

No. 694,860.

Patented Mar. 4, 1902.

L. HIRSCH.

PROCESS OF IMITATING BEIGE OR VIGOREUX BY PRINTING.

(Application filed May 20, 1898.)

(No Model.)

FIG. I.

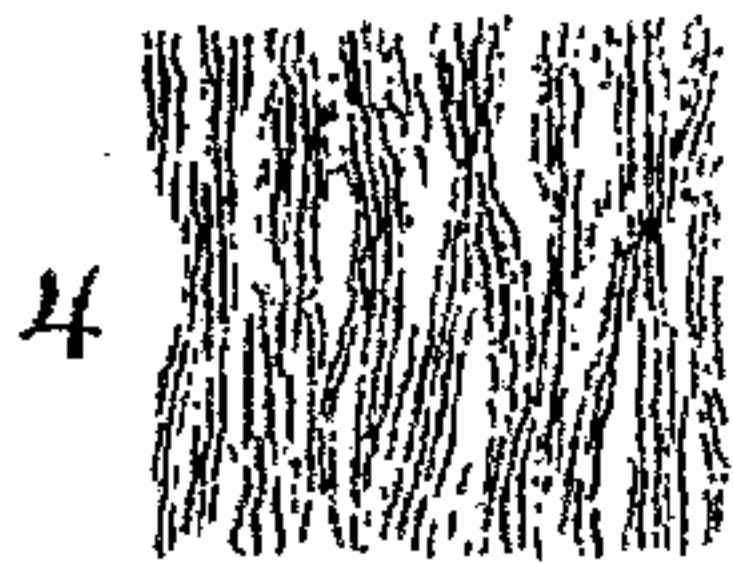


FIG. II.

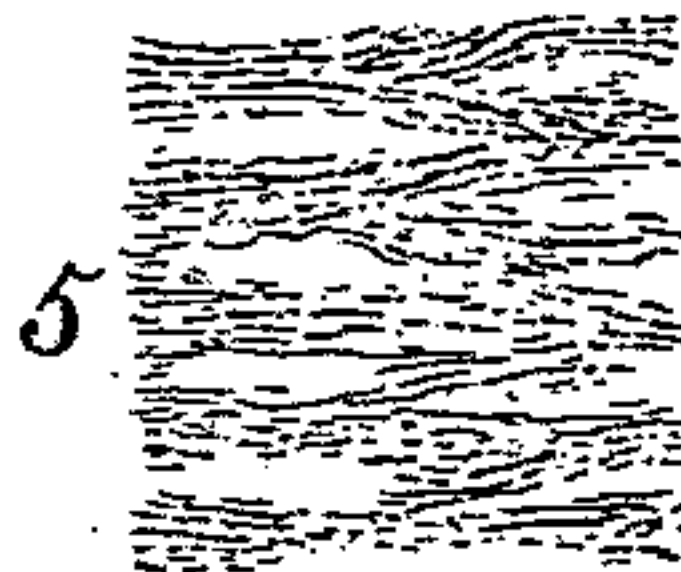


FIG. III.

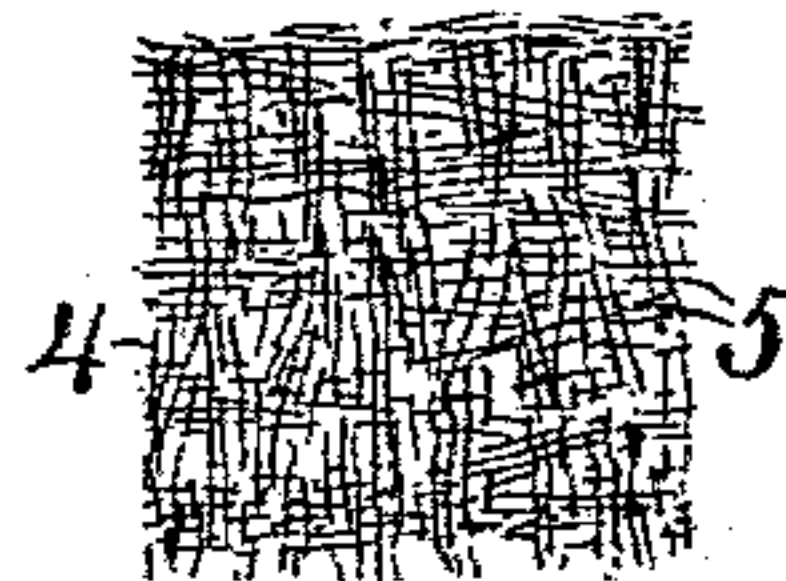


FIG. IV.

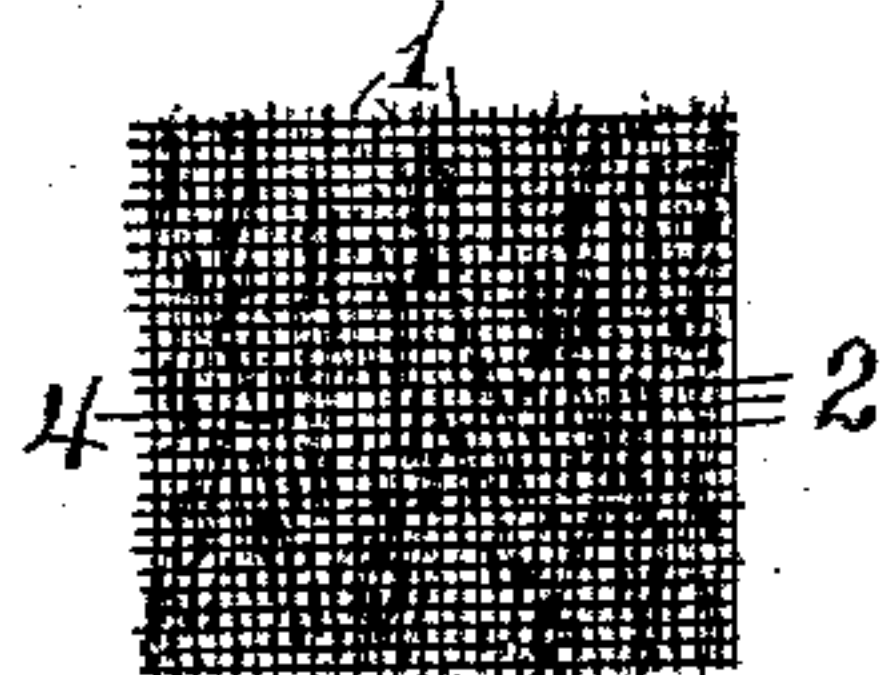


FIG. V.

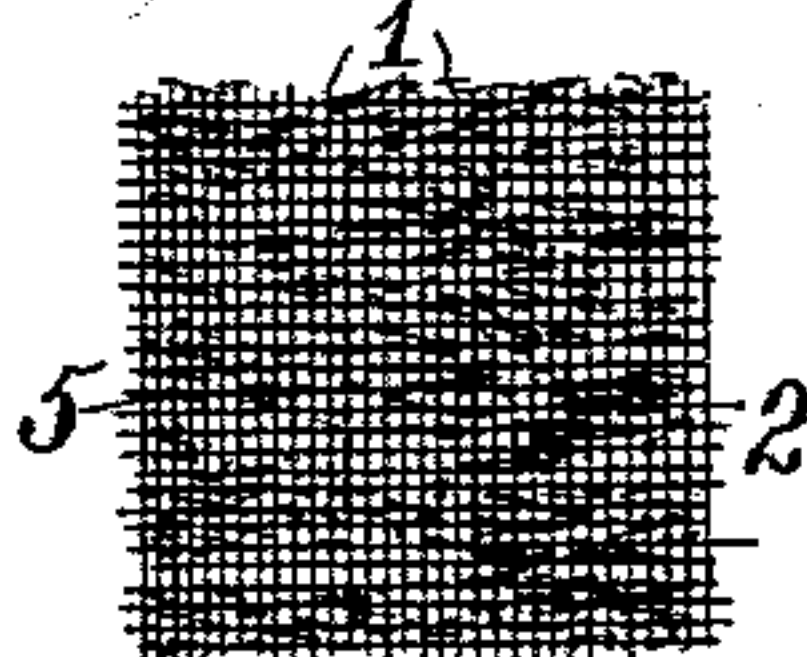


FIG. VI.



FIG. VII.

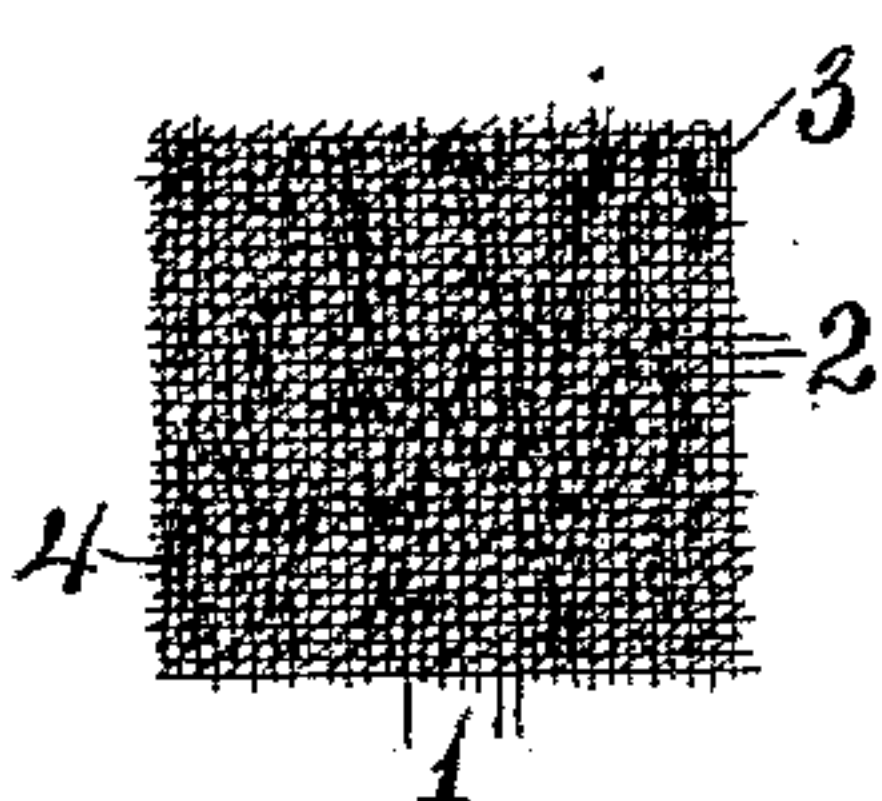


FIG. VIII.

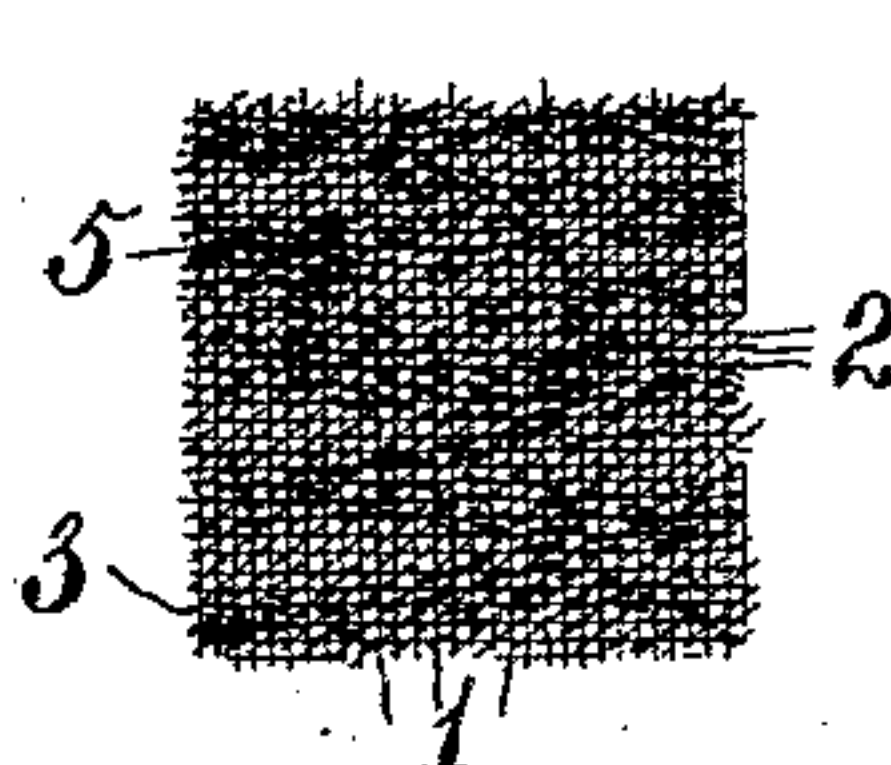


FIG. IX.

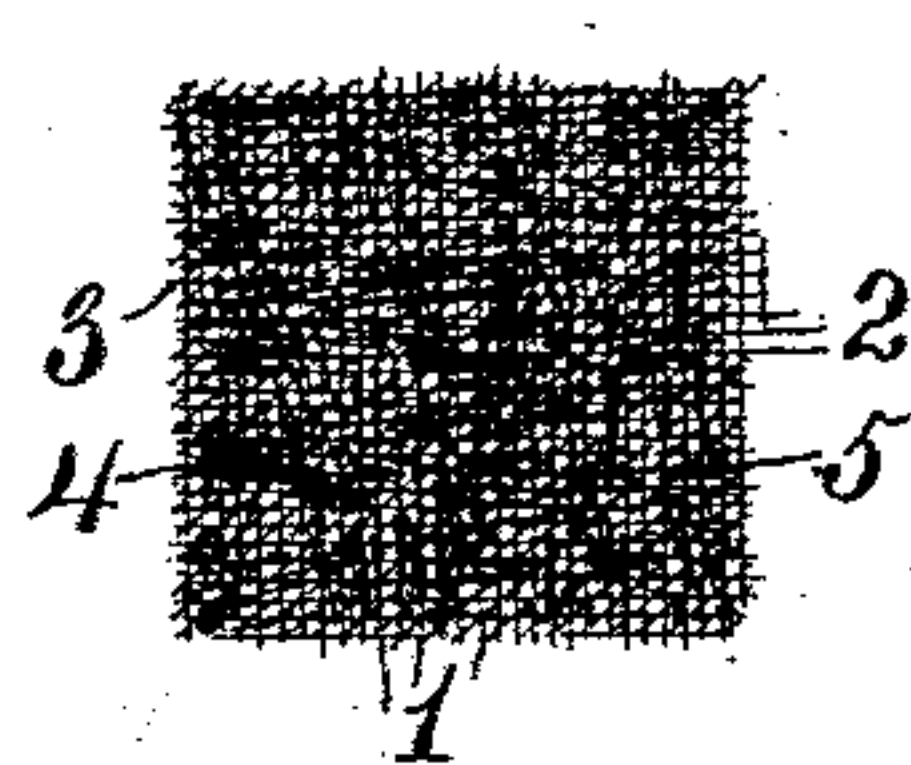


FIG. X.

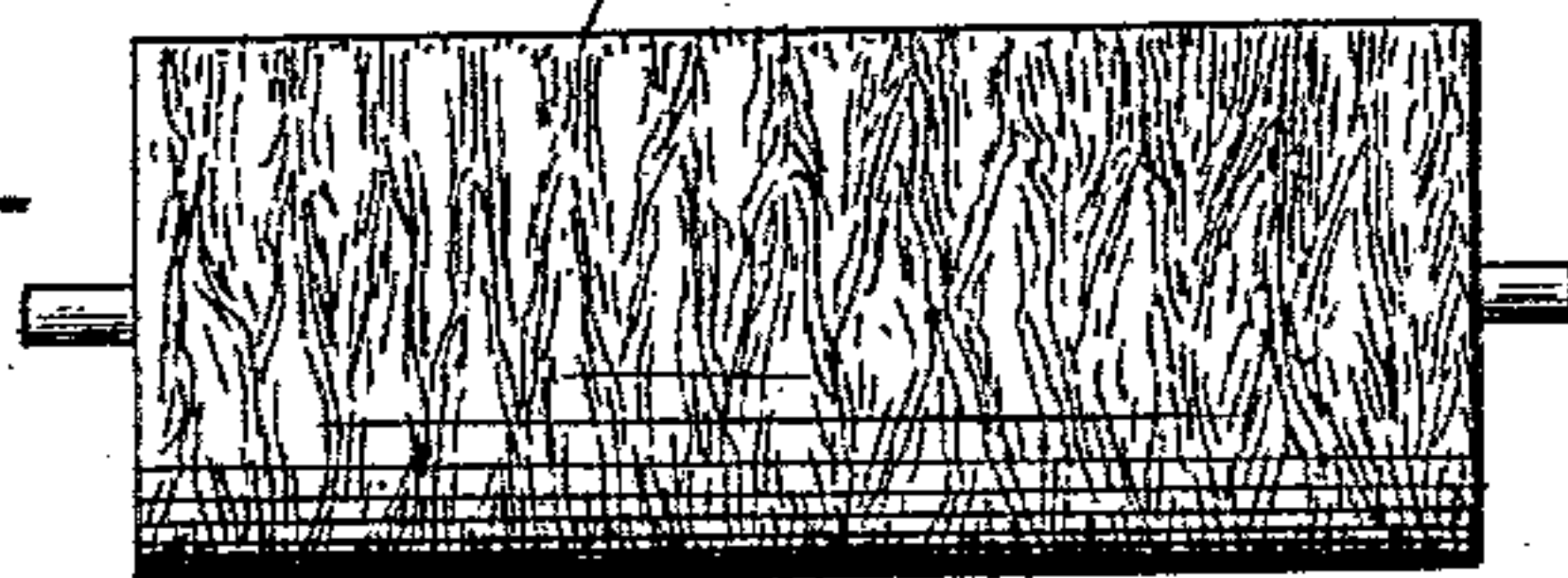
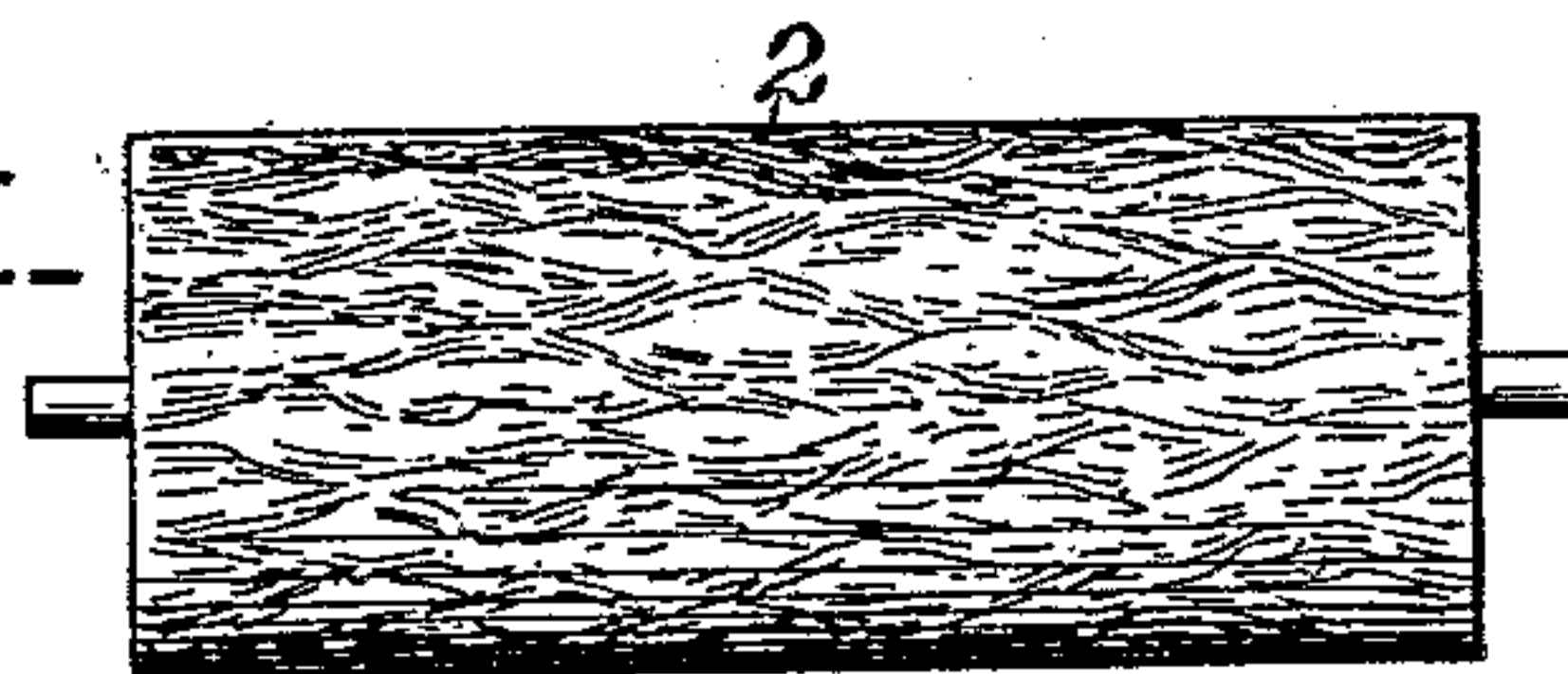


FIG. XI.



WITNESSES

W. E. Allen

Walter Allen

INVENTOR

Louis Hirsch

By Knight Bros
Attorneys.

UNITED STATES PATENT OFFICE.

LOUIS HIRSCH, OF GERA, GERMANY.

PROCESS OF IMITATING BEIGE OR VIGOREUX BY PRINTING.

SPECIFICATION forming part of Letters Patent No. 694,860, dated March 4, 1902.

Application filed May 20, 1898. Serial No. 681,243. (No specimens.)

To all whom it may concern:

Be it known that I, LOUIS HIRSCH, a subject of the Emperor of Germany, and a resident of Gera, in the principality of Reuss, Empire of Germany, have invented a certain new and useful Process for the Manufacture of Imitation Beige, Vigoreux, or Melange, of which the following is a specification.

The present invention relates to a process for producing an imitation of a woolen fabric commonly known as "beige," "vigoreux," or "melange," by which it is to be understood such a fabric of wool as is produced from yarns dyed while in the loose state, then combed, then printed as fleece, and then again combed, and thereafter stretched and spun. As a result of this stretching the printed designs on the yarn are distorted in such a manner as to form an irregular indistinct figure and bring out a peculiar effect in the fabric. Such fabric is well known by the name of beige, vigoreux, or melange. In the second combing the regular printed color-lines—that is to say, the stripes—become obliterated, and from this comes a variegated fleece by the further working of a similar yarn, and finally, by weaving the same into a fabric which is called "vigoreux." By changing the colors of threads used for the warp and the weft changes in the effect of the colors are obtained; but there are serious difficulties encountered by the weaver in the production of such fabrics, as is well known. For instance, it is especially hard for the weaver to carry on the loom all the shades of yarn which are necessary for the production of special designs, and the latter must accordingly be produced frequently in small quantity. Moreover, it often happens that the spinner does not have yarn of a certain color upon the frame; but the yarn must be colored especially for the desired design of the fabric to be produced; wherefore in such cases the weaver must apply to the spinner for the small quantity of specially-colored yarn desired; but the spinner can produce the desired shade of yarn economically only in large quantity. Hence it follows that the weaver has to incur considerable loss by being required to lay in an amount of warp-yarn which he cannot completely use up. This is easily understood

when one considers that a separate warp must always be prepared for each color. He is therefore frequently placed in the undesirable position of suffering great loss either through warp waste or an overproduction of a particular design of fabric from the warp on hand. All of these difficulties are completely overcome by the use of my new process, which will now be described.

In the first place the weaver weaves from undyed or unprinted yarn a certain raw fabric of suitable quality as a foundation. The fabric is then sent to the printer, who handles it according to the present new process—that is to say, he colors or roughly prints it and produces a fabric so good an imitation that it is admittedly difficult to distinguish whether the exhibited goods is vigoreux yarn or produced by the process forming the subject-matter of the present application.

My new process consists in taking either raw, bleached, or colored fabric and printing it with straight, wavy, irregular, clustered; or separated lines in imitation of the characteristic beige weft or the beige warp.

By my invention a fabric of a similar appearance and a like character is now produced in the following manner: The rough fabric is prepared for printing by being bleached, fixed, washed, and dried, according to requirement, and finally colored, if desired. After the fabric has been prepared in this manner it is printed by means of engraved rollers in such a manner that the combination of the printing of the rollers and the rough fabric produces an effect characteristic of beige, vigoreux, or melange. The fabric can be printed on one or both sides. After the printing comes the fixing process. For this purpose the printed fabric is wound up with bleached cotton cloths and placed in a closed chamber for a long time under continuous shaking for the action of the steam, about three-fourths atmosphere.

In the case of easily-running colors the fabric is stretched on snail-shaped reels provided with pins, and the steam is allowed to work upon it while in this condition. After this manipulation with steam, which is characterized by the use of steam, the fabric is washed, dried, and finished in the usual manner.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

5 Figure I represents my design for the warp effect. Fig. II represents my design for the weft effect. Fig. III represents my design for the combined warp and weft effect. Fig. IV represents my design for warp effect printed
10 on uncolored fabric. Fig. V represents my design for weft effect printed on uncolored fabric. Fig. VI represents my design for the combined warp and weft effect printed on uncolored fabric. Fig. VII represents my design for the warp effect printed on purple-
15 colored fabric, as indicated by the conventional diagonal lines used for such color. Fig. VIII represents my design for the weft effect printed on purple-colored fabric, as indicated by the conventional diagonal lines used for
20 such color. Fig. IX represents my design for the combined warp and weft effect printed on purple-colored fabric, as indicated by the conventional diagonal lines used for such color. Fig. X is a side elevation of a roll for printing the warp effect. Fig. XI is a side elevation of a roll for printing the weft effect.

1 represents warp-threads, 2 the weft-threads, and 3 conventional diagonal lines indicating the purple coloring of the ground of a fabric on which my design for beige, vigoureux, and melange effect is printed.

4 represents the warp effect, and 5 the weft effect.

35 6 is a printing-roll having the warp design thereon, and 7 is a printing-roll having the weft design thereon.

The perfection of imitations by this process is appreciated from the effect that an operator himself is scarcely able to distinguish between a sample of imitation and a sample of real beige or vigoureux.

45 If the imitation is to be a complete one, the process must be applied to both sides of the fabric and with the idea of being able to turn the goods on either side. It may also be added that it is not very easy to find the right pattern, especially for uncolored fabrics. It depends very largely upon the character of the fabric itself. A very important feature of
50 the manipulation is the time and manner of steaming the goods after the printing that fixes the colors. After the steaming the thickening is washed out in the customary
55 manner. After drying the fabric is finished according to the requirement, whether it is to be smooth, roughened, pressed, or hot-pressed.

60 From Figs. X and XI it is obvious that of the printing-rolls serving for the accomplishment of the process one roll, Fig. X, has the engraving circumferential and furnishes the design which represents the warp of the imitation, while the other roll, Fig. XI, has the
65 engraving in direction of its length, and thus represents the weft of the imitation. In sin-

gle-color designs both effects can obviously be produced by a single cylinder.

The process can be applied upon white goods as well as previously-colored goods. 70

In clear-shaded goods a previous coloring is not necessary and not employed; but in dark-shaded goods the production is simpler when the goods are previously colored, because in this manner the uniformity is more
75 readily obtained.

The pattern used in the process is engraved upon one or more copper or brass rollers. Through the medium of a feed-roller a coating of color is applied to the printing-roller 80 from a color-trough located beneath the printing-roller. By means of a long flexible knife the surplus color is scraped from the feed-roller and the color remains only in the depressions of the engraving of the printing-roller. The goods treated travel about a large roller provided with an elastic surface. The printing-roller is pressed by spring-pressure against the large roller, whereby the color contained in the depressions of the printing-roller is transferred to the goods. The goods
90 pass over hot plates for the purpose of drying the color impressed thereon.

Having thus described my invention, the following is what I claim as new therein and
95 desire to secure by Letters Patent:

1. As a new article of manufacture the herein-described imitation beige or like fabric, consisting of a body of suitable fabric marked with thread-lines imitating the warp and weft
100 characteristics of said fabric.

2. As a new article of manufacture the herein-described imitation beige or like fabric consisting of a body of rough fabric marked with thread-lines imitating the warp and weft
105 characteristics of the said fabric.

3. As a new article of manufacture the herein-described imitation beige or like fabric consisting of a body of rough bleached fabric marked with thread-lines imitating the warp
110 and weft characteristics of the said fabric.

4. As a new article of manufacture the herein-described imitation beige or like fabric consisting of a body of rough colored fabric marked with thread-lines imitating the warp
115 and weft characteristics of the said fabric.

5. The process for the manufacture of imitation beige, vigoureux, or melange or the like, which consists in printing on the surface of a woven fabric, thread effects running in
120 the direction of both the length and the width of the woven fabric, and in imitation respectively of the warp and weft characteristics of beige, vigoureux, or melange; substantially as herein described.

6. The process for the manufacture of imitation beige, vigoureux, melange or the like, which consists in marking a suitable fabric, by separate operations, with thread effects running longitudinally and transversely of
130 the fabric so as to imitate both the warp and weft characteristics of beige, vigoureux, or

melange, and then finishing the cloth in a suitable manner; substantially as and for the purpose set forth.

5 7. As a new article of manufacture, the herein-described imitation beige, vigoureux, or melange or the like fabric having a suitable body or ground of rough, or previously-colored fabric marked with longitudinal and transverse thread-lines in imitation of the
10 warp and weft characteristic of the said goods imitated; substantially as described.

8. The process for the manufacture of fabric which consists in printing on textile goods an imitation of the warp and weft threads characteristic of beige, vigoureux, or melange, 15 or the like; substantially as described.

The foregoing specification signed at Gera, Reuss, Germany, this 29th day of April, 1898.

LOUIS HIRSCH.

Witnesses:

A. BRÄUTIGAM,
H. MÜLLER.