convex form, corresponding to the intermediate portion 61 of each slat 60, and an inwardly directed portion 11d, corresponding to portion 64 of each slat 60. After this pre-formed band 11 passes the first set of forming rollers 15, 16 it moves into the operating region of the second set of forming rollers 17, 18 where the band member 11 is further formed and, in particular, this rear longitudinal edge 11a and the front longitudinal edge 11b are even further flanged or flexed upwardly and downwardly respectively. It will be understood that when the band member 11 leaves the pair of cooperating forming rollers 17, 18 the flanging of these longitudinal edges 11a, 11b is not yet completed, in other words, the subsequent arranged rotatable forming or shaping rollers 19, 20 and 21, 22, and possibly even others, still further form the band member 11.

It will also be observed that in the region of the sets of cooperating rollers 17, 18 and 19, 20 there is arranged a strip inserting station S. The latter incorporates a supply roller 23 which payes-off a supply coil or roll 24

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a continuous supply of a strip member 25 formed of elastic material e.g. rubber, plastic, etc., which first passes through a suitable lubricating device 26, which, for instance, applies an anti-friction substance such as talcum powder to the surface of this strip member 25 in order to improve its sliding properties. It will be recognized that the lubricating device 26 is supported by means of a rod 28 at the table or frame 29 of the forming station F. After passing through the lubricating device 26 the strip member 25 moves into a guide member 27, here shown as a guide rail 30 curved in the direction of travel of the band 11 and having an inlet end 31 and a discharge end 32. Guide rail 30 is internally provided with a throughpassing strip guide channel or passage 33 advantageously possessing a cross-sectional configuration which substantially corresponds to that of the strip member 25.

By referring to FIGURE 3 it will be seen that such strip member 25 preferably possesses a marginal substantially cylindrical bead portion 34 which is integral with a substantially flat, tangentially extending web or lip 35. Strip member 25 upon leaving the discharge end 32 of the curved guide rail 30 moves between the downstream adjacently disposed pair of cooperating forming rollers 19, 20 and beneath the band member 11 which already has the pre-formed downwardly flanged longitudinal edge portion 11b. It will be understood that the previous sets of rollers 15, 16 and 17, 18 only flex this longitudinal edge 11b to such an extent that the downwardly flanged portion is not yet completely formed into its final shape, in other words, is sufficiently open so that the cylindrical bead portion 34 of the strip member 25 can still be engaged by this downwardly flanged longitudinal edge portion 11b.

In FIGURE 2 there is shown in considerable detail the configuration of the cooperating forming rollers 19, 20, and it will be observed that the forward portion 19a and 20a of the forming rollers 19 and 20 respectively, are configured such that the substantially cylindrical bead portion 34 of the strip member 25 when passing between such rollers 19, 20 is seized and clamped by the flanged longitudinal edge portion 11b which, during this time is then further bent so that this strip member is embedded at this forward flanged longitudinal edge portion 11b. Advantageously, forming of the flanged edge portion 11b by the forming rollers 19, 20 takes place in such a manner that a torque is exerted upon the bead portion 34 of the strip member 25 which causes the web portion 35 to be solidly pressed against the section or portion 11d of the band member 11. This torque-exerting clamping action is important since it obviates the need for providing some additional fastening means for securing such strip member 25 against the surface of the band member 11 to ensure for a snug contact of such strip member at such portion 11d of the band member.

The band member 11 with the strip member 25 thus inserted in the downwardly flanged longitudinal edge portion 11b then leaves the set of forming rollers 19, 20 and arrives at the further set of forming rollers 21, 22 arranged at the delivery side of the forming station F. Assuming that this last-mentioned set of forming rollers 21, 22 is the last pair of forming rollers, then such apply the final forming operation to the rear and front flanged longitudinal edges 11a and 11b respectively, and, in so doing, downwardly flex this front longitudinal edge 11b to such an extent that the bead portion 24 of the strip member 25 is snugly and fixedly embedded at the band member 11. Owing to the fact that the sets of rollers 15 to 22 are driven, the band member 11 is continuously pulled-off its supply roll 10, and the strip member 25 which is clamped at the flanged edge portion 11b at the location of the set of rollers 19, 20 is also continuously pulled along with the band member 11 towards the discharge end of the forming station F. In this manner, there is ensured that a continuous supply of band 11 and

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strip member 25 moves towards such discharge end to then arrive at the cutting station C.

This cutting station C located at the discharge end of the forming station F receives the continually incoming band member 11 which now has been finally formed to possess the oppositely flanged longitudinal edge portions 62 and 63 of the slats 60. Considering the physical structure of this cutting station C it will be seen to comprise a housing 36 in which there is located a suitable conventional cutting device in the form of a cutting knife 37 actuated by any convenient actuating mechanism 38. In the illustrated embodiment this actuating mechanism 38 can be assumed to be a hydraulically or pneumatically operated cylinder 39 having a non-illustrated piston slidably located therein, wherein its piston rod 40 is operably connected with the cutting knife 37. Cylinder 39 is provided with an inlet connection or conduit 41 by means of which there is introduced a suitable pressurized fluid medium for displacing the non-illustrated piston and, thus, the cutting knife 37, so that the moving band member 11 can be cut into finite strips of predetermined length, to thereby form the slat members 60.

It will further be observed that the cutter housing 36 has an inlet opening 42 and a discharge opening 43 through which piercingly extends the band member 11. The inlet opening 42 and the discharge opening 43 possess a configuration which substantially corresponds to the cross-sectional configuration of the formed band member 11, such openings advantageously being only somewhat slightly larger to permit insertion and through-passage of this band member 11. It will be recalled that the band member 11 is continually travelling so that it is necessary that the cutting station C also moves along with this band member, and that the cutting operation only then be triggered when the cutting knife 37 and the band member 11 are moving in the same direction with the same speed. To this end, the housing 36 is provided at one end face with an elongated bracket or plate-like rod 44 at the ends of which there are rotatably mounted rollers 45 and 46. These rollers 45 and 46 ride upon a plate-like rail member 47, and since the bracket 44 is fixed to the housing 36 of the cutter device or mechanism 37, the entire cutter unit moves along the rail 47 in the feed direction of the band member 11. It will also be seen that a spring member 48 is disposed at the frontal face 49 of the cutter housing 36, one end is attached to this frontal face 49 and the other end articulated with a lug 50 which is fixedly connected to the track or rail member 47. This spring member 48 serves as a return device for bringing the cutter unit back into its rest or starting position after it has completed a cutting operation.

At the opposite face 51 of the cutter housing 36 there is secured an elongated rod 52 which terminates at a downwardly depending flap member 53 which provides an end or limit stop for the leading edge 11a of the moving band member 11. Now, this continuously moving band 11 after passing through the inlet opening 42 and the discharge opening 43 of the cutter housing 36 then comes to bear against the downwardly depending flap member 53. When this happens, the entire cutting mechanism is caused to move along the rail or track 47, against the action of the spring 48, in the feed direction of the band 11 until, after completing a certain distance of travel, the cutter housing 36 actuates a suitable terminal switch (not shown) which, then, in known manner delivers pressurized fluid medium in known manner to the actuating mechanism 38 to place the cutting knife 37 into operation, so that the band member 11 has a section cut-off to provide a slat 60 for a Venetian blind construction. It will further be appreciated that at such time as the leading edge 11e of the band member 11 bears against the downwardly depending flap member 53, both the band member 11 and the cutter housing 36

are moving at the same speed, so that the cutting operation takes place with both the cutting knife 37 and band member 11 moving at this common speed. When the slat 60 of predetermined finite length has been cut from the continuously moving band member 11, then the cutter mechanism, specifically the cutter housing 36 and its cutting knife 37 are returned back to their starting or rest position by means of the return spring 48 until such time as the leading edge 11e of the incoming band member 11 again bears against the downwardly depending flap member 53, whereupon the described cutting operation again repeats.

In FIGURE 4 I have shown in fragmentary, perspective view a plurality of slat members 60 which have been formed in accordance with the already considered inventive method and by means of the apparatus depicted in FIGURES 1 and 2. It will be observed that each such slat member 60 comprises the intermediate body portion 61 having the inwardly directed portion 64 and the oppositely flanged longitudinal edges 62 and 63. It will also be recalled that each of the flanged edges 62 are flexed inwardly and correspond to the upwardly flanged edge portion 11a of the band member 11 of FIGURE 1, whereas the flanged longitudinal edges 63 are flexed outwardly and correspond to the downwardly flexed portion 11b. It will further be seen that the upper outwardly flanged longitudinal edge portion 63 of each slat member 60 has embedded between such portion 63 and the intermediate body portion 61 the previously considered strip member 25. Specifically, the substantially cylindrical bead portion 34 is securely seized by the flanged edge portion 63, and since during the forming operation a torque has been exerted on the bead 34 of this strip member 25 the integral web or lip portion 35 is snugly pressed and adheres to the inwardly bent portion 64 of the intermediate portion or section 61 of the relevant slat 60 and which is adjacent to the flanged edge portion 63. Each of the slat members 60 is provided at each end with a guide bolt 65, only one of which is shown in FIGURE 4, and which in known manner connect with guide tapes for drawing up or lowering the Venetian blind. The manner of mounting these slats 60 to their guide tapes is well known to the art, for instance has been disclosed in my previously mentioned United States Patent 2,840,156. It will further be observed that the guide bolts 65 are attached to the associated lateral end of each slat 60 by means of small plates 66 which are riveted or otherwise fixed, at 67, at the inner face of such slats 60.

By further referring to FIGURE 4 it can be seen that in the illustrated closed position of the slats 60 the inwardly flanged portion 62 of any given slat bears against the tangential web or lip portion 35 engaged at its substantially cylindrical bead 34 by the upper flanged longitudinal edge 63 of the next adjacent or lower slat 60. Since this web portion 35 covers the outer surface of the inwardly bent section 64 of each slat 60 such that the inwardly bent lower longitudinal edge 62 of each slat 60 rests upon such web portion 35 of the inserted strip member 25 of the following slat when these slats 60 are drawn together i.e. displaced into closed position, it is thus possible to avoid any metallic contact between neighboring slats 60 and to effectively dampen impact of the lower flanged longitudinal edge 62 of one slat 60 with the adjacent inwardly bent section 64 of the following or lower slat 60. Consequently, there is avoided any excess or undesired noise during operation of the Venetian blind. Furthermore, the enamel or varnish coating provided at the slat 60 is protected and hence does not tend to peel.

Finally, it is mentioned that the strip member 25 may be formed of rubber, plastic, or any other suitable elastic material. Although this strip member 25, in most cases, is formed of transparent material it can, however, be given any desired color or ornamental design. Naturally, when starting production the free leading end is inserted between the forming rollers 19, 20 and clamped at the

flanged edge 11b so that movement of the band member 11 automatically pulls the strip member from its supply roller 23.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, as modifications will be obvious to those skilled in the art.

What is claimed is:

1. Method for the production of slat members for Venetian blinds comprising the steps of: continuously delivering a band member to a forming station, pre-forming at least one longitudinal edge of the moving band member at the forming station to possess a pre-formed flanged longitudinal edge, continuously introducing a strip member into the region of said pre-formed flanged longitudinal edge by the pulling action of said moving band member upon said strip member during travel of the band member through the forming station, further forming said pre-formed flanged longitudinal edge such that it snugly engages and embeds the strip member within the further formed flanged longitudinal edge, and then cutting said band member with the embedded strip member into predetermined finite sections, to thereby form slat members for Venetian blinds.

2. Method for the production of slat members for Venetian blinds as defined in claim 1 wherein said moving band member is cut into said predetermined finite sections during travel.

3. Method for the production of slat members for Venetian blinds as defined in claim 1 wherein the opposite longitudinal edge of said band member is also flanged during movement through the forming station.

4. Method for the production of slat members for Venetian blinds as defined in claim 3 wherein said opposite longitudinal edge is flanged in a direction opposite said one longitudinal edge.

5. Method for the production of slat members for Venetian blinds as defined in claim 1 including the step of applying an anti-friction substance to the surface of said strip member prior to its introduction into said pre-formed flanged longitudinal edge to thereby improve its sliding properties.

6. Method for the production of slat members for Venetian blinds comprising the steps of: continuously delivering a band member to a forming station, pre-forming at least one longitudinal edge of the moving band member at the forming station to possess a pre-formed flanged longitudinal edge, continuously introducing a strip member having a bead portion and an integral tangential web into the region of said one pre-formed flanged longitudinal edge by the pulling action of said moving band member upon said strip member during travel of the band member through the forming station, further forming said one pre-formed flanged longitudinal edge such that it snugly engages about the bead portion of said strip member to apply a torque at said strip member in the flanging direction which urges said tangential web portion into snug surface contact with said band member to thereby embed the strip member within the further formed flanged longitudinal edge by virtue of the clamping action exerted by said further formed flanged longitudinal edge upon said bead portion of said strip member, and then cutting said band member with the embedded strip member into individual slat members of predetermined length for use in Venetian blinds.

7. Method for the production of slat members for Venetian blinds as defined in claim 6 including the step of flanging the opposite longitudinal edge of said band member in a direction opposite the flanging of said one longitudinal edge during movement of the band member through the forming station.

8. Method for the production of slat members for Venetian blinds comprising the steps of: continuously delivering a band member to a forming station, pre-forming at least one longitudinal edge of the moving band

member at the forming station to possess a pre-formed flanged longitudinal edge, continuously introducing a strip member having a substantially cylindrical bead portion and an integral tangential web into the region of said one pre-formed flanged longitudinal edge by the pulling action of said moving band member upon said strip member during travel of the band member through the forming station, further forming said one pre-formed flanged longitudinal edge such that it snugly engages about the substantially cylindrical bead portion of said strip member to apply a torque at said strip member which urges said tangential web portion into snug surface contact with said band member to thereby embed the strip member within the further formed flanged longitudinal edge solely by virtue of the clamping action exerted by said further formed flanged longitudinal edge upon said substantially cylindrical bead portion of said strip member, and then cutting said band member with the embedded strip member into individual slat members of predetermined length for use in Venetian blinds.

9. Apparatus for the production of slat members for Venetian blinds comprising, in combination: a delivery station for continuously supplying a band member to a forming station, a forming station for receiving the band member from said delivery station and for forming the same during its travel into a predetermined configuration, said forming station including means for pre-forming at least one longitudinal edge of said band member to possess a pre-formed flanged longitudinal edge and means for further forming said one pre-formed flanged longitudinal edge, means for continuously introducing a strip member into the region of said one pre-formed flanged longitudinal edge during travel of said band member and prior to further forming thereof by said further forming means, said further forming means flanging said one pre-formed flanged longitudinal edge to an extent such that it snugly engages and embeds said strip member within said one flanged longitudinal edge, said travelling band member continuously pulling said strip member into the region of said one pre-formed flanged longitudinal edge.

10. Apparatus for the production of slat members for Venetian blinds as defined in claim 9 wherein said means for pre-forming and said means for further forming said one pre-formed flanged longitudinal edge are also constructed to flange the opposite longitudinal edge of said band member in a direction opposite the flanging performed at said one longitudinal edge.

11. Apparatus for the production of slat members for Venetian blinds as defined in claim 9 further including cutter means for cutting the band member together with the embedded strip member into predetermined finite sections to form slat members for use in Venetian blinds.

12. Apparatus for the production of slat members for Venetian blinds as defined in claim 11 wherein said cutter means includes a cutting device, means mounting said cutting device for movement to and fro in the direction of travel of said band member, stop means operably connected with said cutting device acted upon by the leading edge of said band member to impart the same speed of movement to said cutting device as the speed of movement of said band member prior to cutting of said band member into said predetermined finite sections.

13. Apparatus for the production of slat members for Venetian blinds as defined in claim 12 wherein said cutter means includes mechanism for returning the cutting device into its starting position when the leading edge of said band member is not in contact with said stop means.

14. Apparatus for the production of slat members for Venetian blinds as defined in claim 9 wherein said means for continuously introducing a strip member into the region of said one pre-formed flanged longitudinal edge includes a curved guide member internally provided with a guide channel possessing a cross-section substantially corresponding to the cross-section of said strip member.

15. Apparatus for the production of slat members for Venetian blinds as defined in claim 14 wherein said means for continuously introducing a strip member into the region of said one pre-formed flanged longitudinal edge further includes a device for applying an anti-friction substance to said strip member prior to passage through said curved guide member.

16. Apparatus for the production of slat members for Venetian blinds as defined in claim 9 wherein said means for pre-forming said one longitudinal edge includes at least one pair of cooperating forming rollers, said means for further forming said one pre-formed flanged longitudinal edge also incorporating at least one pair of cooperating forming rollers.

17. Apparatus for the production of slat members for Venetian blinds comprising, in combination: a delivery station for continuously supplying a band member to a forming station, a forming station for receiving the band member from said delivery station and for displacing and forming such band member during its travel into a predetermined configuration, said forming station including means for pre-forming at least one longitudinal edge of said band member to possess a pre-formed flanged longitudinal edge and means for further forming said one pre-formed flanged longitudinal edge, means for continuously introducing a strip member possessing a bead portion and an integral tangential web into the region of said one pre-formed flanged longitudinal edge during travel of said band member and prior to further forming thereof by said further forming means, said further forming means flanging said one pre-formed flanged longitudinal edge to an extent that it snugly engages with said bead portion and applies a torque thereto to embed said strip member within said one pre-formed flanged longitudinal edge and to urge said tangential web into snug contact with the surface of said band member, said travelling band member continuously pulling said strip member into the region of said one pre-formed flanged longitudinal edge prior to engagement by said further forming means.

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JOHN F. CAMPBELL, *Primary Examiner.*