April 29, 1941. H. W. BELL 2,239,871

LINK MAT CONSTRUCTION

Filed Dec. 6, 1938

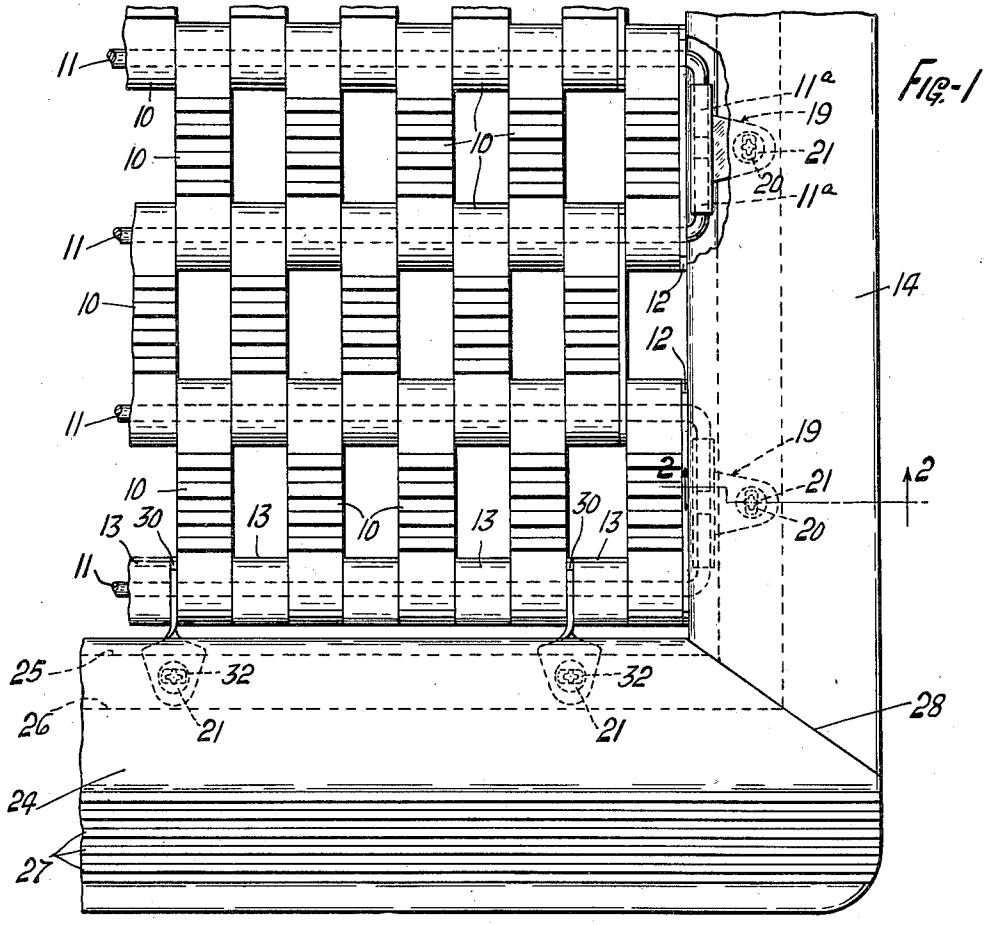


FIG.-1

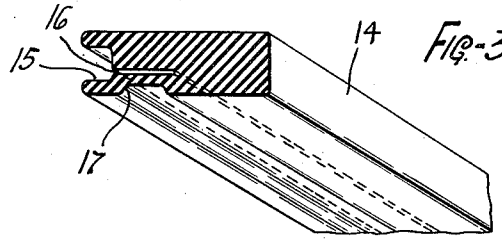


FIG.-3

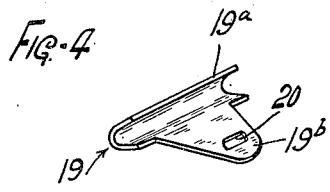


FIG.-4

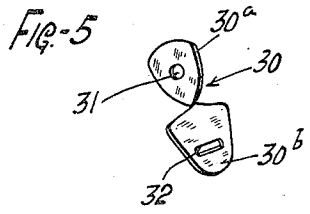


FIG.-5

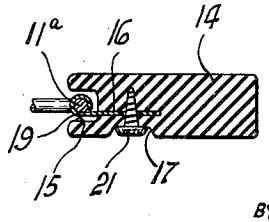


FIG.-2

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LINK MAT CONSTRUCTION

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Application December 6, 1938, Serial No. 244,193

5 Claims. (Cl. 20—78)

This invention relates to link mat constructions, and more especially it relates to improvements in edging or nosing strips for articulated mats, and to improved means for attaching said edging strips and nosing strips to the mat structure.

The invention is an improvement upon the structure of my prior United States Patent No. 2,142,832, issued January 3, 1937. The chief objects of the invention are to improve upon my prior construction aforesaid by simplifying the elements thereof; providing improved appearance; providing substantially identical means for attaching the nosing strips and the lateral edging strips; and providing means for firmly attaching the edging strips and nosing strips, yet enabling the same readily to be removed if desired. Other objects will be manifest as the description proceeds.

Of the accompanying drawing:

Figure 1 is a fragmentary plan view of a mat embodying the invention;

Figure 2 is a section on the line 2—2 of Fig. 1;

Figure 3 is a sectional perspective view of the edging strip shown in Fig. 2;

Figure 4 is a perspective view of a clip employed for attaching edging strips to the mat, before the same is crimped into place thereon; and

Figure 5 is a perspective view of a clip employed for attaching nosing strips to the mat.

Referring to the drawing, the mat shown comprises a multiplicity of rubber blocks 10, 10 that are arranged in overlapping, laterally abutting relation, and are hingedly joined to each other by transversely extending parallel wires 11, 11, which wires extend freely through apertures formed in the blocks to provide an articulated structure that is sufficiently flexible to enable it to be rolled up transversely of said wires. At the sides of the mat each block 10 is provided with a metal wear plate 12, and the two wires that extend through each wear plate are bent at right angles, toward each other, so as to overlie said wear plates, as shown at 11*a*, 11*a*, Fig. 1. At the ends of the mat, cylindrical spacer members 13 are mounted on the wires between adjacent blocks 10.

Attached to each side of the mat is an edging strip 14, the construction of which is best shown in Fig. 3. As shown, the edging strip 14 is an elongate structure of rubber or other flexible composition, that may be made in a continuous strip by extrusion and subsequently cut to length and vulcanized. The edging strip 14 is substantially the same thickness as the blocks 10 of the mat, and has one marginal face formed with a relatively wide longitudinally extending groove 15. Opening into the bottom of groove 15 is a slot 16 that extends longitudinally of the strip, said slot being relatively narrow as compared to groove 15, but much deeper than the latter. The bottom face of the edging strip is formed with a longitudinally extending groove or recess 17 that is relatively wide and shallow, the recess 17 being disposed below the slot 16.

The edging strip 14 is attached to the mat structure by means of a plurality of metal clips 19, 19. Each clip 19 consists of a single piece of sheet metal that comprises a sleeve-like portion 19*a* adapted to be clamped about the adjacent, angularly-bent end portions 11*a* of two of the frame wires 11, and a tongue-like portion 19*b* projecting laterally from said sleeve portion, said tongue portion being formed with an elongated aperture or slot 20 extending parallel to said sleeve-like portion. Clip portion 19*a* is open, as shown in Fig. 4, before being applied to the wires 11, and after being mounted upon said wires it may swivel thereon. The arrangement is such that when the clips 19 are mounted upon the wires 11 as described, the edging strip 14 may be applied to the mat in abutting relation to the wear plates 12 thereof, the tongues 19*b* of the clips 19 being received in the recess 16 of the edging strip and the sleeve-like portions of the clips being received in the marginal groove 15 thereof, so as completely to be concealed thereby. The edging strip and the clips are secured together by means of self-tapping screws 21 that pierce the rubber structure between the slot 16 and recess 17, the heads of the screws seating in the latter, and the threaded bodies of the screws passing through the respective slots 20 of the clips. The screws 21, which as shown are known to the trade as Phillips recessed head screws, extend only part way through the strip 14 and are invisible from the top thereof. The provision of the slots 20 in the clips 19 makes it possible easily to insert the screws 21 at the proper places without providing bores or apertures in the strip for receiving said screws.

Attached to each end of the mat are nosing strips, such as the nosing strip 24, Fig. 1. The nosing strips are similar to the edging strips 14 in that each is provided with a groove 25 in one marginal face thereof, there being a narrow longitudinally extending recess or slot 26 in the strip opening into the bottom of said groove, and a groove (not shown) in the bottom face of the

strip similar to groove 17 of edging strips 14. The nosing strips 24 are somewhat wider than the edging strips 14, but are of the same thickness, the marginal portion thereof remote from the grooved margin tapering to a blunt nose, which has its upper face formed with longitudinal fluting 27. The edging strips 14 and nosing strips 24 may be spliced together at the corners of the mat, as shown at 28, Fig. 1.

For securing the nosing strips 24 to the mat, a plurality of metal clips 30 are provided. As is best shown in Fig. 5, each clip 30 consists of a metal plate that has been centrally twisted on its longitudinal axis through an angle of 90° to provide a body portion 30*a*, and a tongue portion 30*b*, the planes of said portions being disposed at right angles to each other. The body portion 30*a* is formed with an aperture 31 of sufficient size to receive a wire 11, and the tongue portion 30*b* is formed with a transversely disposed slot 32 similar to slot 20 of clip 19. The clips 30 are swiveled upon the wires 11 at each end of the mat, at spaced intervals between blocks 10 and spacer members 13, the wires extending freely through the apertures 31 of the clips. The tongue portions 30*b* of the clips extend into the recesses 26 of the respective nosing strips and are secured therein by self-tapping screws 21 in the manner described with relation to the edging strips 14.

The invention provides a mat of attractive appearance and durable, sturdy construction. Because the clips 30 are swiveled on the wires 11, the mat may readily be rolled up in the direction of its length. The features of attaching the edging strips and the nosing strips in the same manner makes for simplicity and uniformity of construction.

Modification may be resorted to without departing from the spirit of the invention, or the scope thereof as defined by the appended claims.

What is claimed is:

1. In a link mat construction, the combination of a mat body including a metal frame, a marginal strip of flexible material extending along a side of the mat, said strip being formed with a longitudinally extending groove in one marginal face thereof and formed rearwardly of said groove with a relatively narrow longitudinally extending slot that is open at one side throughout its entire length to the bottom of said groove, said groove and slot being coextensive with said strip, metal clips secured at spaced points to said metal frame positioned in the groove of said strip and formed with integral tongue portions extending into said slot, and securing means extending only partly through the strip, from the bottom thereof, and concealed from the top thereof, engaging said tongue portions for attaching the strip to the body.

2. A combination as defined in claim 1 in which the last mentioned means are screws that have threaded engagement with the material of the marginal strip.

3. In a link mat construction, the combination of a mat body including a metal frame, a marginal strip of flexible material extending along a side of the mat, said strip being formed with a longitudinally extending groove in one marginal face thereof and formed rearwardly of said groove with a relatively narrow longitudinally extending slot that is open at one side throughout its entire length to the bottom of said groove, said groove and slot being coextensive with said strip, metal clips swiveled at spaced points upon said metal frame positioned in the groove of said strip and formed with tongue portions extending into said slot, and screws threaded partly through the marginal strip from the bottom thereof and engaging the respective clip-tongues for securing said strip to the mat body, said marginal strip having a longitudinally extending recess in the bottom thereof in which the heads of the screws are received.

4. In a link mat construction, the combination of a mat body comprising links hingedly mounted upon a wire frame, a marginal strip of flexible material extending along a side of the mat and formed with a longitudinally extending slot open to the margin of the strip adjacent the mat, metal clips swiveled at spaced points on said wire frame, between laterally adjacent links, each clip having an apertured planar body portion through which a frame-wire extends and an integral tongue portion disposed in a plane at right angles to the plane of said body portion, said tongue portion extending into the slot in said marginal strip, and fastening means extending into said strip, transversely thereof, and engaging said tongue portion to secure the strip to the mat body.

5. A nosing strip for mats consisting of an elongated structure of flexible material formed with longitudinally extending groove in one marginal face thereof, and formed rearwardly of said groove with a relatively narrow longitudinally extending slot that is open at one side throughout its entire length to the bottom of said groove, the bottom face of the strip being formed with a shallow longitudinally extending recess disposed beneath said slot.

HARRY W. BELL.