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METHOD OF PRODUCING DOUBLE FACED PILE FABRICS
AND LOOM USED IN THE PRODUCTION THEREOF
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Fig. 1

Fig. 2

Fig. 3

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This invention relates to double faced pile fabrics and more particularly to a novel method of weaving such fabrics.

One of the objects of the invention is to provide a method of weaving double faced pile fabrics, two pieces at a time, on a double shuttle plush loom at a single weaving whereby the effort required in the production of such fabrics is greatly reduced in comparison with the methods heretofore known.

Another object of the invention is to supply a process for the weaving of such fabrics in such manner that the pile threads appear on both sides in pulled-out condition on each fabric as the two fabrics leave the loom.

With the foregoing objects outlined, and with other objects in view which will appear as the description proceeds, the invention consists in the novel steps hereinafter described in connection with the accompanying drawings, and more particularly pointed out in the appended claims.

In the drawing:

Fig. 1 is a diagrammatical vertical sectional view of a portion of a double shuttle plush loom, and illustrating two double faced pile fabrics being produced simultaneously.

Fig. 2 is a diagrammatic vertical sectional view of the fabric shown in Fig. 1, taken on a different plane.

Fig. 3 is an enlarged longitudinal sectional view of a portion of a fabric of the type produced by my method.

Referring to the drawing, 4 designates a top shuttle and 5 a bottom shuttle of a plush loom, which, in accordance with the present invention, is provided with top shedding wires 8 and bottom shedding wires 7 which extend substantially parallel with the upper warp threads 9 and bottom warp threads 8. Only one upper and one lower shedding wire is illustrated but it will be understood there is a series of each and in each series the wires are arranged side by side. Each shedding wire is anchored against longitudinal movement at one end in back of the heddles (not shown) by any suitable means (not shown) and the opposite ends diverge, as indicated at 10 and 11. The diverging ends abut against cross rods 12, 13 supported by stationary upper and lower cross bars 14 and 15 of the loom. 16 and 17 designate, respectively, conventional upper and lower pin rolls, and 18 designates a conventional reciprocating knife, serving to sever the pile threads 19 which are woven into the fabric 20 (Fig. 3). 21, 22, 23, 24, 25, and 26 designate the filling threads which are as usual, arranged transversely of the fabric. In accordance with the invention, certain of the filling threads 23 are caused to float on the back of the cloth and not weave in except with the pile threads 19, and these filling threads 23 are automatically thrown out on the back of the cloth by means of the shedding wires, as the cloth moves toward the pin rolls.

It will be noted from Fig. 1 that the pile threads 19 are interlaced around the filling threads 21—26 in the six pick W weave formation with pick No. 22 of each repeat going over the shedding wires 8 in the weaving of the upper web or cloth. This is caused by all top backing warp threads and the top shedding wires being in their down position or in the middle between the top and bottom shuttle sheds on the No. 23 pick while the pile threads to be thrown out on this pick, remain up forming a shed for the shuttle.

Next, pile threads 19 drop to the bottom piece or web and interface with the bottom piece on picks No 24 and No. 25, then on pick No. 26, which is shown below the shedding wires 7. This is caused by all bottom backing warp threads and the bottom shedding wires going to the up position or the center between the top and bottom shuttle sheds, while the pile threads to be thrown out on this pick remain down, forming a shed for the shuttle. This procedure is continued by a cam motion on the loom which causes every repeat of the weave to throw out all the pile tufts on the third pick on the top piece or web, and the sixth pick on the bottom piece, or, in other words, all the pile tufts on either web every sixth pick in every other dent or every other pick end.

Fig. 1 illustrates the procedure followed by pile threads in every other dent in the reed. Fig. 2, on the other hand, shows a course followed by the pile threads in all the even reed dents, by the same procedure.

This will provide that all shedding wires raise and lower on the same picks, namely, No. 23 pick on the top piece and 26 pick on the bottom piece. This will allow picks Nos. 21, 22, 24, and 25 for the other interlacing of the warp threads, and then locking in of the pile tufts. This weave produces fifty percent of the pile on the back and fifty percent of the pile on the face of both top and bottom fabrics, and any variations of this can be produced by different drawing in of the threads or harness arrangements while still using the same general shedding wire procedure.

For such weaving in accordance with either procedure, the fabrics in passing out of the loom...
onto the pin rolls are severed from one another as the knife 18 cuts the warp threads which join them, and as each fabric moves toward the pin roll which engages it, the shedding wires function to pull out the filling threads 23 of the upper piece and the threads 26 of the lower piece, with the result that tuft ends 27 will be pulled out from the back of the upper piece and tuft ends 28 from the back of the lower piece. As the result, each tuft will be interlaced with a plurality of weft filling threads and will have its ends arranged at opposite sides of the woven piece, as indicated in Fig. 3.

While I have disclosed preferred methods of weaving double faced pile fabrics by the use of a double shuttle plush loom, it will be apparent to those skilled in the art, that changes may be made in the details referred to, without departing from the spirit of the invention as expressed in the following claims:

What I claim and desire to secure by Letters Patent is:

1. In the simultaneous weaving of a plurality of double faced pile fabrics, the improvement which consists in withdrawing ends of severed pile tufts out of the back of the fabrics by pulling weft filling threads engaging said tufts from the backs of the fabrics in directions at angles to the backs of the fabrics, as the fabrics travel lengthwise.

2. In the simultaneous weaving of a plurality of double faced pile fabrics, contacting spaced weft filling threads with shedding wires above and below the double fabric, interlacing pile warps with said filling threads, dividing the resulting fabric into two pieces by severing pile warp threads between them, and utilizing said shedding wires to withdraw said spaced weft filling threads from the backs of the two pieces and to thereby pull ends of the severed pile warps from the backs of the two pieces as the pieces leave the shedding wires.

3. In the simultaneous weaving of a plurality of double faced pile fabrics, contacting spaced weft filling threads with shedding wires above and below the double fabric, interlacing pile warps with said filling threads, dividing the resulting fabric into two pieces by severing the pile warp threads between them, and utilizing diverging portions of the shedding wires to withdraw said spaced weft filling threads from the backs of the two pieces and to thereby pull ends of the severed pile warp from the backs of the two pieces as the pieces leave the shedding wires.

4. In the simultaneous weaving of a plurality of double faced pile fabrics, contacting spaced weft filling threads with shedding wires above and below the double fabric to maintain them out of contact therewith, interlacing pile warps with the weft threads of the fabric and with said spaced weft filling threads in such manner that each pile thread on each repeat passes over one weft thread, under another, and about one of the spaced weft filling threads, afterwards dividing the resulting fabric into two pieces by severing pile warp threads between them, and utilizing diverging portions of the shedding wires to withdraw said spaced weft filling threads from the back of the two pieces and to thereby pull ends of the severed pile warps from the back of the two pieces, as the pieces leave the shedding wires.

5. In a double shuttle plush loom, upper and lower shedding wires having diverging end portions arranged posterior to the shuttles of the loom, means for maintaining said ends of the shedding wires in diverging relation to one another, and a pile severing knife positioned adjacent to the end portions of said wires and positioned between the wires.

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