Nov. 21, 1961 W. V. McCRARY 3,009,489

REVERSIBLE BLANKET

Filed Feb. 18, 1957

Fig. 1

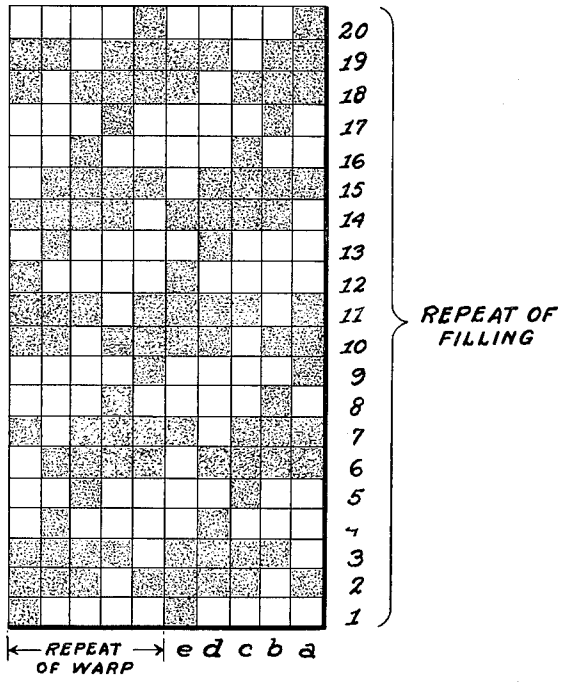


Fig. 2

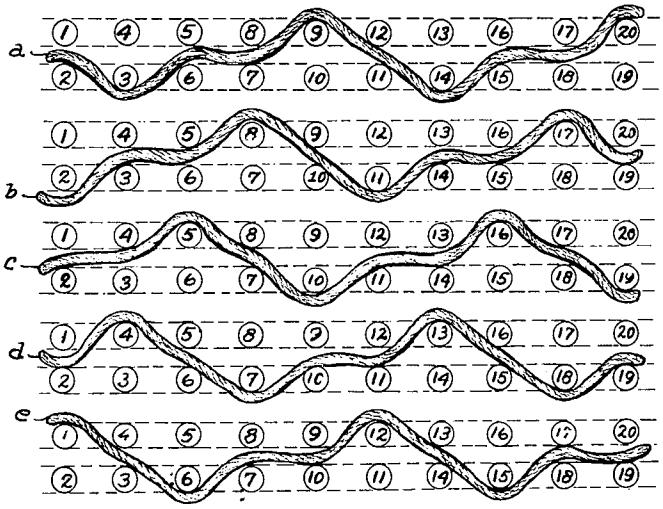
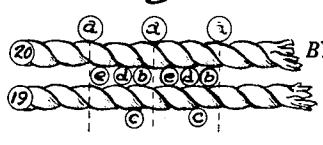


Fig. 3



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3,009,489
REVERSIBLE BLANKET

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This invention relates to woven blankets, and more particularly to an improved weave construction by which reversible faces (i.e., faces of different color) may be formed effectively in a lightweight blanket structure.

The improved weave construction of the present invention is characterized by a double weave in which a relatively high warp density is employed, but in which a majority of the warp is arranged in floating relation at each filling pick so that the pick count can be reduced substantially without encountering subsequent difficulty in preventing different colored fillings at the opposite faces of the weave from "bleeding through" upon napping.

More specifically, the double weave of the present invention is arranged with each warp end running alternately under a group of four top face and one bottom face filling picks and over a group of one top face and four bottom face filling picks, and with any five adjacent warp ends disposed 1-up in relation to any top face filling pick, 1-down in relation to any bottom face filling pick, and three ends floating in relation to all filling picks.

These and other features of the present invention are described in further detail below in connection with the accompanying drawings, in which:

FIG. 1 is a pattern chart for the improved double weave construction of the present invention;

FIG. 2 is a fragmentary diagram illustrating the relative interlacing of any five adjacent warp ends in a blanket cloth incorporating the weave construction of the present invention; and

FIG. 3 is a further fragmentary diagram illustrating the warp end arrangement fillingwise at a pair of top and bottom face filling picks.

In the pattern chart of FIG. 1 the warp ends are shown repeating in groups of five adjacent ends designated by the reference characters *a*, *b*, *c*, *d* and *e* (the warp end being "up" at the marked squares), and the repeat of the filling is shown to include 20 picks indicated by the reference numerals 1 to 20, inclusive. As it is a reversible blanket that is being formed by the double weave construction of the present invention, the top and bottom filling picks are formed with different colored yarn and the filling pick sequence must be arranged so that the shooting and return picks run in pairs of the same color. Accordingly, the filling pick **1** in FIG. 1 and throughout the remainder of the drawings, is illustrated as being the return pick of the top face filling color, while filling picks **2** and **3** are in turn the shooting and return bottom face picks of the other color, filling picks **4** and **5** are the shooting and return top face filling picks of the first color, and so on. On this basis, picks **1, 4, 5, 8, 9, 12, 13, 16, 17** and **20** are top face filling picks, and picks **2, 3, 6, 7 10, 11, 14, 15, 18** and **19** are bottom face filling picks.

As previously mentioned, the double weave construction of the present invention is characterized first by an arrangement of the warp in a 4—1—1—4 pattern; that is, with each warp end *a*, *b*, *c*, *d* and *e* running alternately under a group of four top face and one bottom face filling picks and over a group of one top face and four bottom face filling picks. This warp arrangement is illustrated in FIG. 2 of the drawings in which the

running arrangement of each warp end *a*, *b*, *c*, *d* and *e* is separately represented in schematic fashion based on the pattern chart of FIG. 1. FIG. 3 further illustrates the fillingwise arrangement of the repeating groups of adjacent warp ends *a*, *b*, *c*, *d* and *e* to indicate the nature of the resulting weave structure at a pair of bottom and top face filling picks **19** and **20**.

It has also been noted previously that while the above noted warp arrangement involves a relatively high warp density, a majority of the warp is maintained in floating relation at each filling pick, and this feature of the double weave construction provided by the present invention is demonstrated in FIG. 3 in which it will be seen that any five adjacent warp ends are disposed 1-up in relation to any top face filling pick (such as **20**), 1-down in relation to any bottom face filling pick (such as **19**), and three ends floating in relation to all filling picks (such as **19** and **20**), so that the floating warp exceeds the tying-down warp by 50%.

As a result of this arrangement, the warp density in the weave construction of the present invention may be increased in the order of 25%, while still avoiding the boardiness that usually results from increased warp density, by maintaining a majority of the warp floating in the above noted manner. A further result of this preponderant floating arrangement in the warp is to allow a substantial reduction in the filling pick count so as to obtain a lightweight weave construction while at the same time disposing the filling at the opposite faces of the double weave for effective napping without difficulty with bleeding through of the different colored top and bottom face fillings to the opposite faces.

As a representative example, a reversible blanket may be formed advantageously according to the present invention with warp consisting of cotton yarn having a count of 20's/1 and using a 2/22.5 reed to provide an initial warp density of 45 ends per inch (that would become approximately 46 warp ends per inch off the loom, and 50 ends per inch in the finished blanket), and was a blended rayon filling having a count of 2.85's used at a pick count of 33 picks per inch. The resulting blanket cloth forms a 3 lb. blanket, which indicates the lightweight construction possible according to the present invention, although the bulk and napping qualities of this lightweight blanket cloth are exceptional so as to provide a warm blanket structure despite the lightness of the weave construction and the substantially reduced filling pick count.

The present invention has been described in detail above for purposes of illustration only and is not intended to be limited by this description or otherwise except as defined in the appended claims.

I claim:

1. A woven blanket of double woven construction with the filling napped at both faces of the double weave, said double woven construction having each warp end running alternately under a group of four top face and one bottom face filling picks and over a group of one top face and four bottom face filling picks, having any five adjacent warp ends arranged 1-up in relation to any top face filling pick, 1-down in relation to any bottom face filling pick, and three ends floating in relation to all filling picks, the three floating ends in each group of five adjacent warp ends providing a barrier for separation of the top face filling picks from the bottom face filling picks, each of the top face filling picks being tied-in below a different warp end in each group of five warp ends and each of the bottom face filling picks being tied-in above a different warp end in each group of five warp ends.

2. A woven blanket of lightweight double woven con-

struction with the filling napped at both faces of the double weave, said double woven construction having a relatively high warp density and a relatively high warp bulk but having each warp end running alternately under a group of four top face and one bottom face filling picks and over a group of one top face and four bottom face fillings picks, and having any five adjacent warp ends arranged 1-up in relation to any top face filling pick, 1-down in relation to any bottom face filling pick, and three ends floating in relation to all filling picks, each of the top face filling picks being tied-in below a different warp end in each group of five warp ends and each of the bottom face filling picks being tied-in above a different warp end in each group of five warp ends, whereby the three floating ends in each group of five adjacent warp ends providing a barrier for separation of the top face filling picks from the bottom face filling picks and boardiness as a result of said relatively high warp density is avoided while allowing reduction of the filling pick count to obtain a lightweight weave construction in which the filling may be napped effectively.

3. A woven blanket of double woven construction in which the filling at the top and bottom faces of the double weave is of different colors and both faces are napped, said double woven construction having a relatively high warp density and a relatively high warp bulk, having each warp end running alternately under a group of four top face and one bottom face filling picks and over a group of one top face and four bottom face filling picks, and having any five adjacent warp ends arranged 1-up in relation to any top face filling pick, 1-down in relation to any bottom face filling pick, and three ends floating in relation to all filling picks, each of the top face filling picks being tied-in below a different warp end in each group of five warp ends and each of the bottom face filling picks being tied-in above one warp end in each group of five warp ends, whereby the three floating ends in each group of five adjacent warp ends providing a barrier for separation of the top face filling picks from the bottom face filling picks and boardiness as a result of said relatively high warp density is avoided while allowing reduction of the filling pick count to obtain a lightweight weave construction in which the filling may be napped effectively without either of the different colored fillings bleeding through at the opposite face.

4. A woven blanket of double woven construction with the filling napped at both faces of the double weave and with the warp arranged to provide a barrier to separate the top face filling picks from the back face filling picks and thereby substantially reduce the bleeding through of opposite face filling picks during napping, said double woven construction comprising a repeating pattern of five warp ends woven with five pairs of top and bottom face filling picks, a first warp end in each said pattern running between the top and bottom face filling picks of a first pair of filling picks, under both picks of a second pair of filling picks, between the top and bottom face filling picks of both a third and a fourth pair of picks, and over both picks of a fifth pair of picks, a second warp end in each said pattern running both picks of the first pair of filling picks, between the top and bottom face filling picks of both the second and third pair of picks, over both picks of the fourth pair of picks and between the top and bottom face filling picks of the fifth pair of filling picks, a third warp end in each said pattern running between the top and bottom face filling picks of both the first and second pair of picks, over both picks of the third pair of picks, between the top and bottom face filling picks of the fourth pair of picks, and under both picks of the fifth pair of filling picks, a fourth warp end in each said pattern running between the top and bottom face filling picks of the first pair of filling picks, over

both picks of the second pair of filling picks, between the top and bottom face filling picks of the third pair of picks, under both picks of the fourth pair of filling picks and between the top and bottom face filling picks of the fifth pair of filling picks, and a fifth warp end in each said pattern running over both picks of the first pair of filling picks, between the top and bottom face filling picks of the second pair of filling picks, under both picks of the third pair of filling picks, and between the top and bottom face filling picks of both the fourth and fifth pair of picks.

5. A woven blanket of double woven construction with the filling at opposite faces being of different colors napped at both faces of the double weave and with the warp arranged to provide a barrier to separate the top face filling picks from the back face filling picks and thereby substantially reduce the bleeding through of opposite face filling picks during napping without increasing the pick count, said double woven construction comprising a repeating pattern of five warp ends woven with five pairs of top and bottom face filling picks, the filling picks on each face being woven with a shooting pick and a returning pick adjacent each other and staggered with respect to the shooting and returning picks on the opposite face so that the opposite faces can be woven with yarns of different colors, a first warp end in each said pattern running between the top and bottom face filling picks of a first pair of filling picks, under both picks of a second pair of filling picks, between the top and bottom face filling picks of both a third and a fourth pair of picks, and over both picks of a fifth pair of picks, a second warp end in each said pattern running under both picks of the first pair of filling picks, between the top and bottom face filling picks of both the second and third pair of picks, over both picks of the fourth pair of picks and between the top and bottom face filling picks of the fifth pair of filling picks, a third warp end in each said pattern running between the top and bottom face filling picks of both the first and second pair of picks, over both picks of the third pair of picks, between the top and bottom face filling picks of the fourth pair of picks, and under both picks of the fifth pair of filling picks, a fourth warp end in each said pattern running between the top and bottom face filling picks of the first pair of filling picks, over both picks of the second pair of filling picks, between the top and bottom face filling picks of the third pair of picks, under both picks of the fourth pair of filling picks, and between the top and bottom face filling picks of the fifth pair of filling picks, and a fifth warp end in each said pattern running over both picks of the first pair of filling picks, between the top and bottom face filling picks of the second pair of filling picks, under both picks of the third pair of filling picks, and between the top and bottom face filling picks of both the fourth and fifth pair of picks.

6. A woven blanket of double woven construction with the filling napped at both faces of the double weave and with the warp arranged to provide a barrier to separate the top face filling picks from the back face filling picks and thereby substantially reduce the bleeding through of opposite face filling picks during napping, said double woven construction comprising a repeating pattern of five warp ends woven with five pairs of top and bottom face filling picks, said five warp ends in each pattern being woven in sequence with the first warp end in the sequence running between the picks of the first pair of picks, under both picks of the second pair of picks, between the picks of both the third and the fourth pair of picks, and over both picks of the fifth pair of picks, the second consecutive warp end running under both picks of the first pair of picks, between the picks of both the second and the third pair of picks, over both picks of the fourth pair of picks and between the picks of the fifth pair of picks, the third consecutive warp end running between the picks

in both the first and the second pair of picks, over both picks of the third pair of picks, between the picks of the fourth pair of picks, and under both picks of the fifth pair of picks, the fourth consecutive warp end running between the picks in the first pair of picks, over both picks of the second pair of picks, between the picks of the third pair of picks, under both picks of the fourth pair of picks, and between the picks of the fifth pair of picks, and the fifth consecutive warp end running over both picks of the first pair of picks, between the picks of the second pair of picks, under both picks of the third pair of picks, and between the picks of both the fourth and fifth pair of picks.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,009,489 November 21, 1961

William Vernon McCrary

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 2, line 40, for "was" read -- with --; column 3, line 62, after "running" insert -- under --.

Signed and sealed this 5th day of June 1962.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

DAVID L. LADD
Commissioner of Patents