FINISHING WELT AND FILLER STRIP

Glen G. Barr, Union City, Ind., assignor to Back-stay Welt Company, Union City, Ind., a corpora-

tion of Indiana

Application October 5, 1938, Serial No. 233,443

9 Claims. (Cl. 20—74)

My invention relates to welts, gimps, bindings and similar finishing strips and the like, and more particularly to those types which include a filler strip, and to the filler strip per se.

5 United States Letters Patent No. 1,719,729, issued July 2, 1929, to Robert C. Schemmel, discloses a finishing welt of the blind nail type, having a base portion adapted to be nailed to a support, like the body or a seat of an automobile or the framework of a piece of upholstered furniture, and having a flap portion hinged to the base and adapted to be folded down upon the base to cover and conceal the nail heads. In that construction a filler strip is common to the flap and base, crossing the hinge line along which the flap and base meet. The filler strip contains a plurality of stiffening elements in the form of transverse lengths of pliable wire which become bent at the hinge line when the flap is folded down on the base so that the strip serves to maintain the flap in substantial contact with the base.

Since the introduction of the Schemmel con-

9 struction various modifications in the filler strip have been made in an effort to overcome cer-

tain disadvantages which were found to be inherent in it and incidental to its use. Chief among these disadvantages is the undesirable stiffness and resistance to bending introduced by the filler strip into welts and the like which, without the strip, would be quite flexible. It is of course obvious that the thickness of the finishing strip is rather substantially increased by the addition of the filler strip; indeed, in many cases the filler strip is added in order to give the device more body. While this augmented thickness and bulkiness does not materially interfere with smooth and neat bending of the welt out of the plane of its base, it does result in very noticeable kinks and puckers when the welt is disposed about a curve in the plane of its base, particularly if that curve be of comparatively short radius. It is, therefore, well recognized in the trade that finishing strips and the like having filler strips are hard to bend neatly and smoothly in lateral curves, so that greater skill and more time are required for their installation, and this consider-

ation has with some users outweighed the ad-

mitted advantages of filler strip welts and appreciably lessened the demand for them.

A principal object of the present invention is to provide a novel filler strip construction which will retain the advantages of the best prior art filler strips and eliminate their resistance to side-

55 wise or edgewise bending, their tendency to kink or pucker when so bent, and their introduction of kinking, puckering, bunching and the like in the outer covering fabric of a laterally bent welt or analogous device.

A further object is to provide a welt or other finishing strip having the novel filler combined in a new relationship with the covering fabric so that the result is a device which will easily and neatly negotiate short lateral curves and yet have the body, weight and durability of the prior art filler strip welts and the like and all their other advantages.

These results are obtained by incorporating in the filler strip a novel type of pinking, an illustrated embodiment of which is shown on the accompanying drawing and will now be explained.

In the drawing, which forms part of this application for Letters Patent and in which the same reference numeral is used to designate corresponding parts in the several views,

50 Figure 1 is a plan view of a length of filler strip before being processed in accordance with my invention;

Fig. 2 is a similar view of a filler strip after being slitted or pinked as proposed by the in-

vention;

Fig. 3 is a view of a completed filler strip folded longitudinally on itself as in an installed finishing welt or the like and disposed in reverse curves to illustrate the action of the pinned zone; and

Fig. 4 is a perspective view, with one end in cross section, of a finishing welt, showing the filler strip in place.

Referring to the drawing, there is shown in Fig. 1 a filler strip of familiar type. It may comprise a woven structure in which the threads or filaments are transverse of the strip, or at least have a transverse component, and the threads or filaments run lengthwise of the strip, or at least have a lengthwise component. The strip shown is of square or basket weave; in some cases these strips are bias woven. The invention is applicable to both types of fabric. Preferably, although not necessarily, the trans-

verse filaments, or at least some of them, are of soft, pliable wire, either separate sections as shown, or a single length convoluted back and forth. This wire imparts stiffness to the fabric and to the finishing strip in which it becomes incorporated, and it serves to hold the flap portion of the welt up off the base, or down in engagement with it, wherever it may be posi-

55 tioned during the installing operation, all in a well understood manner.
The longitudinal filaments or threads 2 may also be made wholly or in part of wire, in which case the woven material is a wire cloth. These threads, however, may well be non-metallio, such as cotton, since their principal and practically exclusive function is merely to hold the transverse or filaments together. Various metals and alloys may be used in making the wire, both lengthwise and crosswise, and it may be processed in different ways to have different bending characteristics.

The combination of lengthwise and transverse or filaments may comprise the whole of the fabric, or, as shown in Fig. 1, the fabric may include a coating 3 of latex, rubber, asphaltum or of various compounds of these and other like materials. The coating may completely cover the filaments and fill the interstices between them as shown in Fig. 1, or it may coat the filaments only, leaving openings between the wires. In some cases the coating will take the form of a sheet of cloth, paper or the like cemented to one or both sides of the woven fabric.

It will be apparent that the fabric strip shown in Fig. 1, whichever of the alternative modifications explained hereabove be adopted, will be resistant to edgewise curving, i.e., bending in the direction indicated by either of the arrows 4 in Fig. 1. As has been indicated, a principal object of this invention is to improve the ability of the filler strip of Fig. 1 to bend around curves of relatively short radius in the directions shown by these arrows.

This is accomplished by cutting the strip, as shown in Fig. 2, to provide the slits or pinking 5. It will be observed that these slits are formed in the central zone 6 only of the filler strip, the two marginal zones 7 being left unslitted, so that each longitudinal edge 8 is unbroken. In the square woven fabric selected to illustrate the invention, therefore, it is only the longitudinal filaments that are broken, the transverse filaments remaining unbroken and unimpaired in strength. If the weave be bias, the slitting will be directly transverse, exactly as shown, but some of the longitudinal threads or filaments will be cut. It may be stated that in such cases the threads or filaments having a longitudinal component are cut. In either case the side margins 7 of the filler strip remain uncut and of unimpaired strength, while it is only the central zone 6 which is weakened by cuts. It results that the slitted strip is easily handled because the filaments do not readily separate, being kept intact and in place by the unweakened side margins 7.

In accordance with standard practice, the new filler strip is wide enough to lie substantially half in the flap portion of a welt or the like and substantially half in the base portion. These respective halves are secured by cement or stitching to the welt covering fabric, core or other part of the welt. The longitudinal center line or approximately the center line of the filler strip coincides with the hinge line of the covering fabric of the welt and use in a welt the longitudinal center line of the filler strip, indicated at 9 in Fig. 2, is the line on which the strip becomes folded, as shown in Fig. 3. This line is positioned along one edge of the finishing welt in which the filler strip is incorporated, as shown in Fig. 4, and this edge may lie along the inside or the outside of the welt or curve. Fig. 5 illustrates the action of the slits when the strip becomes curved in either of the two directions indicated by the arrows 4 in Fig. 1.

When the direction of the curve is such that the slitted zone 6 lies along the outside of the curve, the slits expand, assuming the form of wedge-shaped openings. The center line 9 of the filler strip is thus allowed to elongate, since it is increased by the sum of the lengths of the bases of the wedge-shaped openings. When the direction of the curve is reversed, so that the slitted zone 6 lies along the inside of the curve, as is also shown in Fig. 3, the material of the strip immediately adjacent one side of each slit laps the material immediately adjacent the other side, so that the center line 9 becomes shortened to an extent equal to the sum of the lapped portions.

The slits are formed at intervals throughout the strip, preferably at regular intervals, and are sufficiently close together to render the sums of elongating portions or contracting portions amply sufficient to accommodate curves of the shortest radius which may be encountered in any installation.

Fig. 4 illustrates the position of the filler strip in a finished welt of generally familiar type. In this welt the covering fabric 10 is folded on itself to provide a base portion 11 and a flap portion 12. The flap may include a core 13, commonly of folded paper and sometimes stiffened by a cord 14. A tack or nail 15 secures the base to a support 16, and after the securing operation is completed the flap is folded down into covering relation with the welt base, as indicated in the figure, the stiffening filaments of the filler strip serving to hold the flap and base in substantially engaged relation.

While the novel filler strip proposed by the invention may be associated in many ways, including known ways, with welted bases of this and other types, there are special advantages in positioning the strip in the novel way shown in Fig. 4. In this figure it will be observed that the free edge margin of the covering fabric in the base portion of the welt is hemmed over, as shown at 17, at the free edge of the base portion, leaving a generous area of the base portion between the hem and the hinge line. The other free edge margin of the covering fabric is similarly turned under and disposed beneath the free edge margin of the flap portion, or the core thereof, as shown at 18, leaving a generous area of filling or filling which is turned under and disposed beneath the hinge line. The areas 11 and 18 of the covering fabric are secured, by cementing or stitching, to the respective base and flap portions of the welt. The filler strip is similarly secured, half to the base portion and half to the flap portion, with its edges 5 abutting or approximately abutting the areas 17 and 18. By this construction the filler strip becomes, in effect, a sort of continuation or connection between the ends of the covering fabric, and if the thickness of the filler strip is the same as that of the covering fabric there is no variation in the thickness of the welt fabrics across any part of the welt.

It will be noted that in the construction just explained the two adjacent piles of filler strip fabric are not separated by any intervening material. This results in a welt, particularly along the hinge line of the welt, where the folded edge 9 of the filler strip is disposed with its slits 5, because these slits are free to open up, or the material adjacent them is free to lap over, if the welt be curved, without any interference or hindrance such as would be imposed by any intervening body. By this sort of construction the possibilities of the new filler strip are most fully realized.

This welt construction is further improved if the covering fabric be made of the material known as coach lace. This is a comparatively soft and...
relatively loosely woven fabric which is uncoated, being thus distinguished from the doped fabrics or imitation leather. Coach lace and its equivalents are more stretchable and flexible than doped

fibres because the component threads are more free to slide on each other and assume new relations accommodated to curved shapes. If the web of Fig. 4 be made of coach lace or its equivalent it will be found that the slit actions illustrated

in Fig. 3 are very readily permitted because the threads of the coach lace to which the filler strip material at the margins of the slits is secured are very free to move with the filler strip material. The resulting web curvature is exceedingly smooth and uniform, being characterized by a notable lack of puckering, kinking and bunching.

Centrally pinned filler strips as proposed by this invention may advantageously be incorporated in webs different from that shown in Fig. 4. It is believed that that type of welt well exemplifies the merits of the filler strip and the manner in which it improves the bending capacities of the complete trimming device, and it is for this reason that the Fig. 4 welt has been selected to illustrate a preferred use of the invention. Moreover, it is evident that the novel filler strip cooperates in a novel and inventive manner with the specific construction of the Fig. 4 welt, and therefore claims to the specific combination are made hereinafter.

It is to be understood, however, that the filler strip is useful in finishing strips and analogous devices of other and different character, and that the invention may be modified in numerous respects, all such modifications, to the extent that they incorporate the principles of the invention as pointed out in the appended claims, being within the scope and purview thereof.

What I claim is:

1. A filler strip for finishing wells and the like comprising an elongated, relatively narrow strip of textile material including a plurality of transverse lengths of wire and longitudinal filaments interwoven with said wire, said filaments being continuous along both side margins of the strip and broken into relatively short lengths in the central zone of the strip.

2. A filler strip for finishing wells and the like comprising a relatively long, narrow and thin sheet of uniform thickness from edge to edge including a multiplicity of transverse stiffening strands, said sheet being characterized by cuts providing a plurality of longitudinally spaced transversely directed slits in its central zone only.

3. A filler strip for finishing wells and the like comprising a relatively long, narrow and thin sheet of uniform thickness from edge to edge including a multiplicity of regularly spaced transverse stiffening strands, said sheet being characterized by cuts providing a plurality of longitudinally spaced transversely directed slits in its central zone only.

4. A filler strip for finishing wells and the like comprising a relatively long and narrow sheet of filaments woven together, including stiffening filaments having a component transverse of the strip and other filaments interwoven with the stiffening filaments and having a component longitudinal of the strip, the last named filaments being broken at intervals throughout the central zone only of the strip by slits which terminate at the longitudinal margins of the strip.

5. A filler strip for finishing wells and the like comprising a relatively long and narrow sheet of wire cloth of uniform thickness from edge to edge characterized by cuts providing a plurality of longitudinally spaced transversely directed slits in its central zone only.

6. A filler strip for finishing wells and the like comprising a relatively long and narrow woven web including pliable wire having a transverse component, in combination with generally longitudinally directed sheet means bonded to the wire holding the same in position and forming therebetween with a strip of uniform thickness from edge to edge, said longitudinally directed sheet means being characterized by cuts providing a plurality of spaced slits in the central zone only of the strip.

7. A finishing welt of the blind nail type comprising a base portion adapted to be tucked to a support, a tack-concealing flap portion hinged to the base portion and adapted to be folded down thereupon, and a filler strip common to the flap and base portions and secured to both, having a plurality of transverse stiffening strands or filaments crossing the hinge line of the welt and characterized by cuts providing a plurality of longitudinally spaced transversely directed slits in its central zone only.

8. A finishing welt of the blind nail type comprising a covering fabric of relatively loosely woven material having a degree of stretchability and flexibility appreciably greater than doped or coated fabrics, said covering fabric being folded on itself to provide a base portion adapted to be tucked to a support and a tack-concealing flap portion hinged to the base portion and adapted to be folded down thereupon, and a single, integral filler strip of uniform thickness from edge to edge common to the flap and base portions and secured to both, having a plurality of transverse stiffening strands or filaments crossing the hinge line of the welt and characterized by cuts providing a plurality of longitudinally spaced transversely directed slits in its central zone only.

9. A finishing welt of the blind nail type comprising a covering fabric folded on itself to provide a base portion adapted to be tucked to a support and a tack-concealing flap portion hinged to the base portion and adapted to be folded down upon the base portion, a flap core within the flap and having one marginal portion of the covering fabric secured to one margin of its under side, the other marginal portion of the covering fabric being folded on itself in the base portion to provide a hem at the free edge of the base portion, and a single, integral filler strip extending continuously from substantially abutting relation to the free edge of one of said marginal portions to substantially abutting relation to the free edge of the other of said marginal portions and secured to the covering fabric in the base portion and to the under side of the flap core, having its central zone crossing the hinge line and having its portions immediately adjacent the hinge line adjacent of interposed covering material, said filler strip being of uniform thickness from edge to edge characterized by cuts providing a plurality of longitudinally spaced transversely directed slits in its central zone only.

GLEN G. BARR.