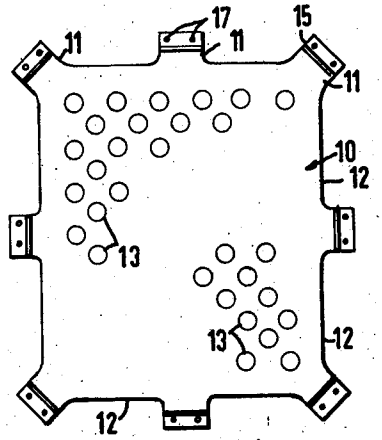
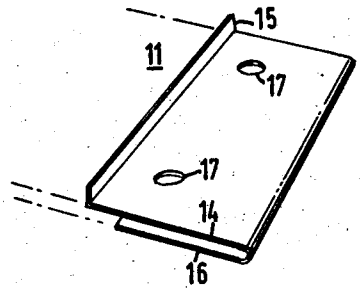
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CUSHION SUPPORTING MEMBERS

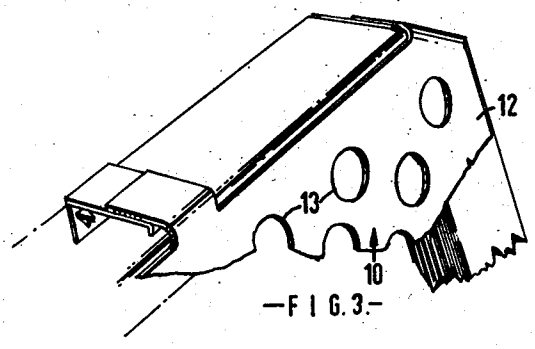
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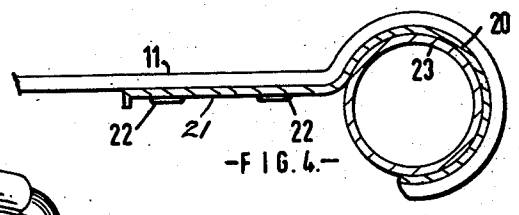
-FIG 1.-



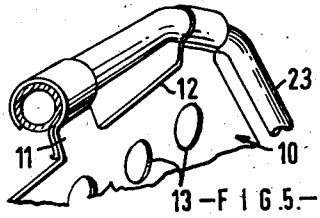
-FIG 2.-



-FIG. 3.-



-FIG. 4.-



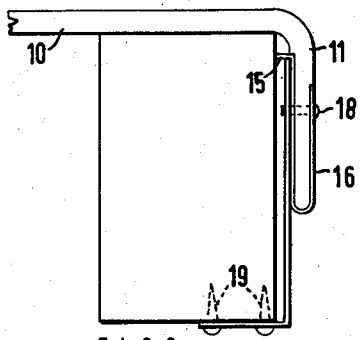
-FIG 5.-

INVENTOR:
NORMAN GRIMSHAW
BY
Lieber, Lieber & Nilles
ATTYS

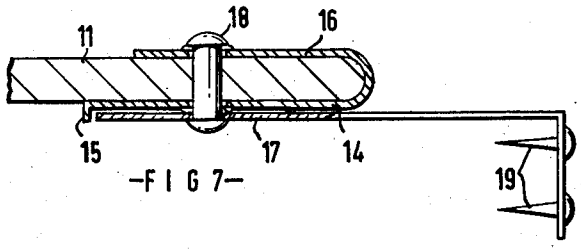
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CUSHION SUPPORTING MEMBERS

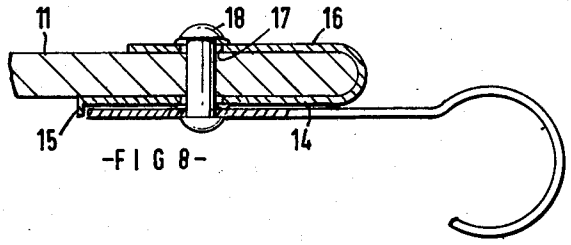
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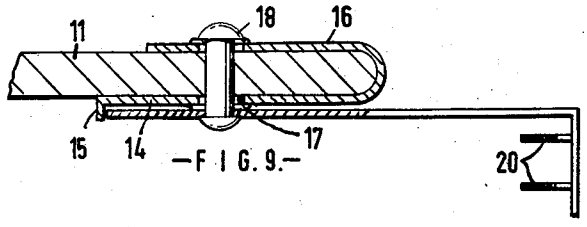
-FIG 6-



-FIG 7-



-FIG 8-



-FIG. 9.-

INVENTOR:
NORMAN GRINSHAW
BY
Lieber, Lieber & Nilles
ATT'YS

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CUSHION SUPPORTING MEMBERS

Norman Grimshaw, Ashton-under-Lyne, England, assignor to Vitaform Limited, a company of Great Britain

Filed Sept. 25, 1961, Ser. No. 140,436
3 Claims. (Cl. 160—382)

This invention concerns supports, to be attached to the framework of a piece of furniture, for supporting for instance, a cushion. The term furniture is to be construed as including motor vehicle seating, household seating, bedding and the like, also rail and aircraft seating, seat transport seating, bedding, and the like.

Throughout the following description only chair seating will be referred to for simplicity.

It is well known to use as the cushion support for a chair interwoven bands of webbing, which may be resilient or otherwise, springs, combinations of springs and wires and also non-interwoven bands normally of rubber or rubberized fabric.

One of the difficulties associated with the methods used for securing cushion supports lies in the length of time taken to secure the support to the frame.

Moreover in some cases the support given to the cushion has been unevenly distributed and localised and relatively large non-supported areas exist which tend, after a period of use, to result in deformation of the cushion.

The object of the present invention is to provide an improved form of support which can easily be attached to the furniture frame and will tend to give an even support to the cushion.

The invention in its broadest aspect consists in a support, moulded from a material of a kind that will flow when subjected to heat and pressure and which is resilient when cooled, adapted to be secured to the framework of an article of furniture, characterized in that there are provided, at or adjacent the periphery of the support, means whereby the latter may be attached under tension at a number (exceeding two) of suitable disposed separate places to the article of furniture, such means being bonded to the support during its moulding.

The invention will be described further, by way of example, with reference to the accompanying drawings which illustrate diagrammatically a form of support and the manner in which such is attached to the framework of an article of upholstered furniture, and in which:

FIG. 1 is a plan view of one form of the support,

FIG. 2 is a perspective view of a tongue of the support shown in FIG. 1 showing the member bonded to it whereby the support can be attached to the framework of an article of furniture,

FIG. 3 is a perspective view of a corner of the support of FIG. 1 when attached to the framework of an article of furniture to be upholstered.

FIG. 4 is a part-sectional view showing a modified means of attachment to the framework.

FIG. 5 is a view similar to that of FIG. 3 showing the modified means of attachment.

FIG. 6 is a part-sectional elevation showing a means for attaching the support to the framework.

FIGS. 7, 8 and 9 are detail sections on an enlarged scale showing various means for the attachment of the support to the framework.

Like reference numerals on the several figures of the drawings denote like parts throughout the specification.

FIG. 1 illustrates a cushion support comprising a sheet of rubber which is moulded to provide a support area **10** having outwardly extending tongues **11**. Considering the extremities of the tongues **11** as defining the overall size of the support, it is approximately rectangular in shape with cut-outs **12** along each side. The cut-outs **12** are two in number on each side of the support **10** and thus tongues **11** are formed at the four corners and in the central region of each side.

Within the area **10** are a plurality of apertures **13** which may be of any suitable shape and disposition depending upon the use to which the support is to be put.

The tongues **11** are each provided with a metallic member bent into the form of a U having one arm longer than the other. The longer arm **14** is provided with a flange **15** at its end and the flange is directed away from the shorter arm **16**. Aligned holes **17** are made in the arms for a purpose hereafter referred to.

To secure the member so formed to the tongues **11** the members are treated with a bonding agent and the uncured material for the support, together with the members are suitably placed in a metal mould and the assembly so formed is subjected to pressure and heat to cure the rubber and bond the members thereto. Whilst the assembly is in the mould, rubber flows into the holes **17** in the members and ensures efficient bonding by keying the rubber to the members.

In the modified form of attachment shown in FIG. 4, the member comprises a metal strip **20** of substantially question mark shape. In the straight portion **21** of the member are drilled a number of holes **22**, say three, the purpose of which is to provide for efficient bonding of a rubber strip to the member.

The member is treated on its outer surface (the surface of larger radius insofar as the arcuate portion is concerned) with a chemical bonding agent and is placed in the mould with the uncured rubber for the support and a bond is formed in the manner described above.

The support so formed is clipped on to a tubular member **23** which is part of the framework of a chair in the manner shown in FIG. 5.

FIGS. 7, 8, and 9 illustrate various forms of device which may be attached to the members described to enable the support to be attached, under tension to an article of furniture. FIG. 6 shows a support attached to part of the framework of an article of furniture by the device illustrated in FIG. 7.

FIGS. 7 and 9 illustrate an attachment device of L-shape. One arm of the L is provided with apertures which correspond in size and disposition to the holes **17** of the members above described. The device is secured to the support by means of rivets **18**, studs or the like. The other arm of the L is provided either with holes through which can pass screws, nails, pins or the like **19**, as shown in FIG. 7 or with punched out spikes **20** as shown in FIG. 9.

In the modification illustrated in FIG. 8 the device is of question mark form and is especially adapted for use with tubular steel furniture.

The unstretched area of the support **10** is less than the area for it as defined by the chair frame.

In use, the support **10** is secured to the framework by stretching it and securing the members to the framework by one of the methods above referred to.

The invention is not restricted to the above details. For example, the support can be moulded to any shape or size and the corner tongues may be omitted.

We claim:

1. A support for being secured to furniture framework comprising, a sheet of rubber having tongues extending outwardly from its periphery, a generally U-shaped metal member for each of said tongues and having a pair of generally parallel arms, said arms having a plurality of holes therein, means for attaching said members to said furniture framework for securing said support thereto, said tongues being bonded at least in part between said

generally parallel arms and having portions extending into and keyed in said holes in both of said arms.

2. A support for being secured to furniture framework comprising, a sheet of rubber having tongues extending outwardly from its periphery, a generally U-shaped metal member for each of said tongues, said members each having a pair of generally parallel arms, said arms having holes therethrough, at least a part of said tongues being bonded between said arms and having portions extending into and keyed in said holes, and means extending through at least some of said holes for attaching said members to said furniture framework for securing said support thereto.

3. A support for being secured to furniture framework comprising, a sheet of rubber having tongues extending outwardly from its periphery, a generally flat and U-shaped metal member for each of said tongues, said members each having a pair of generally parallel arms, one of said arms having a flange along one side thereof and extending generally away from said other arm, at least some of said arms having holes therethrough, at least a part of said tongues being bonded between said

arms and having portions extending into and keyed in said holes, and means extending through at least some of said holes for attaching said members to said furniture framework for securing said support thereto.

References Cited in the file of this patent

UNITED STATES PATENTS

258,551	Bradford	May 30, 1882
2,014,216	Wheeler	Sept. 10, 1935
2,144,495	Humphrey	Jan. 17, 1939
2,457,343	Braunschweiger	Dec. 28, 1948
2,832,399	Varkala	Apr. 29, 1958
2,845,671	Fisher et al.	Aug. 5, 1958
2,886,481	Swan	May 12, 1959
2,928,948	Silversher	Mar. 15, 1960
2,934,134	Adler	Apr. 26, 1960
2,968,840	Morse	Jan. 24, 1961

FOREIGN PATENTS

1,202,663	France	July 20, 1959

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,125,156 March 17, 1964

Norman Grimshaw

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

In the grant, lines 2 and 11, and in the heading to the printed specification, line 4, for "Vitaform Limited, each occurrence, read -- Vitafoam Limited --.

Signed and sealed this 29th day of September 1964.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

EDWARD J. BRENNER
Commissioner of Patents