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Fig. 1.

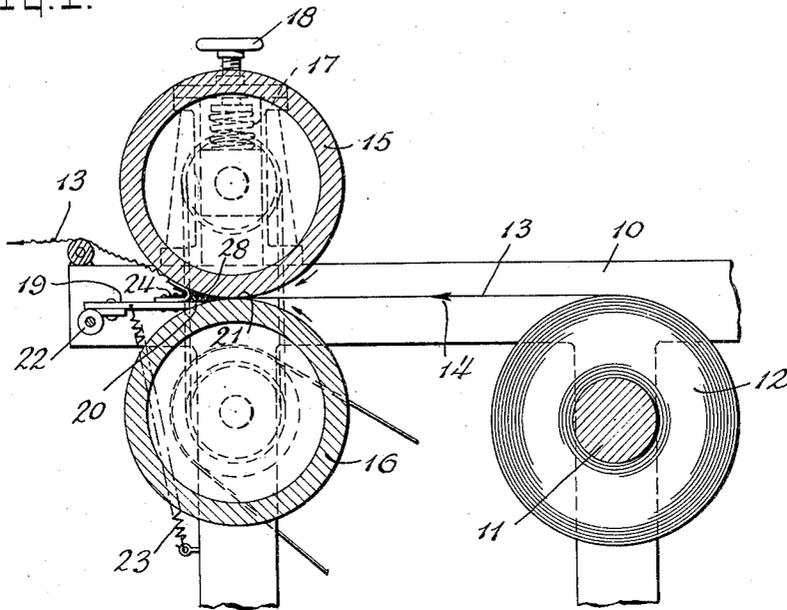


Fig. 2.

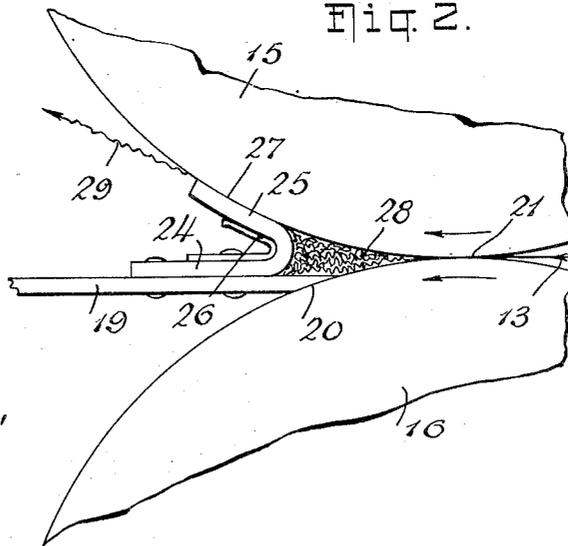
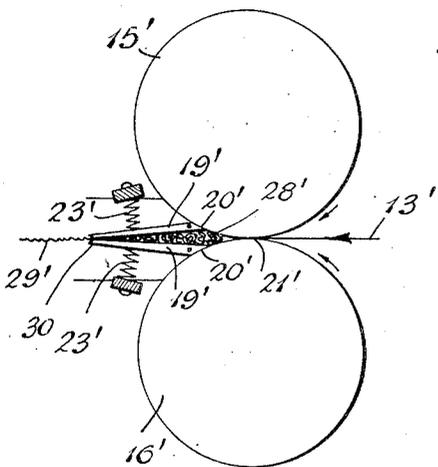


Fig. 3.



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3 Claims. (Cl. 26—1)

The present invention relates to improved fabrics and it particularly relates to a method of obtaining decorative and artistic crinkled, ridged and crepe effects in fabrics.

5 An object of the present invention is to provide permanently creped, ruffled and crinkled textile fabrics of highly artistic and decorative appearance which may be inexpensively manufactured by a relatively simple process from the usual textile materials, without the difficulties involved in employing special weaves of special twisted thread arrangements in the filler threads and without the necessity of employing expensive and extended chemical treatments which would dis-  
15 advantageously affect portions of the fabric and create an undesirable effect therein.

Another object is to provide crinkled and creped fabrics of highly artistic and decorative appearance by a relatively simple manufacturing process not requiring highly skilled manipulation or difficult processing operations in which it will be most readily possible to control the character and quality of the creped and crinkled effect.

Other objects will appear during the course  
25 of the following specification.

In accomplishing the above objects it has been found, if a roll or bolt of a fabric material, such as silk, rayon, cotton, wool, linen or a fabric having mixed fibers, be treated or moistened with  
30 a fixing or similar solution, and then passed through heated rollers into a relatively small compartment into which it is jammed up and compressed upon being pressed forwardly by said rollers and from which it will be released by its  
35 own compressive force against a resiliently-opened or flexible outlet, that a most suitable crinkled, rippled and creped fabric will be formed.

The above and other objects will appear more clearly from the following detailed description,  
40 when taken in connection with the accompanying drawing, which illustrates a preferred embodiment of the inventive idea.

In the drawing:

Figure 1 diagrammatically illustrates a side  
45 view of the apparatus.

Figure 2 is a fragmentary view of a portion of Fig. 1 upon an enlarged scale, and

Figure 3 is a side view of another embodiment diagrammatically illustrating how the effect may  
50 be produced in a slightly different manner.

Referring to Fig. 1, the frame 10 carries the shaft 11, which carries the roll of the fabric 12 from which said fabric 13 may be unrolled in the direction indicated by the arrow 14.

55 The rollers 15 and 16 are preferably of a metal

such as copper or brass and are pressed together by the spring 17, the tension on which may be adjusted by the handle 18.

One of the rollers, illustratively the roller 16, may be preferably heated by steam or by an arrangement of flames playing thereon. The doctor blade 19 closely contacts with the roller 16 at 20 just past the point of contact or tangency 21 (see also Fig. 2).

The doctor blade is pivoted at 22 as shown in Fig. 1, and is drawn downwardly by the spring 23, so that its edge at 20 will press closely to the roll and will prevent any of the fabric 13 from passing below the doctor blade 19. To the upper face of the doctor blade is connected a flexible strip of material 24, the outer portion 25 of which is pressed closely against the upper roll 15. Preferably this strip of material is provided with the resilient fingers 26 which enable regulation of the pressure against the upper roll as indicated at 27. Between the front end of the doctor blade 19 and the flexible pad or strip 25 is formed the elongated chamber 28 of wedge-shaped cross-section, into which the material 13 is forced with considerable pressure by the rolls  
80 15 and 16.

The material 16 has preferably been previously moistened and/or treated with a fixing solution so that it will retain the crinkling and creped effect which is given to it.

When the fabric 13 is first pressed into the chamber 28 it will pile up therein and then when the pressure has risen to a substantial degree it will be forced out past the contact 27 between the roller 15 and the resilient member 25 in a permanently crinkled form and shape, as indicated at 29.

The fabric in the condition as indicated at 29 may be dried and/or fixed so that the crinkling or creping effect will be permanent.

This fabric has a particularly artistic and decorative appearance and the crepe therein is of substantially different quality from crepes which it has previously been possible to produce. No longitudinal marks will be formed along the length of the fabric and the crinkled, creped and/or crumpled effect will be highly uniform.

By regulating the pressure between the rollers 15 and 16, the tension of the let-off of the fabric from the roll 12, and the pressure exerted by the resilient member 25 against the roll 15, and the cross-sectional area space of the chamber 28, the crinkled and rumped effect may be most conveniently controlled and regulated to give any desirable effect. If desired, any effect from a  
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mere surfacing may be obtained, as for example a wavy effect on satin goods without substantial embossment up to a very high creped and ruffled appearance, of a character which has not been previously possible to produce.

5 The flexible strip 25 may be made of different kinds of material, and it has been found most satisfactory to make it of a relatively thick pad of rubber, which it is possible for the goods to push away from the roller 15 when a substantial accumulation occurs in the chamber 28. By 10 this rumpling, crinkling or creping operation, the length of the goods may be decreased from 25% to as much as 75%, depending upon the depth and spread of the wave effect in the fabric.

15 In Fig. 3 is shown a different arrangement, similarly functioning parts being designated by the same numerals primed.

In this embodiment there are provided two doctor blades 19, the upper doctor blade 19' taking the place of the rubber pad 25 of Figs. 1 and 2. These two doctor blades are spaced apart at their forward end adjacent the point of contact or tangency 21' between the rollers 15' and 16' and they are pressed closely together at their rear end 30 by the springs 23' which also press 25 the front ends of said doctor blades at 20' against the rollers 15' and 16'. The goods 13' will be forced into the small chamber 28' formed in front of the point of tangency 21' and the goods 30 upon piling up therein will force themselves out between the ends of the doctor blades 19' at 30 against the tension of the springs 23'.

Various types of fixing solutions may be employed such as an organic solvent material for 35 cellulose acetate fabrics (Celanese), while in the case of cellulosic fiber fabrics such as rayon, cotton and so forth, solutions or emulsions of plastic protein or carbohydrate materials and/or synthetic or natural resinous materials may be 40 employed. Similar plastic materials may be utilized with protein fibers, such as natural silk and/or wool. These plastic fixing solutions may contain dextrine, starch, glue, gum tragacanth, 45 gelatin, Irish moss, agar-agar, and so forth, either in emulsion or solution form. They may be sprayed upon the fabric and/or the fabric may be passed through a bath of these solutions and then pressed out between rolls.

The ruffled, crinkled and creped fabrics of the present invention may be conveniently utilized for dress material, for shoes, for pocketbooks and for various other purposes where ordinary fabrics may not be readily utilized. For example, it may be backed by a rubberized sheet of material or by fabric backings or may be combined with other fabrics to give most artistic effects.

What is claimed is:

1. A process of producing crinkled, ruffled and/or creped fabrics which comprises applying to a bolt or roll of fabric a fixing solution, passing said fabric between rollers, one of which is heated, restraining the exit of said material from between said rollers in a small compartment by a resilient closure at an outlet of said rollers, said resilient closure being formed by a doctor blade and a rubber pad resiliently pressed against the rollers just beyond their point of contact or tangency, said fabric being forced into said chamber with such force by said roll as to cause it to force itself beyond the resilient contact between said roller and said pad beyond said chamber.

2. A process of producing crinkled, ruffled and/or creped fabrics which comprises applying to a bolt or roll of fabric a fixing solution, passing said fabric between rollers, one of which is heated restraining the exit of said material from between said rollers in a small compartment by a resilient closure at an outlet of said rollers, said resilient closure being formed by two doctor blades pressed against said rollers just beyond their point of tangency or contact and coming together therebeyond, said fabric being forced into said chamber with such pressure by said roll as to cause it to force itself beyond the resilient contact between said doctor blades.

3. A process of producing crinkled, ruffled and/or creped fabrics which comprises applying to a bolt or roll of fabric a fixing solution, passing said fabric between rollers, one of which is heated restraining the exit of said material from between said rollers in a small compartment formed by a resilient closure at an outlet of said rollers, said fabric being forced into said chamber with such force by said rolls as to force itself beyond the resilient closure of said chamber.

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