

March 13, 1962

C. S. REED

3,024,475

SECTIONAL INSULATOR AND SHIELD ASSEMBLY

Filed May 23, 1960

2 Sheets-Sheet 1

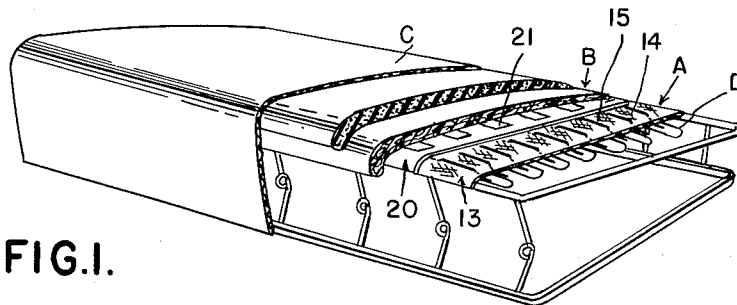


FIG. 1.

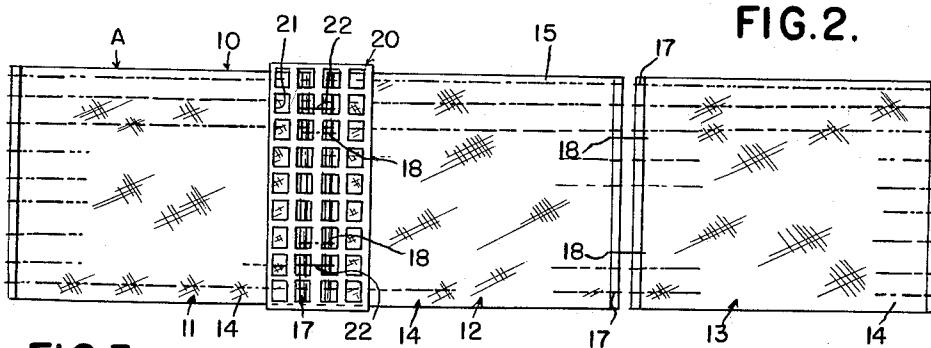
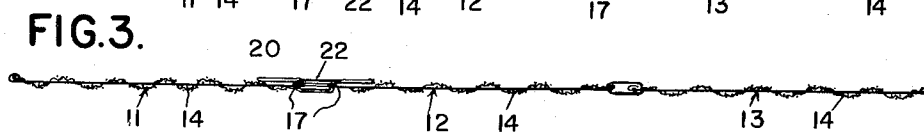


FIG. 2.



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FIG. 4.

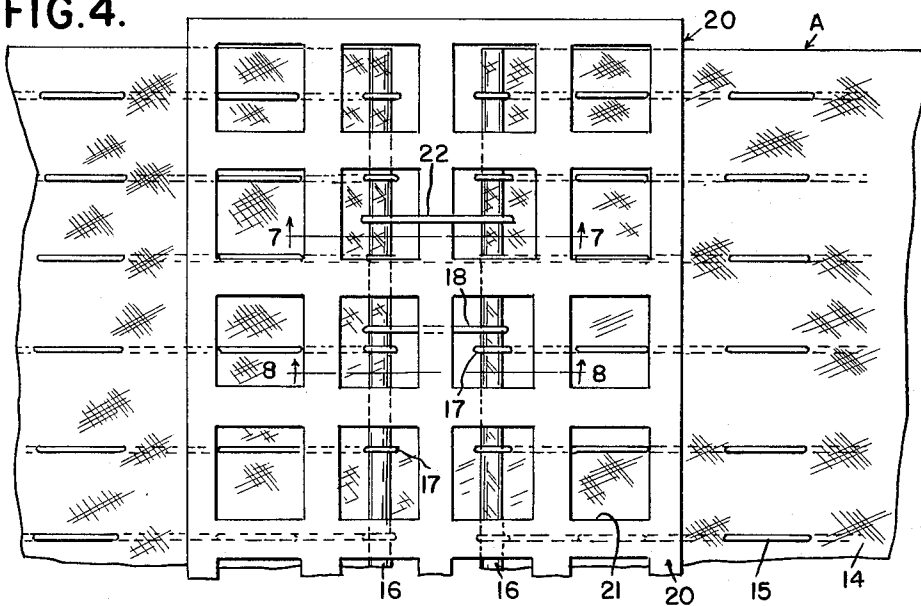
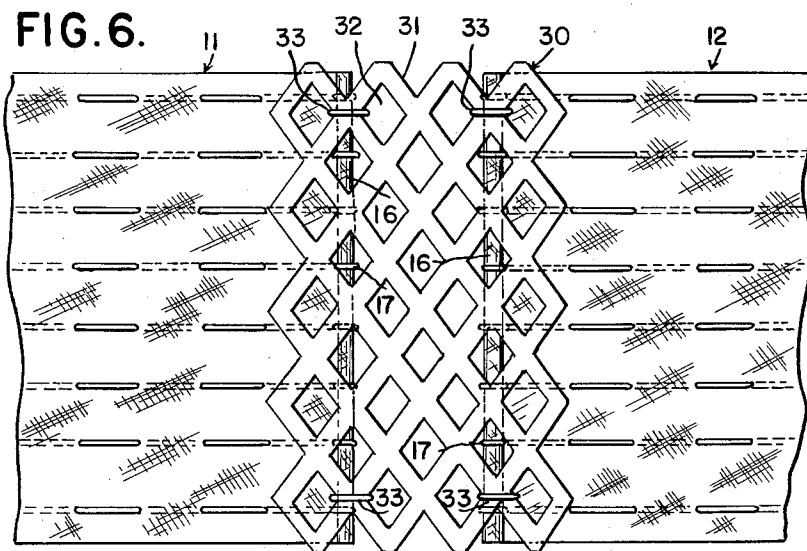


FIG. 6.



INVENTOR.  
CLAIR S. REED

BY

*Whittmore, Hulbert & Belknap*  
ATTORNEYS

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**SECTIONAL INSULATOR AND SHIELD ASSEMBLY**  
Clair S. Reed, Wayne, Mich., assignor to Van Dresser  
Specialty Corporation, Warren, Mich., a corporation  
of Michigan

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8 Claims. (Cl. 5—354)

This invention relates generally to substantially flat insulators having hinged connected sections for use between the padding for an exterior trim material and a supporting spring structure of an upholstered structure, and refers more particularly to a sectional insulator and shield assembly wherein shields bridge the joints between the hinged connected sections of the insulator to preclude such joints from abrading or tearing the padding during relative movement between said sections.

One of the essential objects of the invention is to provide the sheet material forming the sections of the insulator with straight reinforcing strands that are threaded through said sheet material and have at opposite ends thereof loops that embrace rolled or curled end portions of said sheet material to hold said rolled or curled end portions and to prevent objectionable creeping or shifting of the reinforcing strands relative to such sheet material.

Another object is to hingedly connect the sections of the insulator by means of widely spaced hog rings that embrace adjacent rolled or curled end portions of the sheet material of the sections.

Another object is to prevent any objectionable abrasion or tearing of the padding by either the loops of the reinforcing strands or the connecting hog rings at the joints between the sections of the insulator during relative movement of said sections while in use, by providing substantially flat shields of a flexible or extensible type that bridge the joints between the sections and effectively insulate the padding from the loops of the reinforcing strands and the connecting hog rings.

Another object is to provide a structure wherein the shields may be formed from plastic material such as vinyl resin, rubber and the like having good wear resistance and capable of silent engagement with the loops of the reinforcing strands and the connecting hog rings.

Another object is to provide a structure wherein the shields are perforated or have an open mesh or latticework so that substantially uniform ventilation is assured, so that portions of the material of the shields between the perforations may be embraced by suitable means for fastening the shields to adjacent sections of the insulator, and so such openwork may receive portions of the material of the padding to thereby resist relative movement between the padding and the sections of the insulator.

Another object is to provide a sectional insulator and shield assembly that is simple in construction, economical to manufacture and efficient in use.

Other objects, advantages and novel details of construction of this invention will be made more apparent as this description proceeds, especially when considered in connection with the accompanying drawings wherein:

FIGURE 1 is a perspective view of an upholstered structure provided with a sectional insulator and shield assembly embodying my invention, with parts broken away and in section.

FIGURE 2 is a top plan view of the sectional insulator and shield assembly, with one shield removed.

FIGURE 3 is a side elevational view of the sectional insulator and shield assembly illustrated in FIGURE 2.

FIGURE 4 is an enlarged fragmentary top plan view of a portion of the assembly illustrated in FIGURE 2.

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FIGURE 5 is a top plan view of the shield illustrated in FIGURE 2.

FIGURE 6 is a fragmentary top plan view of a slightly modified assembly.

FIGURE 7 is a sectional view taken substantially on the line 7—7 of FIGURE 4.

FIGURE 8 is a sectional view taken substantially on the line 8—8 of FIGURE 4.

Referring to the drawings, A is a sectional insulator and shield assembly embodying my invention disposed between a padding B for an exterior trim material C and a supporting spring structure D of an upholstered structure.

As shown, the insulator 10 of the assembly has three separate sections 11, 12 and 13 respectively, that are similar in construction. Each of said sections has a flexible sheet 14, preferably of burlap, that is reinforced by spaced substantially parallel straight strands 15, preferably of wire, threaded lengthwise through said sheet. Opposite ends of each sheet 14 are rolled or curled to form substantially cylindrical cords or beads 16, and opposite ends of the reinforcing strands 15 have loops 17 that embrace the beads 16. Thus the loops 17 hold the cylindrical beads 16 and prevent objectionable creeping or shifting of the reinforcing strands 15 relative to the sheet 14. Adjacent ends of the sections 11, 12 and 13 respectively are hingedly connected together by means of transversely spaced hog rings 18 that embrace adjacent cylindrical beads 16 of the sections.

The substantially flat shields 20 for bridging the joints between the sections 11, 12 and 13 respectively of the insulator are flexible and are similar in construction, hence only one of them will be shown and described. Preferably, such shield 20 is molded from a suitable plastic material such as vinyl resin, rubber or the like having good wear resistance and capable of silent engagement with the loops 17 and hog rings 18. Also, such shield 20 has a multiplicity of perforations 21 therein to insure substantially uniform ventilation, to enable portions of the material of the shield between the perforations to be embraced by suitable means for fastening the shield to adjacent sections of the insulator, and to enable the perforations 21 to receive portions of the material of the padding B to thereby resist relative movement between the padding and the sections of the insulator. Any suitable means such as two widely spaced rings 22 may be employed to attach the shield 20 in overlapping relation to adjacent sections of the insulator. Preferably such rings 22 embrace portions of the shield 20 between the perforations 21 and embrace the cylindrical beads 16 at adjacent ends of the sections of the insulator. If desired, the hog rings 18 may be eliminated entirely, and the rings 22 alone may be used to hingedly connect together adjacent ends of the sections and to connect the shields (20 or 30) to said adjacent sections.

In FIGURE 6, I have shown a slight modification wherein the shield 30 has a latticework of the expanded type wherein the material 31 between the perforations 32 extends on the bias or diagonally with respect to the longitudinal median line of the shield. Such shield 30 is adapted to stretch and thus is extensible. Also; this type of shield 30 is adapted to serve as a yieldable gusset between adjacent sections 11, 12 and 13 respectively of the insulator to thereby overcome to a degree the inability of the straight reinforcing strands 15 to stretch. For example, the sections 11, 12 and 13 respectively of the insulator may be shorter and may be spaced wider apart with the cylindrical beads 16 underlying the shield 30 in spaced relation to opposite side edges thereof, as shown in FIGURE 6, and suitable means such as hog rings 33 may embrace such beads 16 and the material 31 of the

shield between the perforations 32 to attach the shield to adjacent ends of said sections.

Thus, from the foregoing, it will be apparent that the insulator A is used between the padding B and the supporting spring structure D, and that the shields (either 20 or 30) overlie and bridge the joints between the sections of the insulator and thus are between the latter and the padding B. Such shields effectively protect the padding B from adjacent formed ends of the sections of the insulator and thereby preclude objectionable abrasion or tearing of such padding. These shields also improve the performance of the sectional insulator A wherein straight reinforcing strands 15 are employed, and enhance the action of the respective sections 11, 12 and 13 respectively of the insulator.

What I claim as my invention is:

1. A sectional insulator and shield assembly for use between the padding for an exterior trim material and a supporting spring structure of an upholstered spring structure to support the padding upon the spring structure; comprising a substantially flat insulator having two sections of flexible sheet material reinforced by spaced parallel wires threaded through said material at spaced intervals, said sections being in end-to-end relation, the ends of said wires terminating adjacent the ends of said sections, said wires and opposite edge portions of said sheet being so formed as to cooperate with each other to resist withdrawal of said wires from said material, and a substantially flat flexible, resilient gusset connected to adjacent ends of said sections and overlying adjacent formed ends of said wires to protect the padding from said formed ends.

2. A sectional insulator and shield assembly for use between the padding for an exterior trim material and a supporting spring structure of an upholstered spring structure to support the padding upon the spring structure; comprising a substantially flat insulator having at least two separate sections of reinforced sheet material, rigid means hingedly connecting adjacent ends of said sections, a substantially flat flexible shield overlying and bridging adjacent end portions of said sections and the connecting means therebetween to prevent abrasion of the padding by said rigid connecting means, and means connecting said shield to both of said sections.

3. The structure defined in claim 2, wherein the shield has a multiplicity of perforations, and at least a portion of the connecting means for said shield extends through certain of said perforations and embraces portions of the material of said shield intermediate said certain perforations.

4. The structure defined in claim 2, wherein the edges of the perforations are disposed diagonally with respect to said adjacent ends.

5. A sectional insulator and shield assembly for use between the padding for an exterior trim material and a supporting spring structure of an upholstered spring structure to support the padding upon the spring structure; comprising a substantially flat insulator having at least two separate sections, each including a flexible sheet and spaced substantially parallel straight reinforcing strands threaded through said sheet, opposite ends of each sheet being curled to form substantially cylindrical beads, opposite ends of said reinforcing strands having loops em-

bracing said beads to hold said beads and to prevent creeping of the reinforcing strands, hog rings embracing adjacent cylindrical beads of said sections and hingedly connecting adjacent ends of said sections, a substantially flat flexible shield overlying and bridging adjacent hingedly connected end portions of said sections and overlying said hog rings and adjacent loops to prevent abrasion of the padding by said hog rings and adjacent loops, and means attaching said shield to the adjacent cylindrical beads of said sections.

6. A sectional insulator and shield assembly for use between the padding for an exterior trim material and a supporting spring structure of an upholstered spring structure to support the padding upon the spring structure; comprising a substantially flat insulator having at least two separate sections, each including a flexible sheet and spaced substantially parallel straight reinforcing strands threaded through said sheet, opposite ends of each sheet being curled to form substantially cylindrical beads, opposite ends of said reinforcing strands having loops embracing said beads to hold said beads and to prevent creeping of the reinforcing strands, a substantially flat flexible shield overlying and bridging adjacent end portions of said sections and overlying adjacent loops to prevent abrasion of the padding by said adjacent loops, and a common means hingedly connecting together adjacent ends of said sections and connecting said shield to said sections, including means embracing portions of said shield and embracing adjacent cylindrical beads of said sections.

7. A sectional insulator and shield assembly for use between the padding for an exterior trim material and a supporting spring structure of an upholstered spring structure to support the padding upon the spring structure; comprising a substantially flat insulator having at least two separate sections of wire reinforced sheet material, adjacent ends of said sections being formed into substantially cylindrical beads, a substantially flat flexible shield overlying and bridging adjacent ends of said sections and said cylindrical beads, and means connecting said shield to said cylindrical beads and hingedly connecting together the adjacent ends of said sections.

8. An insulator for use between the padding for an exterior trim material and a supporting spring structure of an upholstered spring structure to support the padding upon the spring structure; comprising a substantially flat flexible sheet and spaced substantially parallel straight reinforcing strands threaded through said sheet, opposite edge portions of each sheet being curled to form substantially cylindrical beads, opposite ends of said reinforcing strands having loops embracing said beads to hold said beads and to prevent creeping of the reinforcing strands.

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