ABSTRACT: A device to facilitate the pleating of fabric which, in a flat unfolded condition, is positionable about the fabric and folded in unison therewith into an accordion-type configuration and, as a consequence, produces pleats in the fabric.
The present invention relates generally to a sewing aid, and more particularly to an improved device for forming pleats in fabric, such as is often required in the sewing of curtains and other such products.

In sewing curtains and similar products, it is often desirable to enhance the appearance of the product with pleats. The pleating operation, although simple and consisting merely of producing bodily folds in the fabric, nevertheless is tedious and demanding on the seamstress if nonuniform pleats are to be avoided. The seamstress will usually accurately measure each fold, then individually pin or otherwise hold each fold in place until the desired number of pleats is completed. These pleats are then tacked or otherwise retained in place and the pins removed from the fabric.

Broadly, it is an object of the present invention to provide an improved pleating guide which eliminates the aforesaid tedious hand operations as well as overcoming other short-comings of the prior art hand methods of producing pleats. Specifically, it is an object to provide an improved pleating guide which is of simple construction, and easily put to use for its intended purpose by being placed along the edge of the fabric and then reduced to an accordion-type folded configuration in unison with the fabric, with the result that pleats are produced in the fabric.

An improved pleating guide demonstrating objects and advantages of the present invention is formed by an elongated, single-ply foldable body having a plurality of regularly spaced stiffening elements provided thereon, said stiffening elements rendering the body foldable only in the spaces remaining between the elements, the rigidity of the stiffening elements substantially preventing any folding in the remaining body areas coextensive with them. Thus, in accordance with the contemplated use of the pleating device hereof, by positioning the device along an edge of the fabric and moving the foldable body through its folding movement as controlled by the spaced relationship of the stiffening elements, it is readily possible to quickly and easily produce uniform pleats in the fabric.

The above description, as well as further objects, features and advantages of the present invention, will be more fully appreciated by reference to the following detailed description of presently preferred, but nonetheless illustrative embodiments in accordance with the present invention, when taken in conjunction with the accompanying drawings, wherein:

FIGS. 1—4 are illustrations of a first embodiment of pleating guide according to the present invention, namely to wit:

FIG. 1 is an isolated front elevational view thereof.

FIG. 2 is similarly a front elevational view, but illustrating the pleating guide in its operative position in relation to a fabric to be pleated;

FIG. 3 is an end elevational view taken on line 3—3 of FIG. 2 illustrating the pleating guide in its closed position about an edge of the fabric;

FIG. 4 is a top plan view of the pleating guide in its position about the fabric and at an intermediate position of movement during its folding movement.

FIG. 5 is an illustration of a second embodiment of the pleating guide hereof, namely to wit:

FIG. 5 is a view similar to FIG. 1, except that the pleating guide is illustrated with spacing attachment provided in accordance with the present invention.

Reference is now made to the drawings in particular to FIGS. 1—4 illustrating a first embodiment of a fabric pleating guide, generally designated 16, demonstrating objects and advantages of the present invention. The pleating guide 10 is particularly useful in forming pleats in curtains and other such products and, to this end, consists of an elongated body foldable at delineated intervals along its longitudinal extent into an accordion-type folded configuration. This folding movement is diagrammatically illustrated in FIG. 4 which shows an intermediate position of movement from which the ultimately finished pleated condition of the fabric F and of the completely folded position of the guide 10 is formed. In its contemplated use in accordance with the present invention, the fabric F and the foldable body 10 are folded in unison, thereby providing pleats in the fabric which are then retained by tack stitching, or the like.

In the first illustrated embodiment of the pleating guide 10, the body consists of a single ply cloth fabric body 12 having a plurality of regularly spaced stiffening elements 14 provided thereon. The stiffening elements 14 are generally rectangular-shaped and are comprised of a resin curable to a hard or stiff material after application to the fabric in liquid form. The technique is as follows.

A silk screen is prepared using conventional means known to the art and the screen was stretched onto a conventional screen frame. The resin employed may be any one of the commercially available resins which are curable to a hard or stiffened material. The resin is mixed with an accelerator agent in equal proportions by volume and a colored dye may be added until the desired shade is obtained. However, it is to be understood that the dye is not necessary to preparation of the invention guide. Pumice is then added to the resin mixture in a minor amount and the whole mixture is stirred thoroughly. The resin is then poured onto the edge of the screen and the cloth fabric which forms the body 12 of the pleating guide is placed in position under the screen. The resin is squeezed onto the fabric with a rubber blade. The resin impregnated piece of fabric is then placed on waxed paper on a flat surface for curing of the resin for a period of about 48 hours. It is to be noted that the resin is applied in the spaced positions of the stiffening elements mentioned hereinabove, and to be mentioned subsequently throughout the specification. After curing of the resin for the prescribed period, any excess fabric at the edge of the pleating guide is trimmed off to provide the outlines of the pleating guide as shown in the FIGS. of the drawing. Finally, the pleating guides are placed on a flat surface for a period of about a week to allow further curing and hardening of the resin.

The function of the impregnation of the body 12 with the regularly spaced stiffening elements 14 is to achieve the stiffening effect caused by the metallic inserts provided in the double ply body, illustrated by my said pending application, said elements 14 placed in the same spaced relationship as illustrated therein, wherein a slight clearance C exists between the long edges of adjacent elements 14 and also along imaginary centerline 16 between the confronting short edges of the elements 14 (C'). As a consequence, the body 10 is foldable along fold lines coextensive with the clearance spaces C since the body in these areas consists only of the flexible ply of the body 10 and its remaining areas is prevented from being folded by the rigidity of the stiffening elements 14.

The manner in which the pleating guide 10 is used to produce pleats in a fabric curtain F or the like, can best be understood by progressive examination of FIGS. 2—4 which illustrate the pleating operation. Initially, and as clearly illustrated in FIG. 2, the body 10, while in the flat and an unfolded condition is placed along an edge of the fabric F with the lower half beneath the fabric body. Next, as illustrated in FIG. 3, the upper half of the body 10 is closed upon the fabric edge as a result of folding movement along the imaginary centerline 16. This results in the fabric F being firmly gripped between the two halves of the foldable body 10.

The next step in the pleating operation is illustrated in FIG. 4 which shows the folded body 10 in an initial folded condition in which it starts to assume an accordion or gusseted-type configuration. This is the result of the segments of the body between the fold lines, deformed by clearance spaces C, alternately folding upon themselves. Finally, the foldable body 10 reaches its completely folded accordion condition together, of course, with the fabric F such that more pleats are
formed in the fabric below the pleating guide 10, as fully shown in my said copending application. Tack stitching or other such appropriate means are used to retain the pleated condition. It is to be noted that the pleating guide is not sewn into the material, but is rather, removed therefrom.

In the second embodiment of the pleating guide hereof, illustrated in FIG. 5 wherein similar structure features are designated by the same reference numerals, except for an added spacing attachment 16, the details of which will be soon described, embodiment 20 is substantially similar to the embodiment already described.

As best shown in FIG. 5, the spacing attachment 16 includes a stiffening element 22 of elongated rectangular form provided, in the same manner as described above, to an appropriate section of fabric 24, integral with body fabric 12, which will be understood to be of a length at which it is desired to space successive groups of pleats in a curtain fabric. The spacing attachment 16 extends longitudinally from the bottom half of the guide 20 permitting the free end of the attachment 16 to be placed against the previously formed group of pleats. Thus, when the pleating guide 20 is then folded into its accordion shape the next group of pleats are located from the previously formed group by a distance determined by the length of the attachment 16.

I claim:

1. A fabric-pleating guide for pleating curtains or the like formed by an elongated body foldable at delineated intervals along its longitudinal extent into an accordion-type folded configuration, said body comprising a single ply material, plural stiffening elements arranged in a prescribed spaced relationship disposed on said body to form said foldable body so as to be foldable along fold lines defined by the spacing between said stiffening elements, said elements being substantially similar to one another with each element being generally rectangularly-shaped, said spacings being substantially equal to one another with each spacing defining one fold line, said similar elements and said equal spacings providing uniform pleats with each pleat including two elements, said body during use being operatively arranged in an unfolded condition against said fabric and thereafter folded in unison into said accordion-type folded configuration to thereby produce pleats in said fabric, said foldable body being additionally foldable along a longitudinally orientable fold line locatable along the medial portion thereof, said longitudinally orientable fold line being defined by a medial spacing disposed between said stiffening elements, said medial spacing transversing said equal spacings, whereby said body is adapted to close upon a fabric edge inserted therebetween as a result of folding thereof along said longitudinally orientable fold line to thereby more firmly grip said fabric during the pleating thereof.

2. A fabric pleating guide as defined in claim 1 wherein said body is formed of cloth fabric and said stiffening elements are formed of a resin curable to a stiff or hardened material.

3. A fabric-pleating guide for pleating curtains or the like formed by an elongated body foldable at delineated intervals along its longitudinal extent into an accordion-type folded configuration, said body comprising a single ply material, plural stiffening elements arranged in a prescribed spaced relationship disposed on said body to form said foldable body so as to be foldable along fold lines defined by the spacing between said stiffening elements, said body during use being operatively arranged in an unfolded condition against said fabric and thereafter folded in unison into said accordion-type folded configuration to thereby produce pleats in said fabric, and an elongated spacing member joined to an edge of said body so as to extend lengthwise thereof and effective to serve as a spacing guide for successive pleating locations along said fabric.

4. A fabric pleating guide as defined in claim 1 including an elongated spacing member joined to an edge of said body so as to extend lengthwise thereof and effective to serve as a spacing guide for successive pleating locations along said fabric.