No. 776,275. PATENTED NOV. 29, 1904.

D. VALENTINE & T. W. BENTLEY.

WOVEN FABRIC.

APPLICATION FILED OCT. 13, 1902.

NO MODEL.

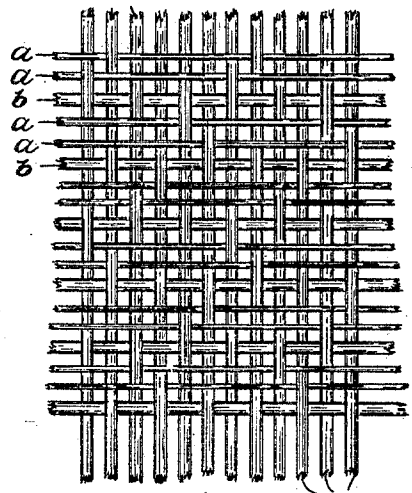


Fig. 1.

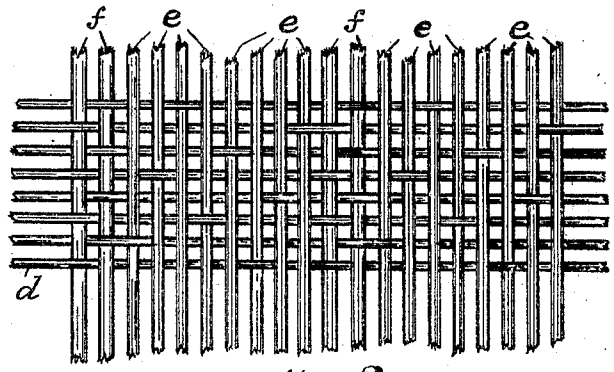


Fig. 2.

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No. 776,275. Patented November 29, 1904.

UNITED STATES PATENT OFFICE.

DAVID VALENTINE, OF ORANGE, AND THOMAS W. BENTLEY, OF NEWTON, NEW JERSEY.

WOVEN FABRIC.

SPECIFICATION forming part of Letters Patent No. 776,275, dated November 29, 1904.

Application filed October 13, 1902. Serial No. 127,197. (No specimens.)

To all whom it may concern:

Be it known that we, DAVID VALENTINE, residing in Orange, in the county of Essex, and THOMAS W. BENTLEY, residing at Newton, in the county of Sussex, State of New Jersey, citizens of the United States, have invented certain new and useful Improvements in Woven Fabrics; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention has for its object and it consists in an improved woven fabric having a peculiar crinkled or "crape" effect.

Our improved fabric may, perhaps, be best understood by a reference to the preferred method of making it. The essential features of this method are, first, the fact that the materials which go to make up the weave are different in that under a certain treatment the threads will be made to assume different lengths, those composed of one material being shorter than those composed of the other material; second, the weaving of the material so that the threads which finally remain the longer are held in the weave only at relatively widely spaced points, and, third, the subjecting of the thus woven goods to some suitable treatment which will, as aforesaid, change the relative lengths of the threads, with the result that in the thus treated woven product those threads which remain the longer assume a crimped or crinkled form.

We have found it most expedient to carry this method into practice as follows: We first prepare woven goods comprising cotton and silk threads. The cotton threads preferably run only one way of the goods, while the silk threads run both ways. Those of the silk threads which run the same way of the goods as the cotton threads are preferably in greater abundance than the cotton threads and are furthermore attached or secured in the goods in weaving at appreciably greater intervals than the cotton threads.

In the accompanying drawings, Figure 1 shows in magnified form our fabric with the cotton threads and those of the silk threads which run parallel therewith and are the more loosely interwoven comprising the weft, while Fig. 2 shows the fabric with the said threads forming the warp.

On referring to Fig. 1 the threads *a* of the horizontal or weft threads are silk, while the threads *b* are cotton. The vertical or warp threads *c* are all silk. It will be noticed that the cotton threads of the weft are interlocked in the goods much more closely or frequently than the silk threads. On referring to Fig. 2 the weft-threads *d* are all silk. The threads *e* of the vertical or warp threads are silk, while the threads *f* are cotton. In this instance it will also be noticed that the cotton threads of the warp are interlocked in the goods much more closely or frequently than the silk threads. The thus woven goods is then treated in a bath of caustic or hydrate soda, (20° to 28° Baumé.) It is well known that alkalies, such as sodium, exert an influence on cotton which results in a shrinkage thereof, while it exerts no such influence on silk. The effect, therefore, of thus treating the woven goods with the alkali is to cause a contraction or shrinkage of the cotton threads in the goods. Since the silk threads are not likewise affected, those running parallel with the cotton threads are caused to crinkle or crimp. The result is that the silk threads impart a wave-like effect to the surface of the goods. Not only this, but the cotton threads are completely hidden from view. The obscuring of the cotton threads is of course to some extent due to the fact that the silk threads predominate in number; but it is mostly due to the fact that by the contracting or shrinking of the cotton threads the silk threads are crinkled or crimped, and thus caused to cover the cotton threads.

We are aware that it has been heretofore proposed to intersperse cotton threads in woven goods in such manner that between the cotton threads the material is caused to pucker; but we regard this as quite a different thing from our present invention, if for no other

reason, because in the one instance the portion of the material which is affected by the contracting of the cotton threads is a regularly-woven body, while in the other instance—*i. e.*, in the case of our invention—any portion of the goods directly affected consists in one or more unattached or loose filaments.

If it is desired to dye the goods, this operation should precede that involved in subjecting the goods after weaving to the action of the alkali, as otherwise the alkali would act detrimentally to perfect results in the dyeing.

If desired, the finished fabric may be passed through calendering-rollers to, in effect, flatten out the material.

As the alkali would tend to do damage to the silk, its effect, so far as the silk is concerned, may be neutralized by adding to the alkali-bath one per cent. of glycerin or benzol, and when the shrinking is fully accomplished the action of the alkali may be entirely neutralized by first washing the goods in a bath of warm water and then in acidulated water.

We do not wish to be limited unduly by anything set forth in the foregoing, for

What we claim is—

As an article of manufacture, a woven fabric in which certain of the threads are of a material different from, and secured or attached in the fabric at greater intervals than, the remaining threads running the same way of the goods, and each of which has greater length between any two of its points of securing than the distance between the corresponding points in the fabric, said first-named threads being crinkled between said points substantially concealing the remaining threads running the same way of the goods, substantially as described.

In testimony that we, the said DAVID VALENTINE and THOMAS W. BENTLEY, claim the foregoing we have hereunto set our hands this 29th day of September and 1st day of October, respectively, 1902.

DAVID VALENTINE.
THOMAS W. BENTLEY.

Witnesses as to David Valentine:
J. E. BIRSS,
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