

No. 658,746.

Patented Sept. 25, 1900.

C. H. HOPE.

MERCHANTABLE PRINTED CLOTH OF CHANGEABLE COLOR.

(Application filed June 6, 1900.)

(No Model.)

FIG. 1.



FIG. 3.

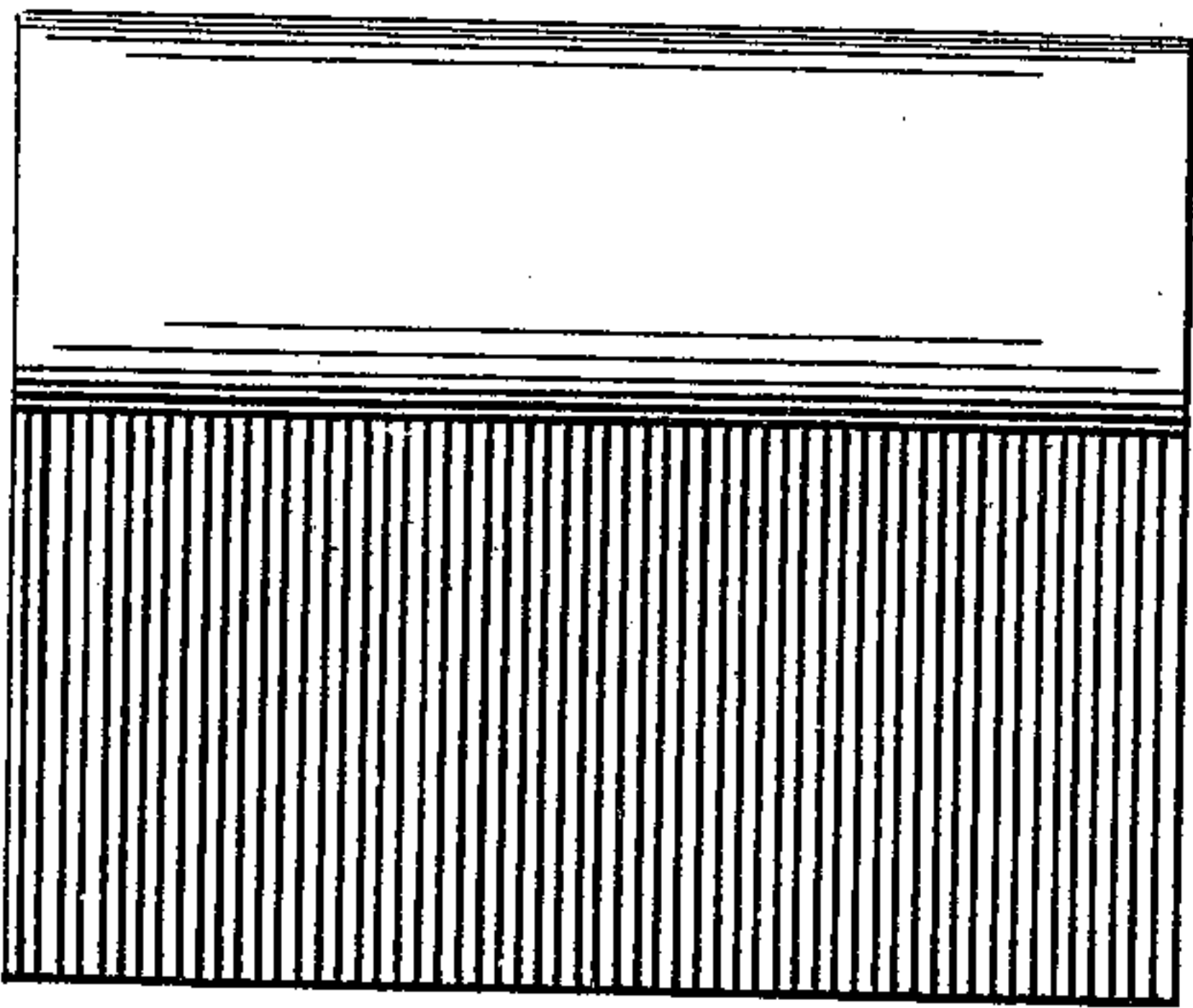


FIG. 2.

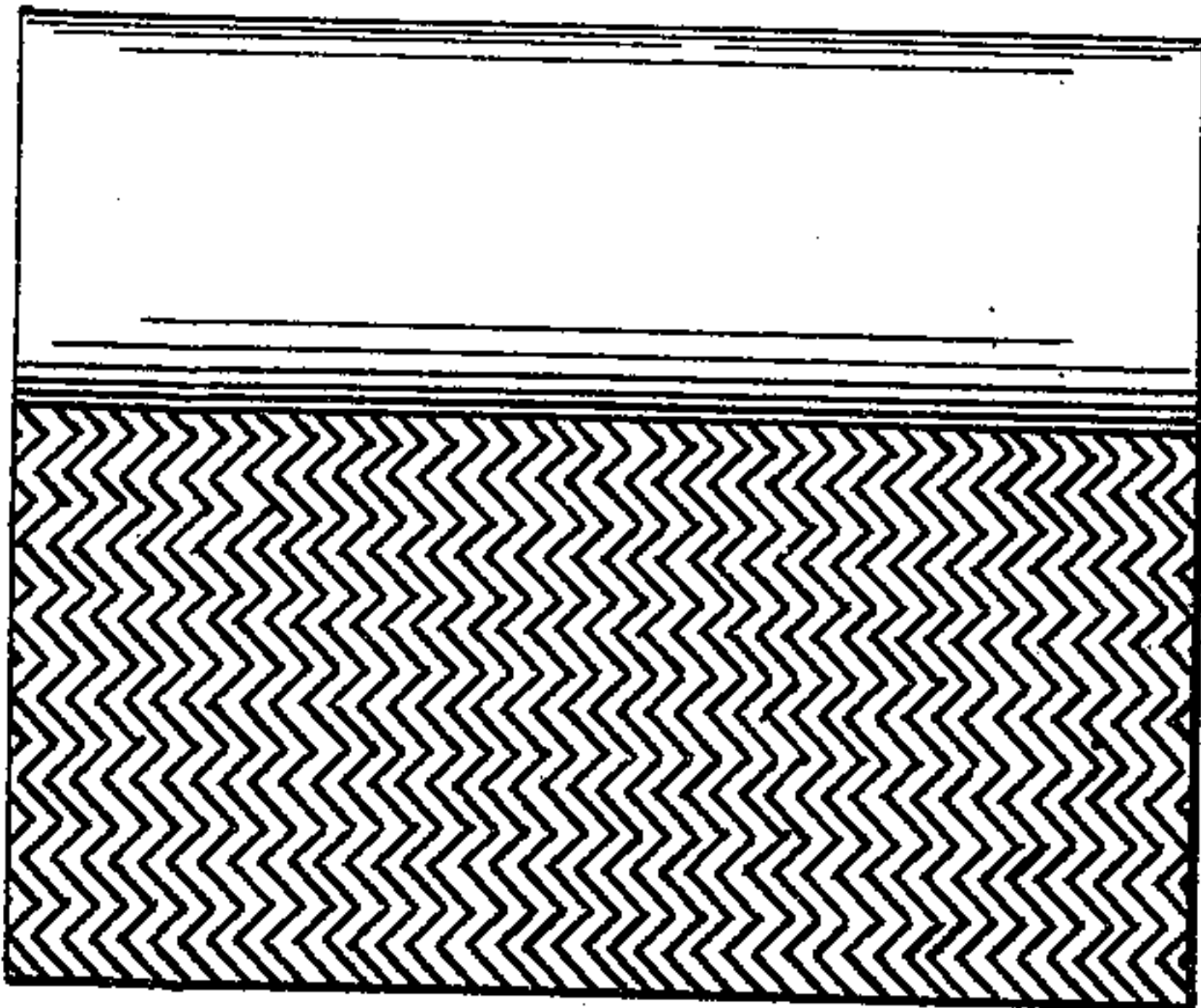


FIG. 4.

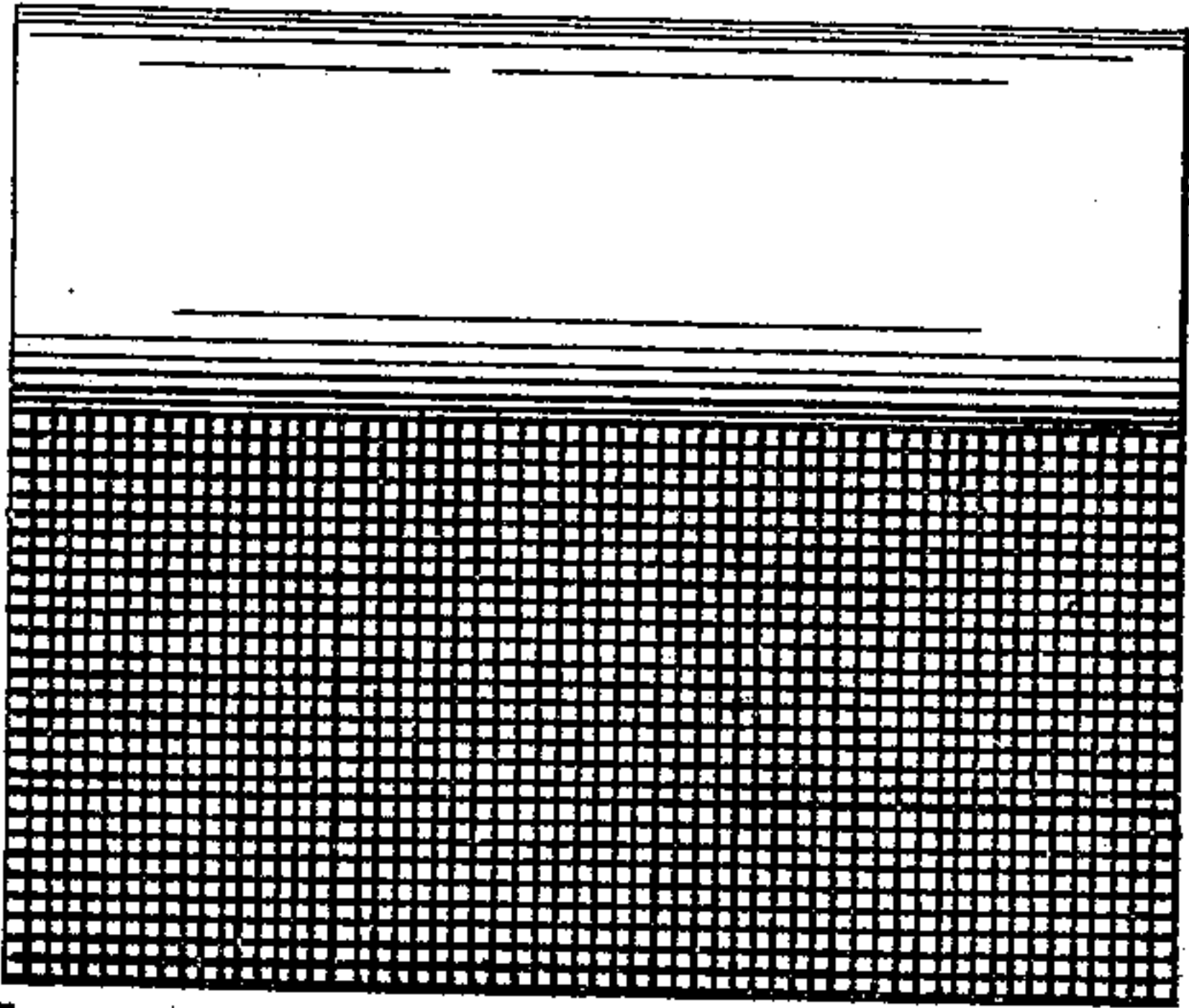


FIG. 5.

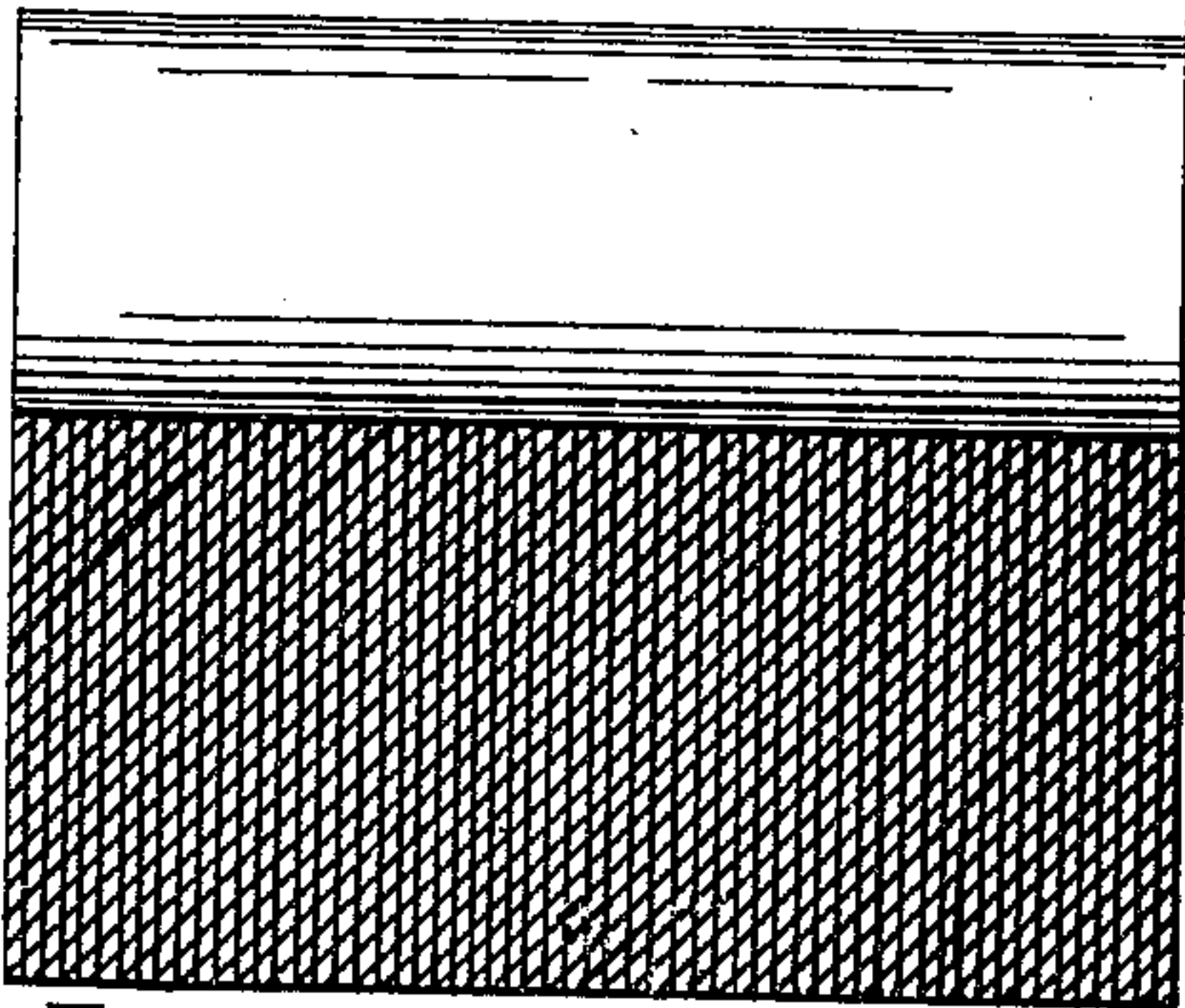


FIG. 6.

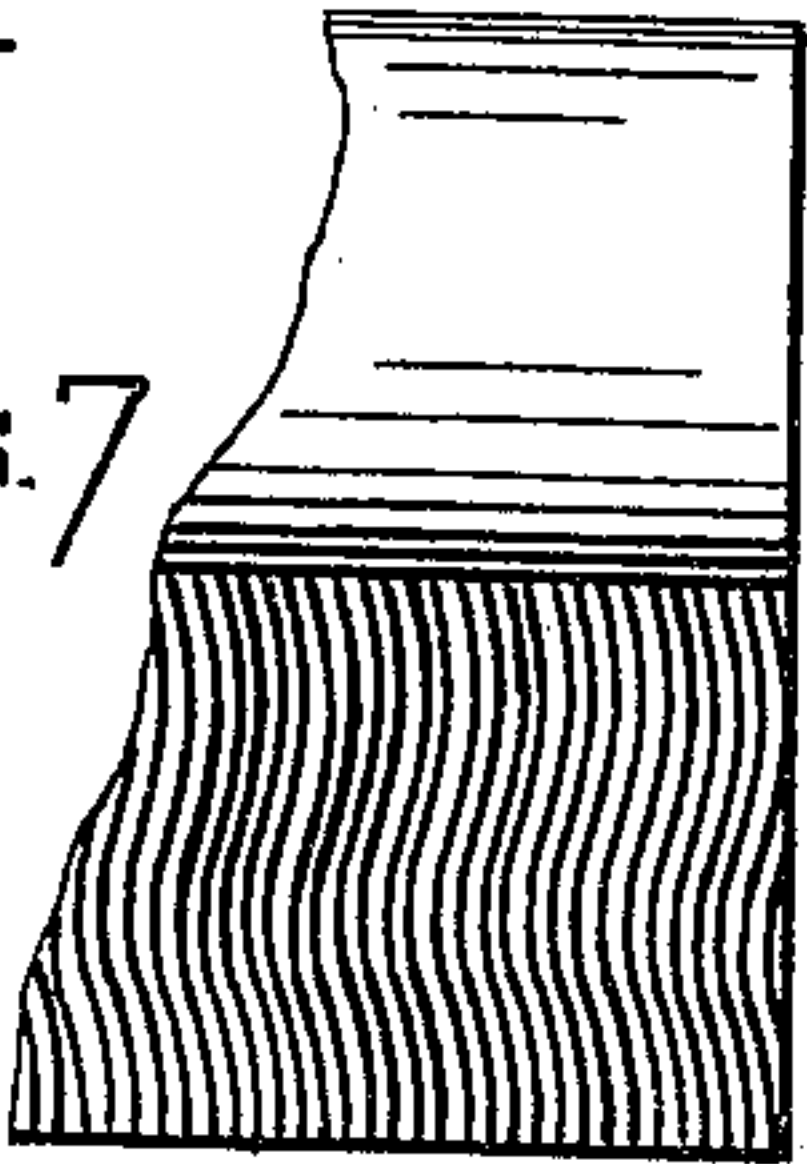


FIG. 7.

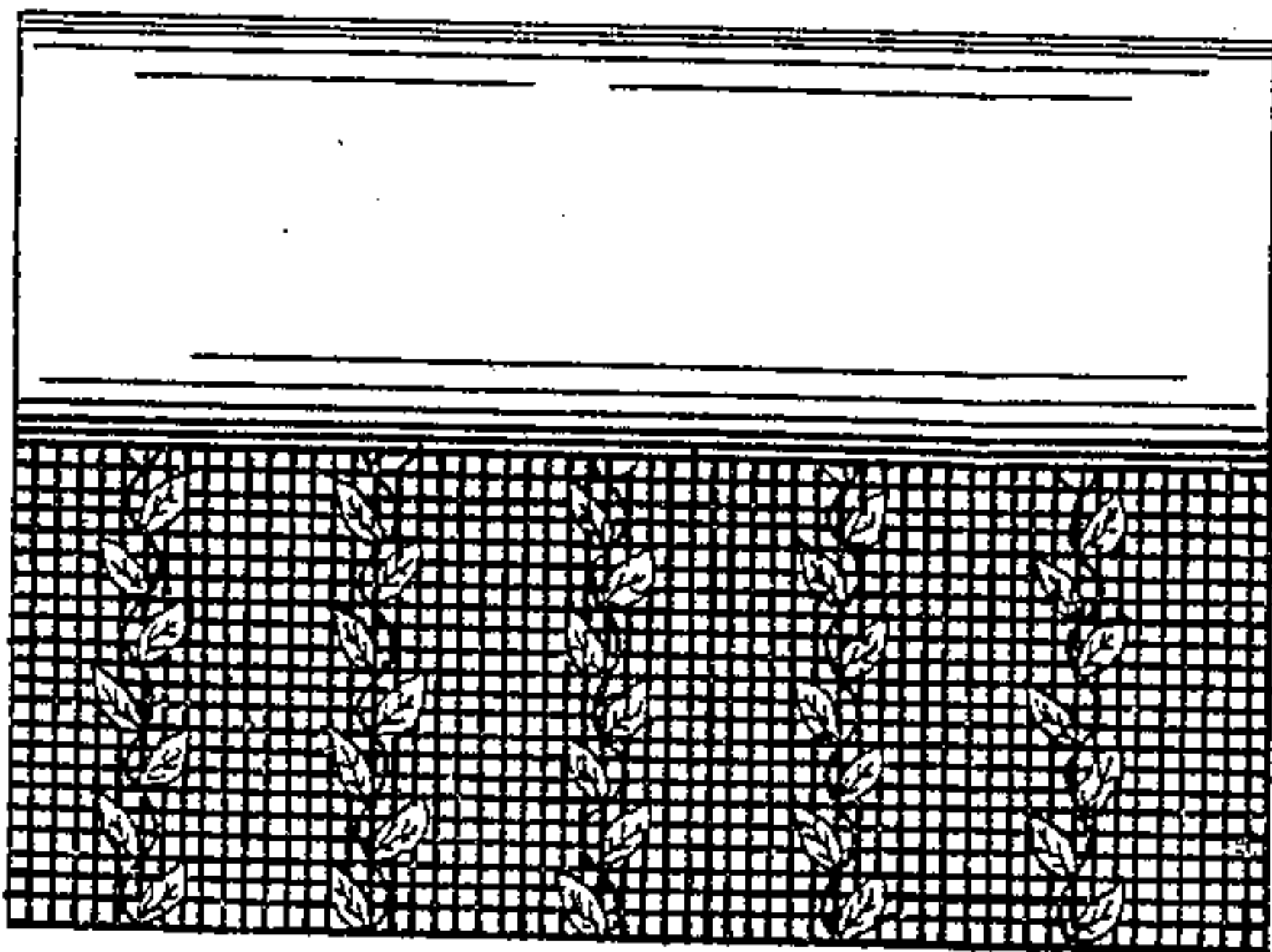


FIG. 8.

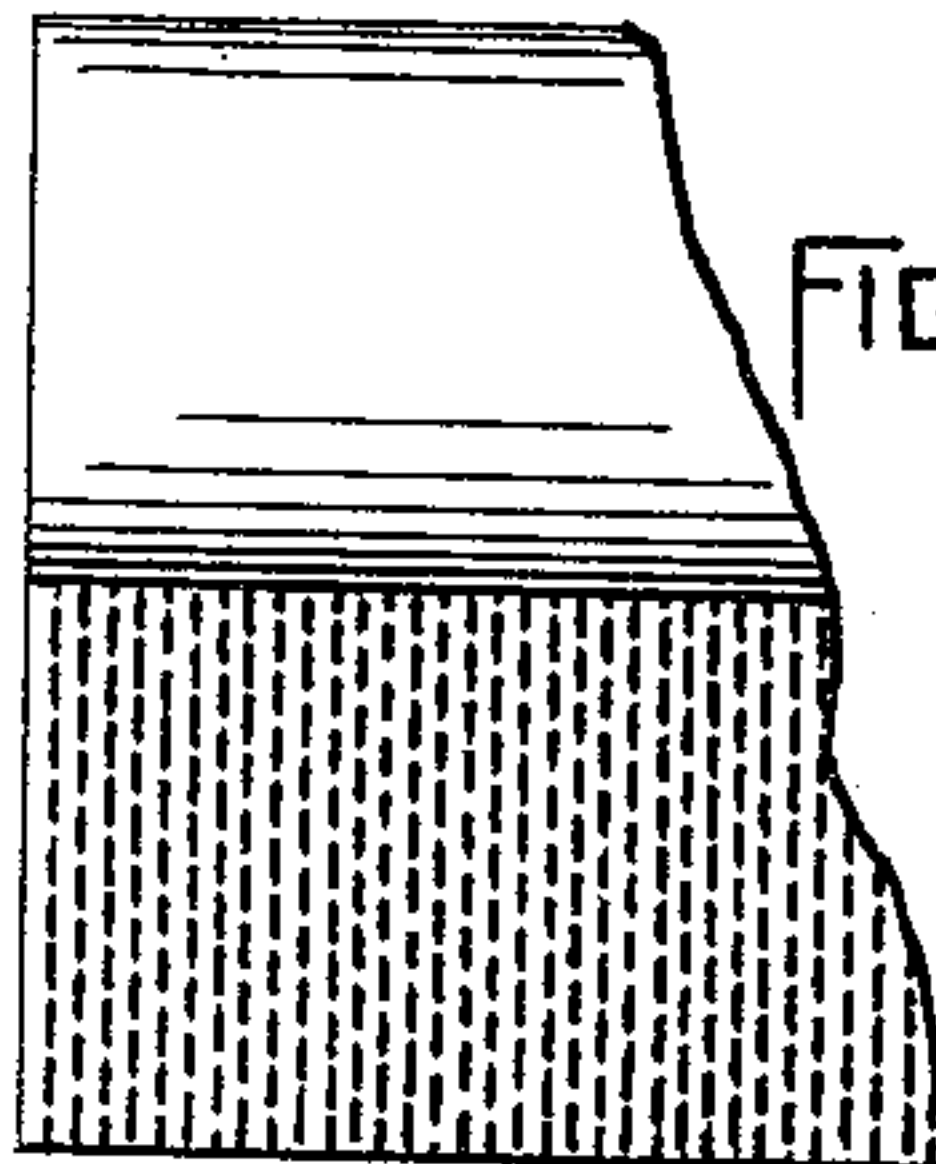


FIG. 9.

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UNITED STATES PATENT OFFICE.

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MERCHANTABLE PRINTED CLOTH OF CHANGEABLE COLOR.

SPECIFICATION forming part of Letters Patent No. 658,746, dated September 25, 1900.

Application filed June 6, 1900. Serial No. 19,323. (Specimens.)

To all whom it may concern:

Be it known that I, CHARLES H. HOPE, a citizen of the United States, residing at Providence, in the State of Rhode Island, have invented a new and useful Improvement in Merchantable Printed Cloth of Changeable Color, of which the following is a specification.

Heretofore the method of imparting the property of changeable color to textile fabrics has consisted in the incorporation in the woven fabric of certain threads having the proper contrasting colors, and this changeable effect has been mainly produced upon fabrics made of silk, which are therefore expensive; but I have discovered that the presentation of changeable colors may be effected upon cotton, linen, or other textile fabrics by the process of printing when the fabric has been first calendered and finished, so as to produce the required glossy surface for the shining reflection of light; and my invention consists in a merchantable piece of cloth having a glossy calendered surface upon which are printed lines of a contrasting color from that of the cloth and of a sufficient degree of fineness and nearness to each other to simulate the threads or wales of the fabric, the deposited pigment or coloring-matter of the printed lines being retained above the glossy calendered surface of the fabric upon which the printing is performed, whereby the effect of changeable colors will be produced when the cloth is viewed at different angles of light and shade.

My invention also consists in the combination of the colored lines printed upon the glossy calendered surface of the fabric with a printed figured ornamentation for the production of a changeable ornamental fabric.

Heretofore in cloth-printing the printing has been performed upon the piece of cloth in its uncalendered and unfinished condition, the required calendering and finishing operations being performed subsequent to the printing operation; but by this method the desired changeable effect cannot be obtained.

In the accompanying drawings, Figure 1 represents an end view of a roll of merchantable cloth partly unwound to expose its inner printed surface for inspection. Fig. 2 represents a top view of the same, showing printed lines which extend lengthwise of the

calendered surface of the cloth for carrying out my improvement. Fig. 3 represents a forward edge view of the piece of cloth, showing the pigment of the printed lines of Fig. 2 as resting upon the previously-calendered surface of the cloth. Fig. 4 represents a piece of cloth provided upon its calendered surface with zigzag lines adapted for carrying out my improvement. Fig. 5 represents a merchantable piece of cloth provided upon its calendered surface with intersecting sets of printed parallel lines which simulate the warp and weft threads of the fabric. Fig. 6 represents a merchantable piece of cloth provided upon its calendered surface with sets of printed parallel lines which intersect each other at a different angle from that shown in Fig. 5. Fig. 7 is a broken view showing a portion of a merchantable piece of cloth having a calendered surface provided with printed curved lines instead of the straight lines shown in Fig. 2. Fig. 8 is a broken view showing a portion of a merchantable piece of cloth having a calendered surface provided with printed broken lines. Fig. 9 represents a piece of cloth having a calendered surface provided with printed lines in combination with printed ornamental figures to form an ornamental fabric of changeable color.

In the drawings, Fig. 1, *a* represents a roll of merchantable cloth of any suitable color, made of cotton, linen, or other approved material, upon the glossy calendered surface *b* of which the desired effect of changeable color is produced, as shown in Fig. 2, by means of the printed lines *c c*, having a contrasting color from that of the glossy surface *b* of the cloth and made of a sufficient degree of fineness and nearness to each other to represent the threads or wales of the fabric, the deposited pigment of the said lines being left upon the calendered surface of the cloth, as indicated in Fig. 3, instead of being calendered to a uniform surface, as in the ordinary finishing process for printed goods.

The calendered surface *b* of the piece of cloth *a* (shown in Fig. 4) is provided with the printed zigzag lines *d d*, having a contrasting color from that of the surface *b* and serving, like the lines *c c* of Figs. 2 and 3, to produce the desirable appearance of changeable color when the said lines are made of the required

degree of fineness and nearness to each other. A set of lines *ee* may also be printed upon the calendered surface *b* of the cloth, intersecting the set of lines *ff* at right angles, as shown in Fig. 5, thus simulating the warp and weft threads of the fabric, and the said sets of printed lines may be either made of the same color or of different colors, as desired, in producing the changeable effect, and instead of having the sets of lines intersect each other at right angles they may be made to intersect each other at any desired angle, a different angle of intersection being shown in Fig. 6, and the lines may be made to run in any desired direction upon the surface of the fabric. The printed lines instead of being made straight and parallel, as shown in Fig. 2, may be curved, as shown by the lines *gg* in Fig. 7, and thus produce desirable effects of changeable color. They may also consist of broken or dotted lines, as shown by the broken lines *hh* in Fig. 8, and ornamental figures *ii* may be printed upon the cloth in connection with the printed lines, as shown in Fig. 9, thus producing desirable ornamental effects.

When the pigment or coloring-matter of the printed lines has been pressed into the surface of the fabric by the process of calendering, which process has been universally employed in the final finishing of cloth-prints for the market, the printed lines will not serve to produce the desired changeable effect; but in carrying out my invention the cloth is first calendered to flatten the threads, and thus

produce a comparatively smooth, compact, and glossy surface preparatory to the printing operation without subsequent calendering, and what are known as "satin-finished" and "mercerized" goods are well adapted for carrying out my improvement.

I claim as my invention—

1. A merchantable piece of cloth, having a glossy calendered surface, upon which are printed lines of a contrasting color from that of the cloth, and of a sufficient degree of fineness and nearness to each other, to produce the effect of changeable color when the surface of the cloth is viewed at different angles of light and shade, the deposited pigment or coloring-matter of the printed lines being retained above the glossy surface of the cloth, substantially as described.

2. A merchantable piece of cloth, having a glossy calendered surface, upon which are printed lines of a contrasting color from that of the cloth, and of a sufficient degree of fineness and nearness to each other, to produce the effect of changeable color when viewed at different angles of light and shade, the deposited pigment or coloring-matter of the printed lines being retained above the glossy surface, and also having a figured ornamentation printed upon the cloth, substantially as described.

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