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WOVEN FABRIC.

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926,310.

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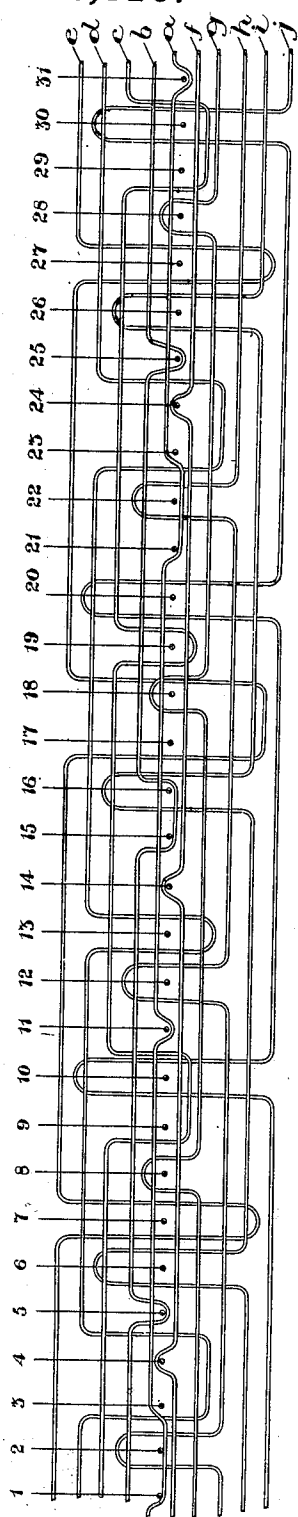


Fig. 1.

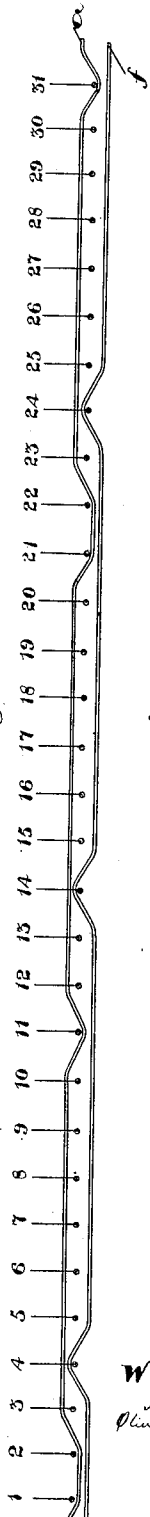
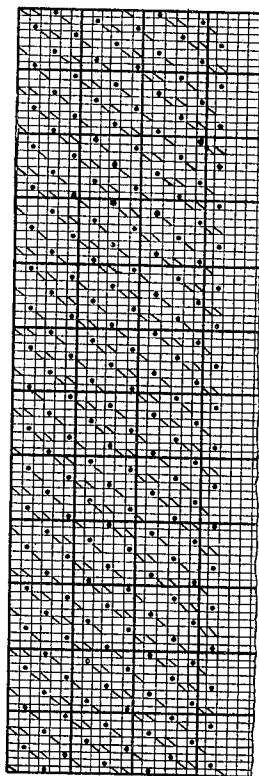


Fig. 2.

Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

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WOVEN FABRIC.

No. 926,310.

Specification of Letters Patent.

Patented June 29, 1909.

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To all whom it may concern:

Be it known that we, JOSEPH PETER ZEPP and ALBERT E. COULTHARD, of the city of Peterborough, in the county of Peterborough and Province of Ontario, Canada, have invented certain new and useful Improvements in Woven Fabrics; and we hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to a woven fabric having two separate sets of warp threads with one set constantly overlying the other set, and a set of weft threads woven through the warp threads so that each set of warp threads can be used to produce a face for the woven fabric without one set of warp threads being visible through the other set of warp threads except when the position of the warp threads is reversed to form the pattern in the fabric.

In the production of the woven fabric according to this invention one set of warp threads may be of one color, quality, or material, and the other set of warp threads may be of a different color, quality, or material, with the two sets of warp threads kept on their respective sides of the woven fabric without the warp threads of one set showing through the warp threads of the other set except when their positions are intentionally altered by the action of the loom to produce the figure or pattern in the weave, as hereinafter set forth and pointed out in the claims.

For an understanding of the invention reference is to be had to the following description and to the accompanying drawings in which:—

Figure 1, is a longitudinal section showing in a conventional manner the disposition of several warp and weft threads. Fig. 2, is a similar view to Fig. 1, showing the arrangement of a pair of warp threads, that is a face warp thread and its corresponding back warp thread and the weft threads. Fig. 3, is a plan view of a pattern paper from which the jacquard cards are prepared the dots and dashes on the pattern papers indicating the manner in which the jacquard cards are to be punched.

Like characters of reference refer to like parts throughout the specification and drawings.

The woven fabric as shown in Fig. 1, consists of two sets of warp threads and one set of weft threads. One set of warp threads overlies the other set of warp threads and in

weaving the fabric, each set of warp threads is continually maintained on its respective side of the fabric as the warp threads pass over and under the weft threads so that each set of warp threads will form its respective face of the fabric without the other set of warp threads appearing therein, except when the normal position of the warp threads is altered to form the pattern. For convenience of description the one set of warp threads which may be of one color, quality, or material, are lettered by the letters *a*, *b*, *c*, *d*, and *e*. The other set of warp threads which may be of any other color, quality, or material, are lettered *f*, *g*, *h*, *i*, and *j*. The weft threads are numbered from 1 to 31 inclusive. In weaving the fabric the warp thread *a* passes under the weft threads 1 and 2, over 3, 4, 5, 6, 7, 8, 9, 10, under 11, over 12, 13, 14, 15, 16, 17, 18, 19, 20, under 21, 22, over 23, 24, 25, 26, 27, 28, 29, 30, under 31. The warp thread *b* passes over 1, 2, 3, 4, under 5, over 6, 7, 8, 9, 10, 11, 12, 13, 14, under 15, 16, over 17, 18, 19, 20, 21, 22, 23, 24, under 25, over 26, 27, 28, 29, 30, and 31. The warp thread *c* passes over 1, 2, 3, 4, 5, 6, 7, 8, under 9, 10, over 11, 12, 13, 14, 15, 16, 17, 18, under 19, over 20, 21, 22, 23, 24, 25, 26, 27, 28, under 29, 30, over 31. The warp thread *d* passes over 1 and 2, under 3 and 4, over 5, 6, 7, 8, 9, 10, 11, 12, under 13, over 14, 15, 16, 17, 18, 19, 20, 21, and 22, under 23, and 24, over 25, 26, 27, 28, 29, 30, and 31. The warp thread *e* passes over 1, 2, 3, 4, 5, 6, under 7, over 8, 9, 10, 11, 12, 13, 14, 15, and 16, under 17 and 18, over 19, 20, 21, 22, 23, 24, 25, and 26, under 27, over 28, 29, 30, and 31. The warp thread *f* lies below the warp thread *a* and passes under 1, 2, 3, over 4, under 5, 6, 7, 8, 9, 10, 11, 12, 13, over 14, under 15, 16, 17, 18, 19, 20, 21, 22, 23, over 24, under 25, 26, 27, 28, 29, 30, and 31. The warp thread *g* lies below the warp thread *b* and passes under 1, 2, 3, 4, 5, 6, 7, over 8, under 9, 10, 11, 12, 13, 14, 15, 16, and 17, over 18, under 19, 20, 21, 22, 23, 24, 25, 26, 27, over 28, under 29, 30, and 31. The warp thread *h* lies below the warp thread *c* and passes under 1, over 2, under 3, 4, 5, 6, 7, 8, 9, 10, 11, over 12, under 13, 14, 15, 16, 17, 18, 19, 20, 21, over 22, under 23, 24, 25, 26, 27, 28, 29, 30, and 31. The warp thread *i* lies below the warp thread *d* and passes under 1, 2, 3, 4, 5, over 6, under 7, 8, 9, 10, 11, 12, 13, 14, 15, over 16, under 17, 18, 19, 20, 21, 22, 23, 24, and 25, over 26, under 27,

28, 29, 30, and 31. The warp thread *j* lies below the warp thread *e* and passes under 1, 2, 3, 4, 5, 6, 7, 8, 9, over 10, under 11, 12, 13, 14, 15, 16, 17, 18, 19, over 20, under 21, 22, 23, 24, 25, 26, 27, 28, 29, over 30, and under 31.

By reference to the drawings it will be seen that where the warp thread *a* crosses under a weft thread, that the warp thread *f* flows under it, and that when the warp thread *f* crosses over a weft thread, the warp thread *a* floats over the crossing. The same remarks are also applicable to the warp threads *b* and *g*, *c* and *h*, *d* and *i*, and *e* and *j*.
 Having thus fully described our invention what we claim as new and desire to secure by Letters Patent is:—

1. A woven fabric comprising two separate sets of warp threads with one set of warp threads continually overlying the other set of warp threads, and a single set of weft threads woven through the fabric

to bind the warp threads together and maintain the sets of warp threads continually in juxtaposition so that the warp threads of one set will not show through the warp threads of the other set.

2. A woven fabric comprising two separate grounds, each formed of a single set of warp threads, and a single set of weft threads contained between and alternately engaging the warp threads of the two grounds, the warp threads of each ground overlying the tying weft threads and several adjoining weft threads where they pass through the warp threads of the other ground.

Peterborough, November 22nd, 1907.

JOSEPH P. ZEPP.
 A. E. COULTHARD.

Signed in the presence of—

W. S. DAVIDSON,
 S. MEAD.