

UNITED STATES PATENT OFFICE.

ROBERT JOHN CHADWICK MITCHELL, OF SWINDERBY, LINCOLN, ENGLAND.

PROCESS OF PRINTING ON FELT AND THE LIKE.

935,675.

Specification of Letters Patent.

Patented Oct. 5, 1909.

No Drawing.

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To all whom it may concern:

Be it known that I, ROBERT JOHN CHADWICK MITCHELL, a subject of the King of Great Britain and Ireland, residing at Morton Hall, Swinderby, Lincoln, England, have invented certain new and useful Improvements in Processes of Printing on Felt and the Like, of which the following is a specification.

10 This invention relates to the printing of felt and like fabrics having a close even surface.

Heretofore felt has been decoratively treated by printing designs thereon with engraved rollers or blocks and in anilin or other colors which are fixed by steaming. Such process of fixing involves a subsequent washing and finishing of the material, and the artistic results obtainable are consequently very limited and not such as to enable the felt, that has been thus decorated by the printing of colored patterns or designs thereon, to be applied to many services to which it is otherwise well adapted.

25 The object of this invention is to obviate the necessity for the aforesaid fixing of the colors by steaming and the subsequent washing and finishing operation, and to print designs and produce decorative or artistic effects upon the felt that have hitherto been unattainable on such material.

I have found that the best decorative effects in the color printing of felt and like fabrics, are obtainable only by printing upon such material when it is in the finished condition and with ordinary oil or self-fixing lithographic colors. I have further found that to attain the desired result the colors must not be allowed to penetrate beneath the surface of, or soak into, the fabric, as such penetration causes a spreading of the pattern or design which is thereby blurred or caused to present a blotchy or similarly impaired appearance.

45 My invention comprises the process of printing felt by lithographic printing means wherein the felt is first provided with a white or other ground color so as to form an effective base for the pattern at the parts on which the colors are printed.

50 In carrying the invention into effect in one convenient manner, I employ for the printing operation any ordinary or suitable lithographic printing machine having, for example, an impression cylinder arranged over a flat bed on which are placed stones

or their equivalent to be used for the designs. The required pattern or design to be printed on the felt is formed upon or transferred from a drawing to the said stones in any ordinary manner.

When printing on unwoven or ordinary felt, the latter is fed into the machine in such a way that the direction in which it naturally resists a stretching action coincides with the direction in which the printing machine tends to stretch it, so that a more accurate register of the colors is obtained than would otherwise be possible.

As a further means for insuring the aforesaid accurate register of the colors, the felt may be placed upon and passed through the printing machine with a sheet or backing of non-stretching material having a surface such as will prevent the felt from independent movement thereon during the printing operation. In some cases a non-stretching surface may be provided either at the back or front of the material; such surface may be formed by treating the felt with one or more suitable and known substances, such as a solution of nitro-cellulose, which will produce a non-stretching film or skin.

Prior to printing the felt may be dyed to any suitable color, and when printed can have its whole surface covered with a washable varnish; or the design alone may be varnished in any ordinary manner.

I first print the felt or like material, (on the parts where the decorative colors are to be subsequently printed), with a solid ground color, preferably white, mixed with suitable driers, varnish, oil or other materials so that the impression on the material dries quickly. Said ground color, which forms a bed or surface for the subsequent colors, may if desired be produced by more than one impression, each impression being applied by a lithographic or equivalent level printing slab or surface as aforesaid. When the ground color is sufficiently dry, the various colors forming the design are printed thereon, each color being of course allowed to dry before another is impressed. By this method the colors printed are given greater prominence and brightness, thus increasing the artistic effect.

The ground color aforesaid composed of a pigment color, driers, varnish, and oil applied by lithographic printing surfaces quickly dries upon and adheres in a thin film to the felt without penetration beneath

its surface and owing to its composition and method of application presents a surface capable of receiving lithographic printing colors also applied by lithographic surfaces.

5 Said ground color imparts to the design printed thereon a hand painted appearance and can be employed with advantage for clothes, carpets, rugs, shoe or slipper up-
pers, book binding purposes, belts, cushion
10 covers, table centers and covers, trimmings, door panels and for other purposes. Moreover, my process is more economical than that at present employed and enables me to
15 produce felts with colored designs thereon of a finer quality and of a more full or complete character than has heretofore been possible.

Having now described my invention what I claim as new and desire to secure by Letters Patent is;—

1. A process of printing felt or like fabric by means of lithographic printing consisting

in first providing the material with a ground color composed of a pigment color, driers, varnish and oil to form a base for the pattern at the parts on which the colors are
25 subsequently printed and then printing the pattern on said ground colors.

2. A process of printing felt or like fabrics by means of lithographic printing consisting
30 in first providing the material with a non-stretching backing and then with a ground color composed of a pigment color, driers, varnish and oil to form a base for the pattern at the parts on which the colors are
35 subsequently printed and then printing the pattern on said ground colors.

In testimony whereof, I affix my signature in presence of two witnesses.

ROBERT JOHN CHADWICK MITCHELL.

Witnesses:

CHARLES ALEXANDER McHERROW,
ARTHUR HUGHES.