United States Patent

Lewis

[15] 3,683,419

[45] Aug. 15, 1972

[54] MOIRE PATTERN GARMENT

[72] Inventor: **Robert B. Lewis,** P.O. Box 2190, Aspen, Colo. 81611

[22] Filed: **Sept. 11, 1970**

[21] Appl. No.: **71,615**

[52] **U.S. Cl.**.....**2/67,** 2/69, 2/243 R, 40/106.51, 161/3

[51] **Int. Cl.**.....**A41d 7/00,** A41d 1/00

[58] **Field of Search**.....2/67, 69, 1, 102, 243; 40/106.51, 106.52, 106.53, 137; 161/3, 5, 6

[56] **References Cited**

UNITED STATES PATENTS

3,589,045	6/1971	Rakowsni	40/137 X
2,982,033	5/1961	Bingham	40/106.51 X
2,326,397	8/1943	Schwartz	40/106.51 X
1,449,914	3/1923	Saalburg	40/137 X
1,088,107	2/1914	Spiegel	40/106.51 X
3,055,133	9/1962	Anderson	2/102 X

FOREIGN PATENTS OR APPLICATIONS

885,983	8/1953	Germany	2/67

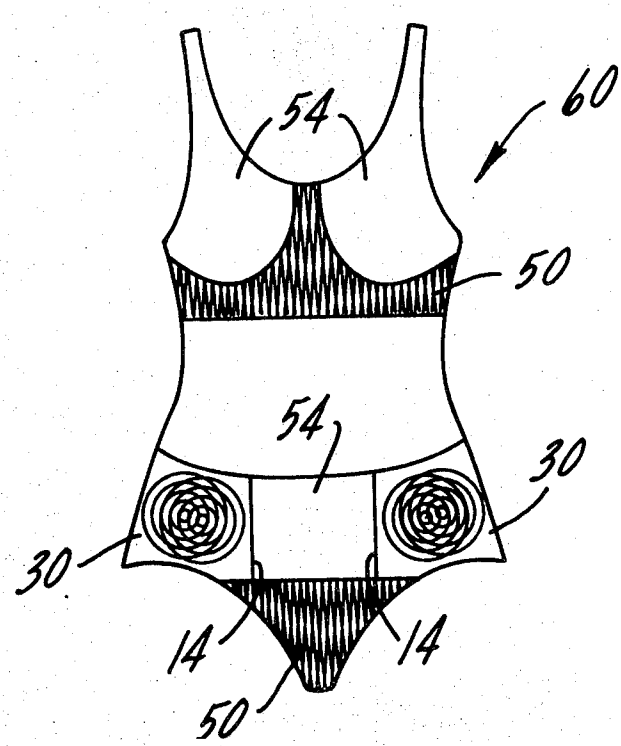
Primary Examiner—H. Hampton Hunter

Attorney—Hume, Clement, Hume & Lee

[57] **ABSTRACT**

There is disclosed a garment comprising a plurality of panels connected by seams at certain of their edges to collectively form the desired shape wherein at least one of the panels is formed of two plies of flexible material, the other of which is transparent and both of which carry on one of their surfaces a visible decorative pattern and wherein each of the decorative patterns is of such character and is so disposed relative to the other as to provide through a slight relative movement between the two plies a changing moire visual effect, the plies of the panel being attached to each other at their margins so as to maintain the plies and their respective patterns in their predetermined relative positions, and the plies being unattached throughout an area centrally of the margins of the panel whereby the plies respectively throughout the area are free to move relative to each other when the garment is being worn and wherein the garment exhibits a changing moire visual effect when the wearer of the garment is in motion.

4 Claims, 7 Drawing Figures



PATENTED AUG 15 1972

3,683,419

SHEET 1 OF 2

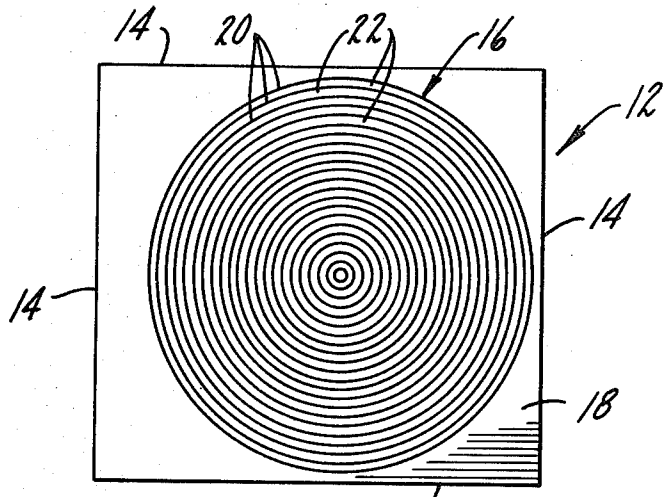


FIG. 1.

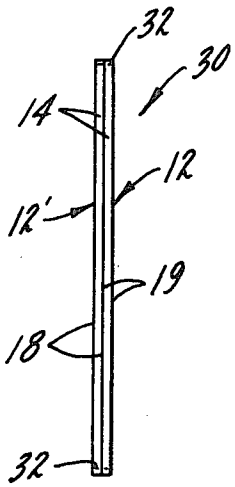


FIG. 3.

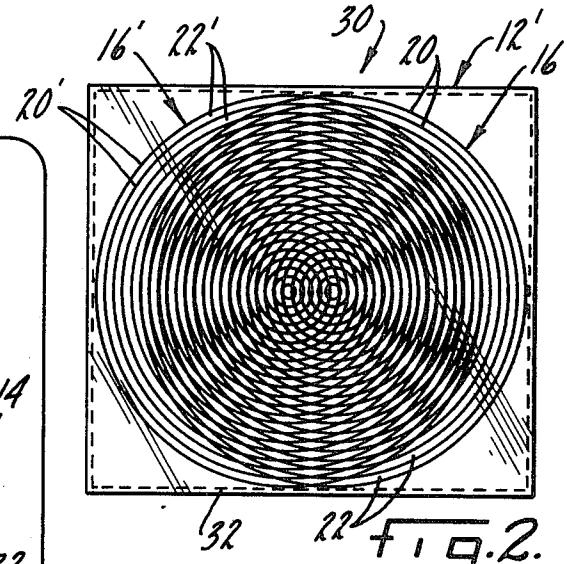


FIG. 2.

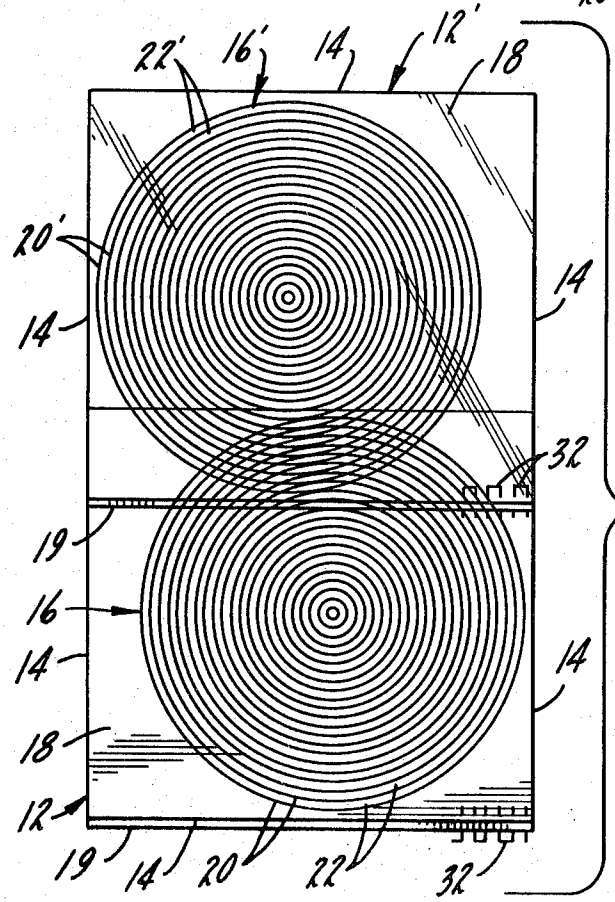


FIG. 4.

INVENTOR.
Robert B. Lewis
BY JAMES P. HUME
JACK C. BERENZWEIG
Attorneys.

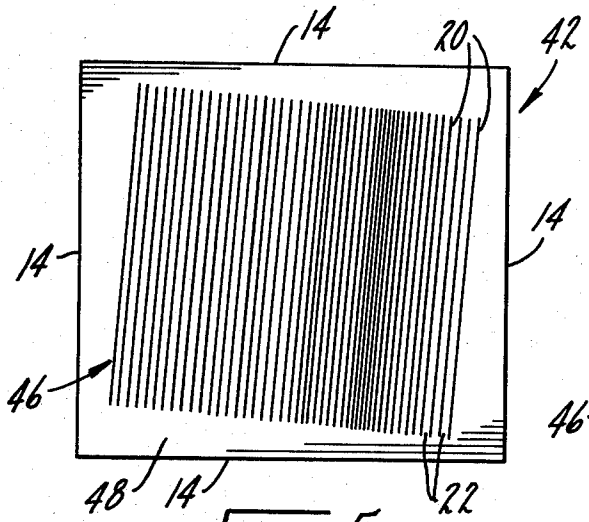


fig. 5.

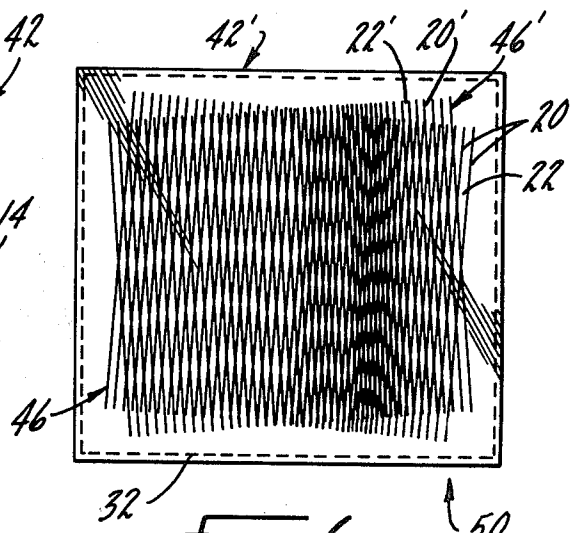
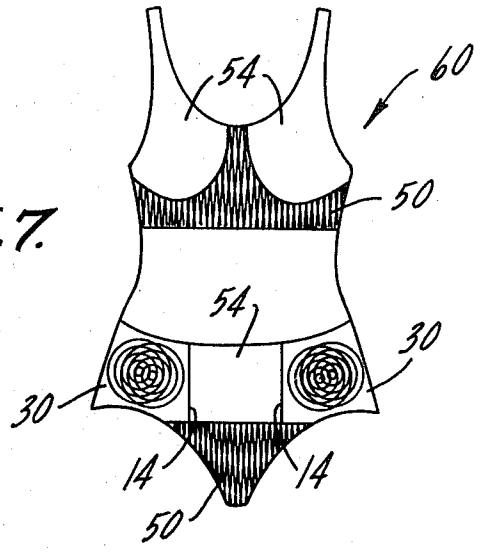


fig. 6.

fig. 7.



INVENTOR.
Robert B. Lewis
BY JAMES P. HUME
JACK C. BERENZWEIG
Attorneys.

MOIRE PATTERN GARMENT

BACKGROUND OF THE INVENTION

The present invention relates to wearing apparel and more particularly to a two-ply garment which is so constructed so as to exhibit a changing moire visual effect when the wearer of the garment is in motion.

The moire visual effect has been well known for several years. In the textile field, the moire effect is a term which is applied to the finish of a fabric which yields a watery or wavy visual effect. Heretofore, moire patterns have only been produced in the art of producing moire by treating the surface of a single layer of fabric to form scratches. This has been accomplished in the following manner. The fabric is customarily treated while in two layers, which are usually formed by folding the material to form a two-ply web. The web is then passed through a scratching machine in which the moire pattern is scratched on the surface of the fabric. After passing through the scratching machine and suitable conditioning, the web is passed between heated rolls which apply pressure to cause the design to be reproduced upon the inner or abutting surfaces of both of the plies, the final result being a characteristic moire effect wherein the scratch pattern has a different luster or sheen in the remainder of the fabric. The fabric is then unfolded resulting in a single layer moire fabric. This single layer of fabric, specially treated on its surface, is then used to form a garment in a conventional manner. One such fabric used in this process is silk and is commonly referred to as moire silk.

A second type of moire effect, not associated with the textile industry, is well known in the field of art. In this field, most moire patterns are generated by figures that consist of lines superimposed upon one another; e.g., a transparent sheet of paper containing the pattern of lines being superimposed upon a second sheet of opaque paper also having a pattern of lines on its surface. The only general requirement for a moire pattern is that the interacting figures have some sort of solid and open regions. The solid regions can be lined (straight, curved or wiggly), or any other geometric form. In the typical moire pattern, the moire effect materializes when two sets of straight lines are superimposed so that they intersect at a small angle. If the superimposed lines are nearly parallel, a tiny displacement of one of the figures will give rise to a large displacement in the elements of the moire pattern. In other words, the displacement is magnified. This psychological effect of magnification through the superposition of two figures by transparency forms the basis for the present invention.

SUMMARY OF THE INVENTION

The present invention contemplates the utilization of a plurality of panels connected by seams at certain of their edges to collectively form the desired shape of a garment wherein at least one of the panels is formed by two plies of flexible material, the outer of which is transparent and both of which carry on one of their surfaces a visible decorative pattern, the decorative pattern comprising a plurality of solid regions and open regions, and wherein the solid and open regions of each of the patterns is disposed relative to the other so as to provide through a slight relative movement between the two plies, a changing moire visual effect. The plies

of this panel are attached to each other at the margins so as to maintain the two plies and their respective patterns in their predetermined relative position. The plies are unattached throughout an area centrally of the margins whereby they are free to move throughout the central area relative to each other when the garment is being worn and wherein the garment thereby exhibits a changing moire visual effect when the wearer of the garment is in motion.

It is, therefore, an object of the present invention to provide a garment which exhibits a changing moire visual effect when the wearer of the garment is in motion.

Another object is to provide a garment comprising a plurality of panels wherein at least one of the panels is formed of two plies of flexible material, the outer of which is transparent and both of which carry on one of their surfaces a visible decorative pattern which is of such a character so as to provide a changing moire visual effect due to relative motion between the two plies.

A further object is to provide a garment which exhibits a changing moire visual effect and which does not require the use of a moire scratch pattern being placed on the surface of the garment.

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.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of a single ply of flexible fabric having a decorative pattern on its surface.

FIG. 2 is a panel which is made from two of the plies shown in FIG. 1.

FIG. 3 is a side view of the panel shown in FIG. 2.

FIG. 4 is an exploded view of the panel shown in Fig. 2.

FIG. 5 is a single ply of flexible material having a decorative pattern on one of its surfaces.

FIG. 6 is a panel made up from two of the plies shown in FIG. 5.

FIG. 7 is a front view of a garment which constitutes the embodiment of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings wherein like reference characters designate like or corresponding parts throughout the several views, there is shown in FIG. 1 a single ply of flexible material **12** having a plurality of edges **14** and a decorative pattern **16** affixed on an upper surface **18** of the single ply of flexible material **12**. The decorative pattern **16** may be affixed on the surface of the flexible material **12** by any suitable means such as by printing. Furthermore, the pattern may also be woven into the material. Decorative pattern **16** comprises a plurality of concentric circles wherein the concentric circles form a plurality of solid regions **20** and a plurality of open regions **22**.

Referring now to FIGS. **2**, **3** and **4**, there is shown a panel **30** being formed of two plies of flexible material **12** and **12'**. Flexible material **12** is identical to the material shown in FIG. **1** and may be manufactured

from any opaque flexible material such as cotton, wool or silk. Single ply 12' is similar to single ply 12 except that instead of being opaque, it is manufactured from a transparent or translucent material. Two suitable transparent materials are plastic and cellophane; however, it will be recognized by one skilled in the art that many other substitute transparent or translucent materials may be utilized. Each of the single plies of flexible material 12 and 12' comprise an upper surface 18 and a lower surface 19. The upper surface of each of the plies 12 and 12' have printed thereon a decorative pattern 16 and 16', respectively. The decorative patterns each comprise closed regions 20 and 20', respectively, and open regions 22 and 22', respectively. The two plies 12 and 12' are attached to each other by a suitable fastening means 32 along their outer edges or margins 14. The plies 12 and 12' are only attached along their edges 14 such that the central area within the edges remains free so that each of the plies may move relative to the other.

When the plies are assembled, care must be taken so as to ensure that the decorative pattern 16 is slightly misaligned with respect to pattern 16' such that their relative positions are similar to that shown in FIG. 2. In this manner, when the two sets of concentric circles constituting decorative patterns 16 and 16' are placed together slightly off-center, the moire visual effect occurs and any slight movement between the two surfaces causes the moire patterns to change rapidly as the circles are moved. As the two sets of overlapping circles are moved, the number of radiating moire bars increases. It will be recognized that it is necessary to place the decorative pattern 16 along the upper surface 18 of the opaque ply 12. However, decorative pattern 16' may be placed either on the upper surface 18 (as shown in FIG. 4) or the lower surface 19 of the transparent or translucent ply 12'.

Referring now to FIG. 5, there is shown a single ply of flexible material 42 having a decorative pattern 46 printed on its upper surface 48. The single ply 42 is identical to single ply 12 except for the design of the decorative pattern contained thereon. FIG. 6 is similar to FIG. 2 and shows a two-ply panel 50 being comprised of two plies of flexible material 42 and 42'. Ply 42 in the preferred embodiment is manufactured from a transparent or translucent material. The construction of panel 50 is identical to the construction of panel 30 and further description is not deemed necessary. It will be noted, however, that the utilization of the parallel lines to form the open and closed regions of the decorative patterns 46 and 46' produces a different moire visual effect than did the patterns 16 and 16' in FIG. 2. Observing FIG. 6, it can be seen that the parallel superpositioning of two sets of parallel lines (for example, decorative patterns 46 and 46') cause moire visual bands to appear. Any movement between the two plies 42 and 42' will cause these moire bands to be amplified thereby giving a greater moire effect. The panels 30 and 50 shown in FIGS. 2 and 6 are only representative of the types of moire visual effects which may be achieved by constructing a panel in accordance with the present invention. It will also be recognized by one skilled in the art that the decorative pattern placed on the transparent flexible material need not be identical to the decorative pattern placed on the opaque flexible material. The only requirement of the patterns is that they comprise a plurality of open and closed regions in order to produce the moire visual effect.

Referring now to FIG. 7, there is shown a garment 60 which constitutes the preferred embodiment. The garment 60 is manufactured from a plurality of panels 54 which are connected along selected seams to form a garment of a desired shape. As contemplated by the preferred embodiment, at least one of the panels 54 will be replaced by a panel 30 such that the panel 30 will display a changing moire visual effect when the wearer of the garment is in motion.

FIG. 7 discloses a moire garment having a plurality of panels 54. Selected edges of the panels 54 are connected to the edges 14 of panels 50 and 30, thereby providing a garment which at certain portions will exhibit a changing moire visual effect. It will be recognized by one skilled in the art that the entire garment may be made up of two ply panels such as panels 30 and 50 so as to provide an overall visual moire effect. However, the garment 60 shown in FIG. 7 only utilizes four such panels. However, any number of such panels may be utilized. It should be understood, of course, that the foregoing disclosure relates to only a preferred embodiment of the invention and that numerous modifications or alterations may be made therein without departing from the spirit and the scope of the invention as set forth in the appended claims.

What is claimed is:

1. A garment comprising:

a plurality of panels connected by seams at certain of their edges to collectively form the desired shape wherein at least one of said panels is formed of two plies of flexible material, the outer of which is transparent and both of which carry on one of their surfaces a visible decorative pattern, said decorative patterns each comprising a plurality of solid regions and a plurality of open regions wherein said solid and open regions of said outer ply cooperates with said solid and open regions of said second ply so as to provide a changing moire visual effect upon said slight relative movement of said plies;

said plies of said panel being attached to each other at their margins so as to maintain said plies and their respective patterns in their predetermined relative positions; and

said plies being unattached throughout an area centrally of the margins of said panel whereby said plies respectively throughout said area are free to move relative to each other when the garment is being worn and wherein the movement of the wearer of said garment causes said relative movements of said plies thereby resulting in said changing moire visual effect.

2. The garment of claim 1 wherein said second ply is opaque.

3. The garment of claim 2 wherein said decorative pattern on said outer ply is identical to said decorative pattern on said inner ply.

4. The garment of claim 3 wherein said plurality of panels are connected so as to form a bathing suit.

* * * * *