July 5, 1966 L. MEDNICK 3,258,942

STRETCHABLE FRINGE

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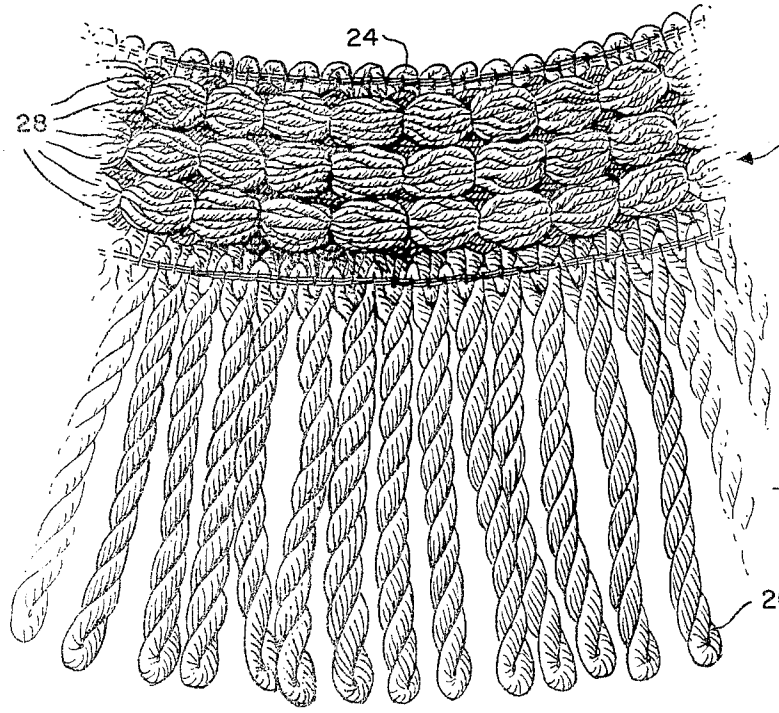


Fig. 1.

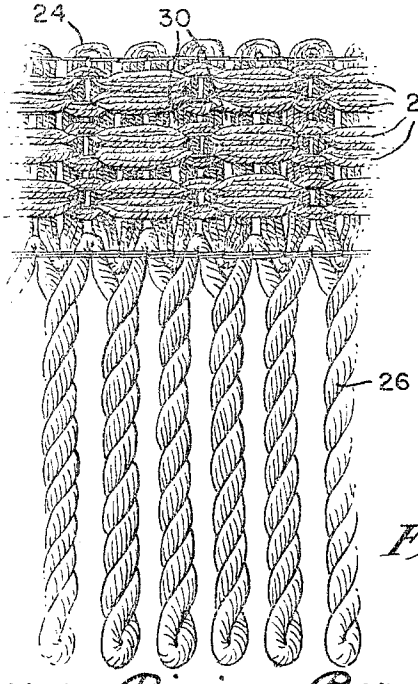


Fig. 2.

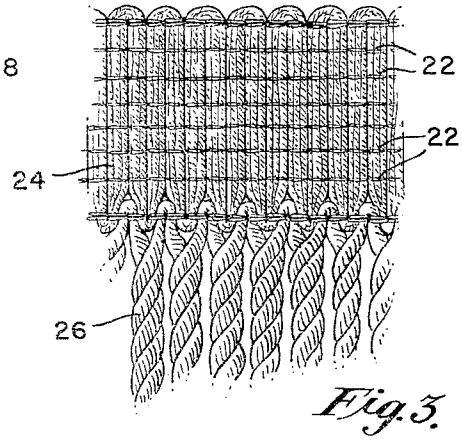


Fig. 3.

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STRETCHABLE FRINGE

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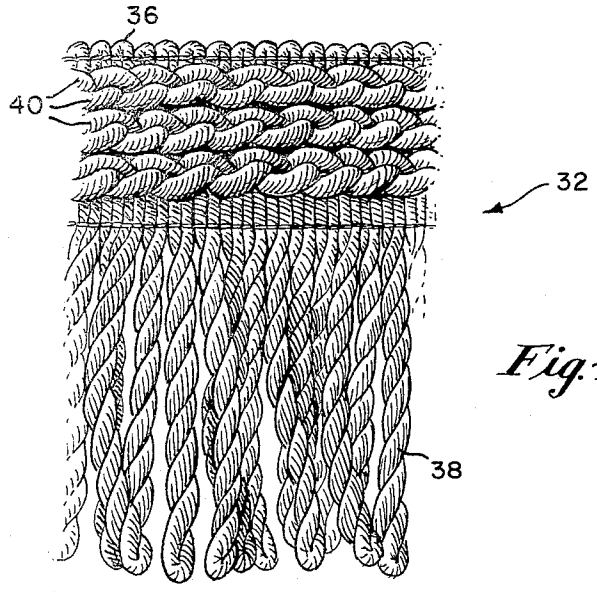


Fig. 4.

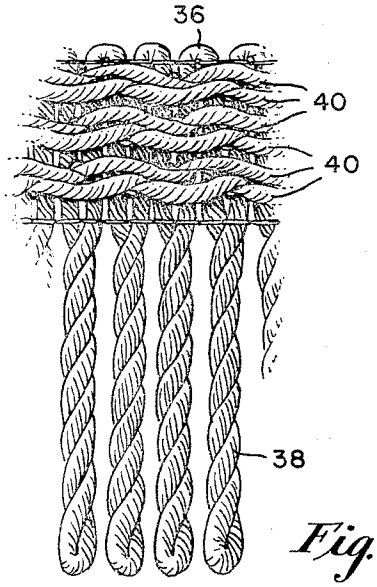


Fig. 5.

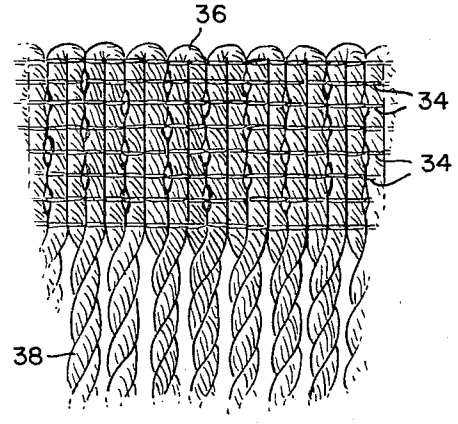


Fig. 6.

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STRETCHABLE FRINGE

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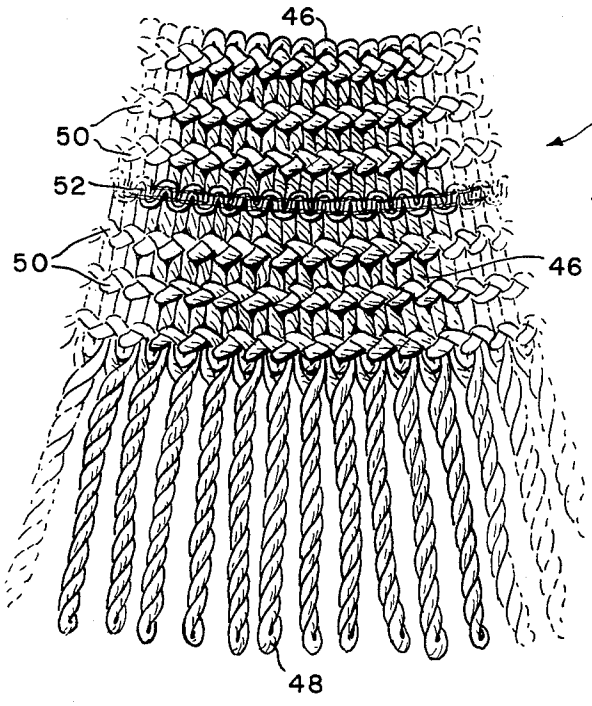


Fig. 7.

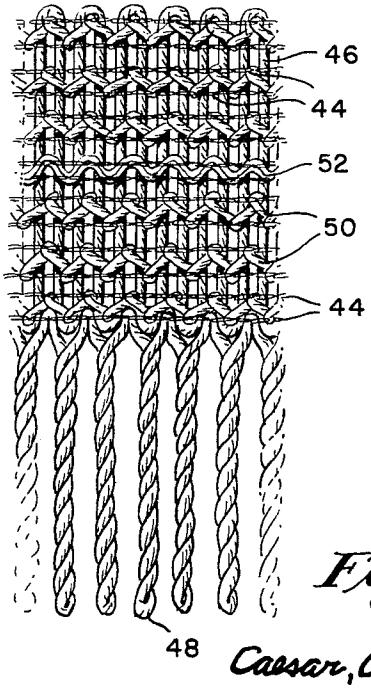


Fig. 8.

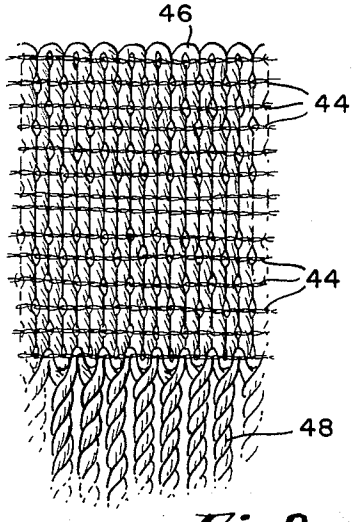


Fig. 9.

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STRETCHABLE FRINGE

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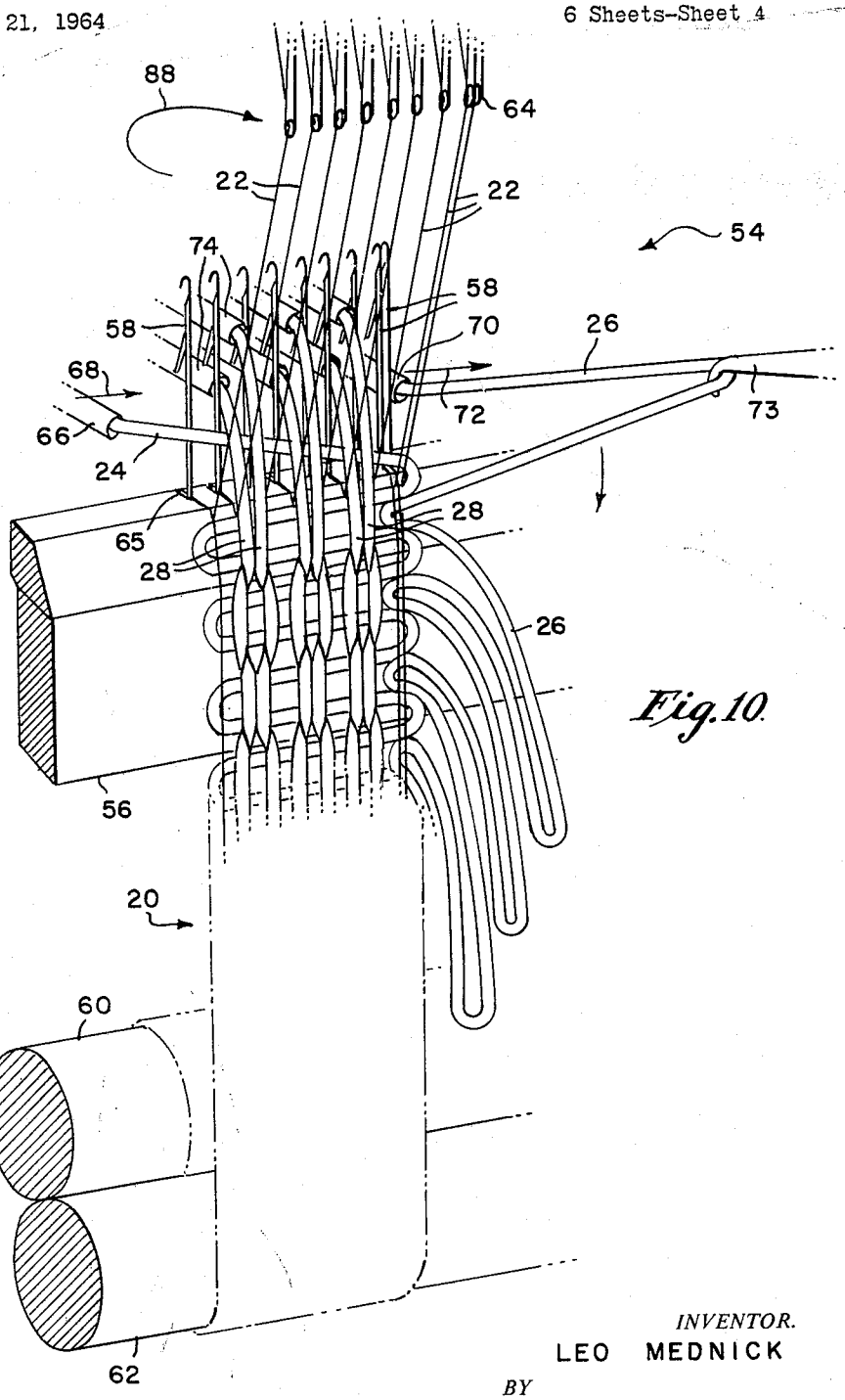


Fig. 10.

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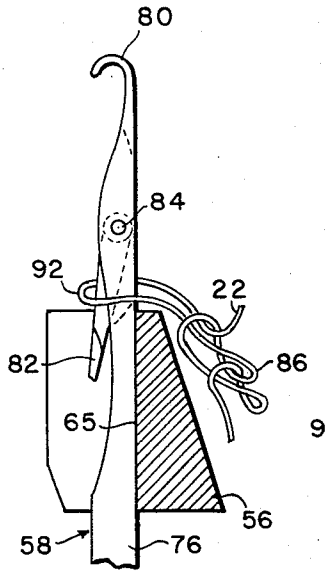


Fig. 11.

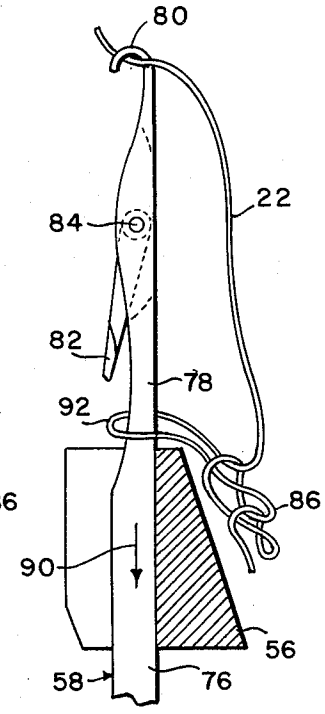


Fig. 12.

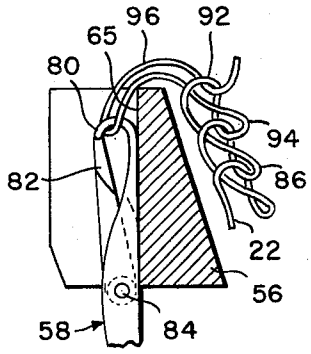


Fig. 13.

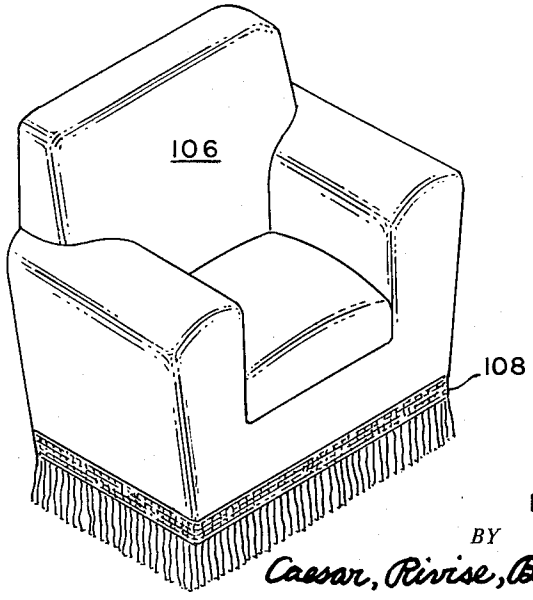


Fig. 16.

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STRETCHABLE FRINGE

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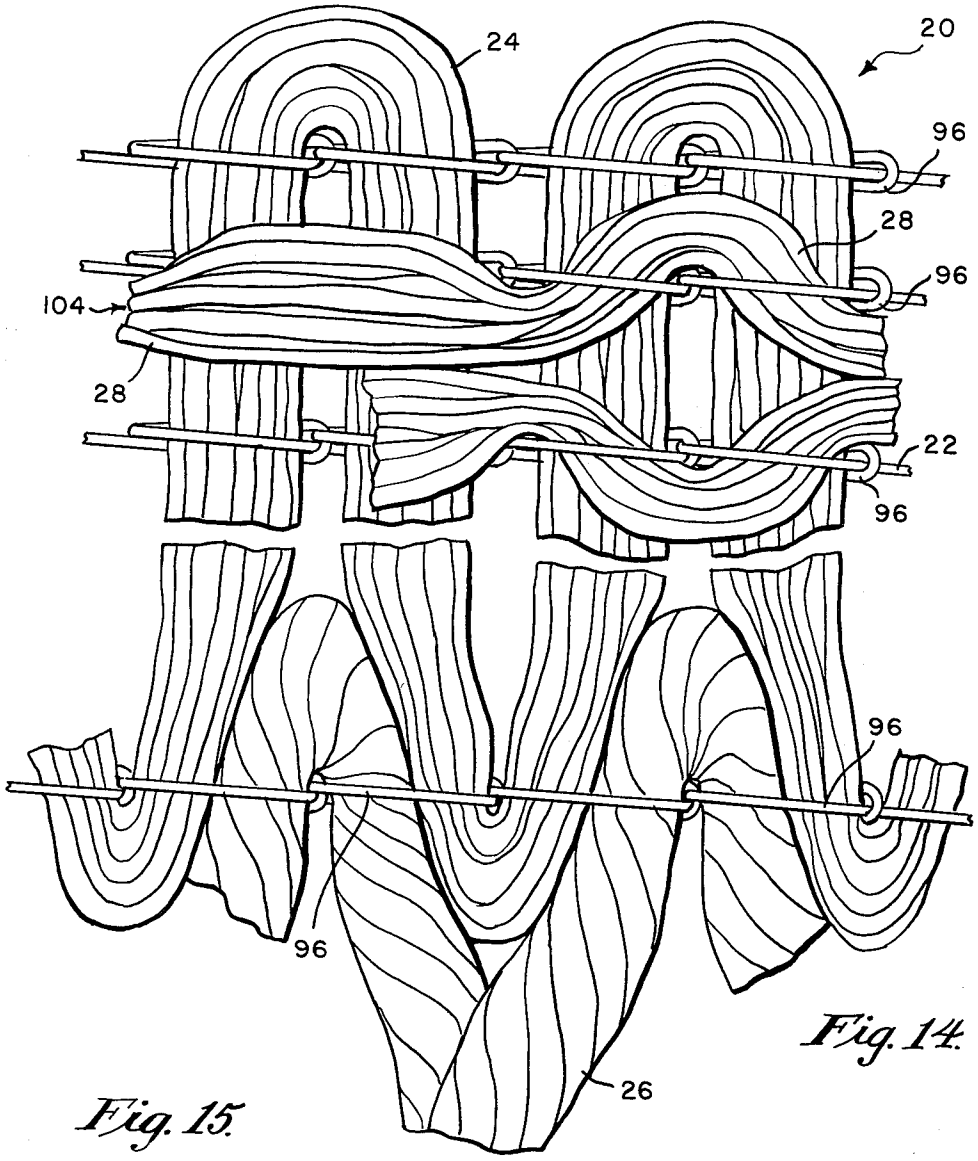
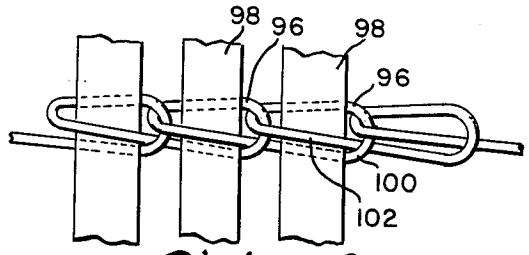


Fig. 14.

Fig. 15.



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United States Patent Office

3,258,942

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STRETCHABLE FRINGE

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Filed Sept. 21, 1964, Ser. No. 397,777
7 Claims. (Cl. 66—193)

This invention relates to a stretchable fringe, and more particularly, to a stretchable fringe adapted to be used in the upholstering and covering of furniture.

It is a common practice in the furniture art to have a dependent skirt around the base of furniture, thereby covering the legs of the furniture. In many instances, this dependent skirt will comprise a fringe. This fringe is used in both the upholstering of furniture and in slip covers for the furniture. Prior to this invention the fringe generally used was woven or knitted from cotton yarns. Thus, there was no adjustability to the fringe and the amount of fringe needed was equal to the perimeter of the base of the furniture being covered.

In the upholstering of furniture, the fact that the fringe was not adjustable did not present a serious problem, since the amount of fringe could easily be pre-determined by exact measurements. However, in the ready-made slip cover industry this preciseness was not available, since a given slip cover had to be adapted to covering a large variety of sizes and shapes of furniture. Therefore, the fringe generally had to be included as a separate item with the ready-made slip cover. After the purchaser placed the ready-made slip cover on the furniture, the fringe was then secured on the furniture separately. This securement was usually accomplished through screw pins, thereby presenting a number of disadvantages. Thus, when the base of the furniture had exposed wood, the screw pins could not be secured in the wood. Likewise, the securement of the screw pins in the fabric always entailed the possibility that the screw pins would come out of place if the furniture were moved.

The fringe of this invention presents numerous advantages over the non-stretchable fringe of the prior art. In the first place, by its very nature of being stretchable, the fringe is readily adjustable. A significant advantage of the fringe of this invention is the fact that it can be presecured directly to any stretchable ready-made slip cover. Thus the fringe can stretch to the same extent as the slip cover when the slip cover is applied to a piece of furniture.

Another advantage of the fringe of this invention is economy in use. Thus in the ready-made slip cover art, it was necessary to include three and one-half yards of fringe with a slip cover for a chair in order to insure that the largest chair would still be covered by the fringe. Using the fringe of this invention only two yards are required.

It is therefore an object of this invention to provide a novel fringe.

It is another object of this invention to provide a stretchable fringe.

It is a further object of this invention to provide a novel fringe that is particularly adapted to being used in the upholstering and covering of furniture.

It is a further object of this invention to provide a novel fringe that is economical in use.

It is a further object of this invention to provide a stretchable fringe that is adapted to be incorporated in stretchable ready-made furniture slip covers.

These and other objects of the invention are accomplished by providing a fringe comprising warp threads and filling threads, said filling threads having dependent portions which comprise the fringes, said warp threads comprising an elastic yarn.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

FIG. 1 is a front elevational view of a preferred embodiment of the fringe of this invention in its relaxed condition;

FIG. 2 is a partial front elevational view of the fringe of FIG. 1 in a fully stretched condition;

FIG. 3 is a partial rear elevational view of the fringe of FIG. 1 in a slightly stretched condition;

FIG. 4 is a front elevational view of a second embodiment of the fringe of this invention in a relaxed condition;

FIG. 5 is a partial front elevational view of the fringe of FIG. 4 in a fully stretched condition;

FIG. 6 is a partial rear elevational view of the fringe of FIG. 4 in a slightly stretched condition;

FIG. 7 is a front elevational view of a third embodiment of the fringe of this invention in a relaxed condition;

FIG. 8 is a partial front elevational view of the fringe of FIG. 7 in a slightly stretched condition;

FIG. 9 is a partial rear elevational view of the fringe of FIG. 7 in a slightly stretched condition;

FIG. 10 is a diagrammatic perspective view of one method of making the fringe of this invention;

FIGS. 11, 12 and 13 show the series of steps of making the warp knit stitches of the fringe of this invention;

FIG. 14 is a greatly enlarged fragmentary diagrammatic front elevational view of the stretched fringe shown in FIG. 2;

FIG. 15 is a diagrammatic view showing the stitches on the fringe of FIG. 14; and

FIG. 16 is a perspective view of a stretchable slip cover which includes the fringe of this invention as a skirt.

Referring now in greater detail to the various figures of the drawings wherein similar reference characters refer to similar parts, a stretchable fringe embodying the present invention is generally shown at **20** in FIG. 1. Fringe **20** basically comprises warp threads **22** (FIG. 3), filling threads **24** forming a backing, filling threads **26** which depend from the lowermost warp threads **22** thereby forming fringes and warp threads **28** which are laid in over backing threads **24** thereby forming a heading for the backing.

Warp threads **22** are stretchable yarns with backing threads **24**, fringe threads **26**, and heading threads **28** being non-stretchable yarns. The warp threads **22** can be made of any stretchable material such as natural or synthetic rubber or stretch nylon. They are usually wrapped with a non-stretchable yarn which is identical to the yarn of the filling and heading threads of the fringe. Thus when the other threads comprise cotton, warp threads **22** can conveniently be made of rubber yarn wrapped with cotton. The non-stretchable threads **24**, **26** and **28** comprise twisted yarns in order to obtain the desired resiliency and fullness for the fringe. As is apparent, fringe yarns **26** are heavier than the other yarns, as is common to the art of fringes. Thus yarns **26** can be 8 count, 2 ply cotton yarns.

Fringe **20** is shown in its relaxed condition in FIG. 1. When it is applied to an article of furniture, it will be stretched to the extent necessary to entirely cover the perimeter of the furniture. Since the warp yarns **22** are elastic, the fringe is stretched longitudinally. In its stretched condition the appearance of the fringe will still be generally that shown at **20** in FIG. 1. This is because the heavier yarns forming the backing **24** have a certain inherent resiliency which permits the yarns to expand when the tension of the elastic warp threads **22** is lessened. Additionally, the heading yarns **28** are in a puckered con-

dition. Therefore when the fringe is expanded the heading yarns will likewise expand still giving a closed or continuous appearance to the fringe. In FIG. 2, the fringe is shown in a fully expanded condition merely for the purpose of illustration. In actual use, however, the fringe will not be stretched to this extent since allowances will be made in selecting the proper size for the fringe to insure a continuous appearance. Thus, in use, exposed areas **30** will not be present. Instead, backing yarns **24** will be contiguous and a continuous pattern will also be presented by the puckered heading yarns **28**. In this manner, the stretchable fringe of this invention will have the same appearance as the conventional non-stretchable fringes of the prior art.

In FIG. 4 a second embodiment of the fringe of this invention is generally shown at **32**. This embodiment also includes elastic warp threads **34**, non-elastic filling threads **36**, non-elastic filling threads **38** forming the fringes and non-elastic warp threads **40** forming the heading. It is thus seen that fringe **32** contains the same basic elements as fringe **20**. Likewise, in use fringe **32** will function in the same manner as fringe **20**. One of the major differences between fringe **20** and fringe **32** is that the fringe threads **38** and backing threads **36** are unitary. Thus the backing and fringe threads are formed from a continuous yarn rather than having individual yarns forming these elements as in embodiment **20**. Another distinction resides in the design of the heading formed by warp threads **40**. In embodiment **20** the heading threads were parallel whereas in embodiment **32** the heading threads are formed in pairs which continually cross each other. Functionally however the heading threads are identical.

A third embodiment of the fringe of this invention is generally shown at **42** in FIG. 7. Fringe **42** includes elastic warp threads **44**, non-elastic filling threads **46** which form a backing, non-elastic filling threads **48** which form the fringes and non-elastic warp threads **50** which form a heading. Again, to this extent, this embodiment contains the same functional threads as embodiment **20** and **32**. However, in this embodiment the heading threads, rather than appearing in pairs, are individual threads which are twisted and tied in by adjacent pairs of elastic warp threads **44** as best seen in FIG. 8. Additionally, a central warp thread **52** remains untwisted but appears in a continuous wave pattern and is also tied in by the elastic warp threads. In this embodiment the fringes **48** are separate from the backing threads **46** and depend from the bottom of the backing. Fringes **48** are tied in by the lowermost elastic warp threads **44**.

As previously pointed out the fringes of this invention can be made from any materials currently used for making the non-stretchable fringes. The one major distinction resides in the use of the elastic warp threads. The non-elastic threads can be made from any yarns known to the art such as cotton, rayon, nylon, or any of the polyesters, such as Dacron, or mixtures thereof.

The fringes of this invention can be made by any process known to the art for the making of fringes. Thus they can be either woven or knitted. In the embodiment shown, the fringes have been made by a warp knitting process. One form of this process is shown schematically at **54** in FIG. 10. The warp knitting machine schematically shown in FIG. 10 basically includes a slotted block **56** having latch needles **58** vertically reciprocable within the vertical slots in block **56**. A pair of rollers **60** and **62** are co-acting and serve as draw rollers for the fringe being formed on the machine. These rollers also regulate the tension on elastic threads **22** forming the warp of the fringe. Threads **22** are fed through spools across movable rollers **64**. These threads are received in slots **65** in block **56**. The feeding of the threads **22** is in the parallel arrangement shown in FIG. 10. Simultaneously with the feeding of warp threads **22** filling

threads **24** are fed through reciprocating tube **66**. Tube **66** reciprocates back and forth behind elastic threads **22** as indicated by arrow **68**. Likewise, reciprocating tube **70** feeds filling threads **26** which form the fringes. As indicated by arrow **72**, tube **70** reciprocates from the position shown in FIG. 10 to stationary hook **73** and back again. Hook **73** maintains the loop of the fringe in place until the fringe yarns are tied in with the warp stitches formed from warp threads **22**.

Non-stretchable warp threads **28** are fed through stationary tubes **74**. These threads are also tied in by the stitches formed from elastic warp threads **22**. Since the elastic warp threads are under tension during the formation of the fringe fabric, warp threads **28** will have the stretched appearance shown in FIG. 10. However, when the finished fringe is removed from the machine, the warp threads **22** will contract thereby giving warp threads **28** the puckered appearance shown in FIG. 1.

Using the process shown in FIG. 10, filling threads **24** and **26** and warp threads **28** are tied in by the warp stitches formed from elastic warp threads **22**. This process is similar to that which would normally be carried out on a warp knitting machine. However, in the past, the warp knitting machines were used to produce non-stretchable fringes.

The process of forming the stitches with latch needles **58** is generally shown in FIGS. 11, 12 and 13. Latch needle **58** is of a construction which is common to the art and includes a stem **76**, a neck **78** with upper hook **80** and a freely pivotable latch **82**. Latch **82** is pivotable around pin **84** which is received within a slot in neck **78**.

The formation of the stitches is shown in FIGS. 11, 12 and 13. The warp threads **22** are shown in a relaxed condition for the purpose of clarity. It is to be understood, however, that threads **22** will be in their taut condition, which is shown in FIG. 10, during the actual process of forming the fringe. The position of the rollers **64** in FIG. 10 corresponds to the condition of the warp threads **22** shown in FIG. 11. Thus the formation of a stitch **86** has just been completed. It is seen that stitch **86** appears in the nature of a loop. As will be more fully explained hereinafter, it is these loops which actually tie together the filling threads and the warp threads **28** which form the heading. Again it is to be recalled that these stitches are made with an elastic yarn and therefore will tightly secure the non-elastic yarns.

After a stitch **86** has been formed, rollers **64** are rotated in an arc as shown by arrow **88** in FIG. 10. When the arc is completed the rollers **64** will be returned to the position shown in FIG. 10. However, during the formation of the arc, warp threads **22** engage hooks **80** of the latch needles, as shown in FIG. 12. Simultaneously with the return of rollers **64** latch needles **58** are reciprocated downwardly as shown by arrow **90** in FIG. 12. With the downward movement of needle **58**, as previously formed loop **92** (FIG. 12) will engage the undersurface of latch **82**. Continued downward movement of the latch needle will cause the abutment of latch **82** against hook **80**, thereby closing the latch. As the latch **58** progresses below the top of block **56**, loop **92** will be cast off latch needle **58** and pass over block **56** as shown in FIG. 13. Thus loop **92** will form a new stitch **94**. Again it is to be recalled that since the warp threads **22** are under constant tension loop **92** will automatically be pulled to the position shown in FIG. 13.

After the new stitch has been formed, latch needle **58** will reciprocate upwardly. Simultaneously with this upward movement, the needle will pass through newly formed loop **96** (FIG. 13) and latch **82** will again drop to the position shown in FIG. 11. At this point the latch needle **58** will again be in position to repeat the cycle just described. Continuation of this cycle continues to produce new stitches. During the entire process, the various non-stretchable threads are being received within the stitches of stretchable threads **22**.

After the fringe fabric has been formed in the manner described, it is steamed thereby causing the fringe yarns **26** to curl in the manner shown in FIGS. 1 to 9. This is a conventional method of forming curled fringe yarns.

Although the process has been described with respect to the formation of the fringe shown in FIGS. 1 to 3, it is to be understood that the process is easily adapted to the formation of fringes **32** and **42** as would be obvious to one skilled in the art.

In FIGS. 14 and 15 the stitches and their manner of securing the non-elastic threads are shown schematically. Referring more particularly to FIG. 15, the stitches formed from the elastic threads are shown schematically at **96** and the non-elastic filling threads are shown schematically at **98**. As seen in FIG. 15, each stitch basically comprises a loop **100** which is positioned beneath the filling threads and strand **102** which is positioned on top of the filling threads and passes through the loop. Together the strand and loop comprise a single stitch. The continuity of the stitches is easily visible from FIG. 15.

The manner in which the various non-elastic threads of the fringe shown in FIGS. 1 to 3 are secured by the stitches is shown in FIG. 14. In FIG. 14, the stitches are again designated **96**. The loops of the stitches lie beneath the filling and non-elastic warp threads. The filling threads **24** which comprise the backing reciprocate back and forth through adjacent stitches in each row. Thus one thickness of thread **24** will be received in each stitch **96**. The non-elastic warp threads **28** which form the backing are held by two adjacent stitches **96**, are unsecured for the next two adjacent stitches **96**, and then are held by the succeeding pair of stitches **96**. For this reason, the large unsecured puckered portion **104** is obtained.

In embodiment **20** of the fringe which is shown in FIG. 14, filling threads **26** which form the fringes are tied in solely in the lowermost two rows of elastic stitches **96**. For the purpose of clarity, only one row is shown in FIG. 14. One strand of thread **26** is secured within each stitch **96**. As seen in FIG. 14, each of the lowermost stitches **96** must secure a backing thread **24** and a fringe thread **26**. For this reason, the fringe will have the bowed appearance shown in FIG. 1 in its relaxed condition. This is because there is a greater amount of compression at the top of the fringe than at the bottom, in view of the presence of the extra fringe threads at the bottom of the fringe.

Embodiments **32** and **42** of the fringe are constructed in the same manner as that described for fringe **20**. Thus, all of the non-elastic strands will be tied in by the elastic warp yarns.

A preferred use of the fringe of this invention is on stretchable ready-made slip covers. As seen in FIG. 16 a chair having a stretchable ready-made slip cover **106** is shown. The base of this slip cover is provided with a skirt **108** which is permanently secured thereto, as by stitching. Skirt **108** can be any of the fringe of this invention.

The fringe of this invention is adapted to be used with any stretchable slip cover. Thus it can be used with the slip cover shown in United States Patent No. 2,839,127 or in my prior United States Patent No. 3,117,817.

Although the fringe of this invention is particularly adapted to be used with stretchable slip covers, it can also be used with any non-stretchable slip cover. A preferred manner of use is to have two loose ends of the fringe stitched together to form the fringe into a continuous loop. The loop can then be stretched over the slip cover and held in place solely by the tension of the elastic within the fringe.

An additional advantage of using the fringe of this invention for this purpose is that it performs a hold-down function. Thus, in the past, it was normally necessary to use hooks or screw pins to secure the bottom of the non-stretchable ready-made slip covers in place. However, using the fringe of this invention, the elasticity of the fringe will serve the same function and the prior hooks or screw pins can be eliminated.

It is thus seen that when used with slip covers, the fringe of this invention can be pre-attached or unattached. Thus it can be sewn to a slip cover or it can be sold in the form of a loop and stretched over the slip cover after the slip cover has been placed on the furniture. A particular feature of the fringe of this invention is that it can stretch to approximately 100% of its length during use, while still retaining its ornamental appearance. Having knowledge of this fact can aid a purchaser in buying the fringe of this invention in the form of yard goods. Thus, it is a generally accepted fact in the slip cover industry that three and one-half yards of fringe will accommodate almost any chair when serving as a skirt. Therefore a shopkeeper can sell approximately two yards of the stretchable fringe of this invention and be reasonably certain that this amount of fringe will be adapted to covering the base of a chair. Likewise, three and one-half yards of the fringe of this invention will normally accommodate most sofas.

Since the fringe of this invention is readily adapted to be sewn into a loop and placed over various items of furniture, it will also find utility as an ornamental fringe for any piece of upholstered furniture, regardless of whether it is covered. Thus a consumer can easily change the appearance of a given item of upholstered furniture merely by periodically removing the loop of fringe and replacing it with a new one.

The fringe of this invention also finds utility for any use of the prior non-stretchable fringes. Since the fringe is stretchable it is readily adapted for use on various different lengths of items. Some of the other uses that may be made of this fringe are cornices for draperies or ornamentation for lamp shades. In this connection, it is to be noted that the particular use for the fringe will dictate the types of yarns being made into the fringe. Thus for lamp shades, fine combed yarns can be used. Alternatively, for use in upholstery, heavier carded yarns can be used.

The fringe of this invention is ornamental in appearance. During use it will give the appearance of the prior art woven fringes. This is especially true in view of the fact that the non-stretchable yarns have an inherent resiliency and will expand when the fringe is stretched to give a non-porous appearance. The headings on the fringe aid in concealing any openings within the backing when the fringe is stretched. This is because the headings are laid in with the elastic warp yarns in a stretched condition.

Although the fringe has been described as being manufactured on a warp knitting machine it is to be understood that it can be formed by any process known to the art which will produce a longitudinally stretchable yarn. Thus the fringe can also be woven with the warp comprising the elastic yarns. To this extent the process will be similar to any of the prior art processes of making woven fringes, such as those disclosed in United States Patent No. 1,522,863 and No. 1,583,896.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings. It is, therefore, to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described.

What is claimed as the invention is:

1. A stretchable fringe comprising warp threads and filling threads, said warp threads including elastic yarns, and said filling threads comprising non-elastic yarns, with said filling threads being bound by said elastic warp threads, said filling threads including dependent portions projecting from the lowermost elastic warp threads, thereby forming fringes, whereby said fringe may be stretched by expanding said elastic yarns, and additional warp threads which overlie said filling threads and are bound by said elastic warp threads, said additional warp threads being in a puckered condition and adapted to expand when said elastic warp threads are stretched.

2. The stretchable fringe of claim 1 wherein said dependent portions are separate from the remainder of said filling threads.

3. The stretchable fringe of claim 1 wherein said dependent portions are unitary with the remainder of said filling threads.

4. The stretchable fringe of claim 1 wherein said filling and additional warp threads are secured within knit stitches formed from said elastic warp threads.

5. The stretchable fringe of claim 4 wherein said additional warp threads are non-elastic.

6. The stretchable fringe of claim 1 wherein said elastic warp threads comprise rubber yarns wrapped with cotton and said filling and additional warp threads comprise cotton yarns.

7. A stretchable fringe comprising warp threads and filling threads, said warp threads including elastic yarns, and said filling threads comprising non-elastic yarns, with said filling threads being bound by said elastic warp threads, said filling threads including dependent portions projecting from the lowermost elastic warp threads, thereby forming fringes, whereby said fringe may be stretched by expanding said elastic yarns, and additional threads which overlie said filling threads and are bound by said elastic warp threads, said additional threads adapted to provide a continuous appearance for the stretchable fringe when the elastic warp threads are stretched.

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