No. 690,912. Patented Jan. 7, 1902.

A. F. McCOLLUM.

WOVEN PILE FABRIC.

(Application filed Dec. 5, 1899. Renewed July 26, 1901.)

(No Model.)

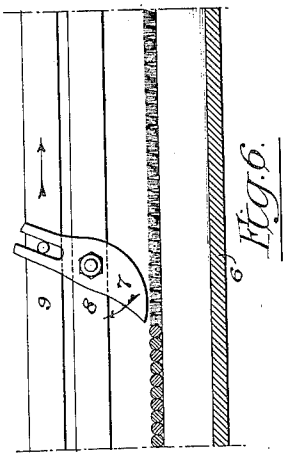


Fig. 6.

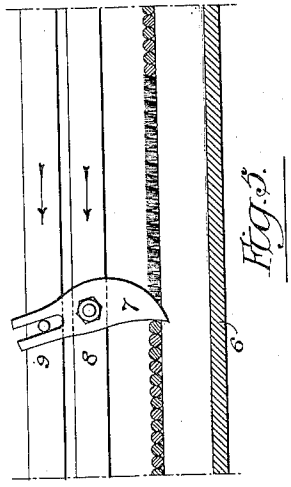


Fig. 3.

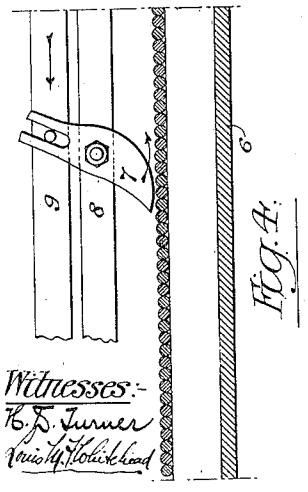


Fig. 4.

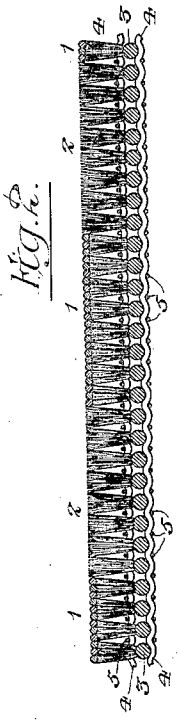


Fig. 2.

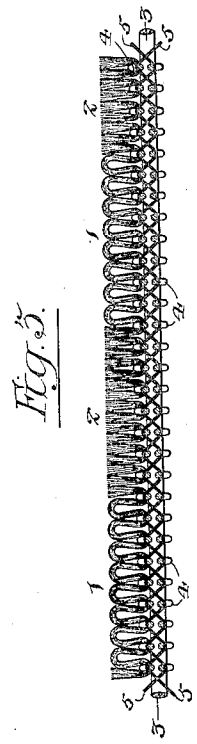


Fig. 5.

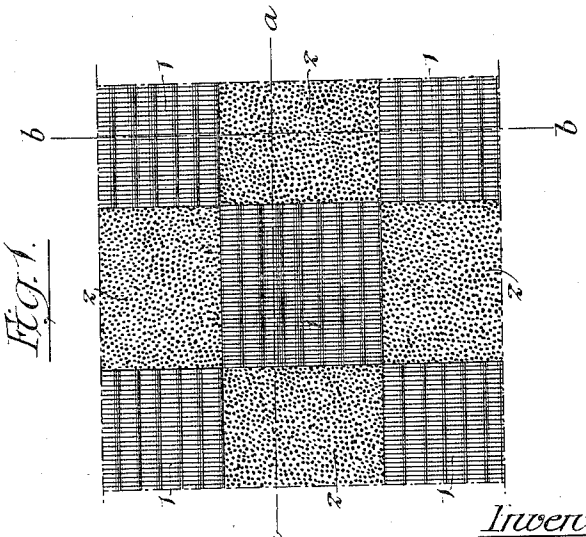


Fig. 1.

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UNITED STATES PATENT OFFICE.

ALFRED F. McCOLLUM, OF ESPY, PENNSYLVANIA, ASSIGNOR OF THREE-FIFTHS TO JAMES MAGEE, 2D, OF BLOOMSBURG, PENNSYLVANIA

WOVEN PILE FABRIC.

SPECIFICATION forming part of Letters Patent No. 690,912, dated January 7, 1902.

Application filed December 5, 1899. Renewed July 26, 1901. Serial No. 69,825. (No model.)

To all whom it may concern:

Be it known that I, ALFRED F. McCOLLUM, a citizen of the United States, and a resident of Espy, Pennsylvania, have invented certain Improvements in Woven Pile Fabrics, of which the following is a specification.

My invention relates to that class of pile fabrics having a pile surface composed partly of cut or tufted pile and partly of uncut or looped pile, the object of my invention being to produce a fabric of this character in which the cut-pile figures shall have a well-defined outline and in which the cut pile shall be of the same height as the uncut pile.

In the accompanying drawings, Figure 1 is a face view of a piece of fabric embodying my invention. Fig. 2 is an exaggerated sectional view of a piece of the fabric, the section being taken transversely or in the direction of the weft—that is to say, on the line *a a*, Fig. 1. Fig. 3 is a like exaggerated sectional view of a piece of the fabric, the section being taken longitudinally or in the direction of the warp—that is to say, on the line *b b*, Fig. 1; and Figs. 4, 5, and 6 are views illustrating a method and means which may be employed for producing my improved fabric.

Heretofore in the manufacture of pile fabrics having a pile-surface partly cut and partly uncut it has been the practice to produce successive rows of cut and uncut pile. Thus one row would have uncut loops disposed transversely in those portions of the fabric where the uncut loopswere to appear. and the next row would have cut loops disposed transversely in those portions of the fabric where such cut loops were required, the cutting of said loops being effected either by the withdrawal of the wire or by weaving said loops higher than the others and afterward shearing off the tops of the same. Two rows of loops—that is to say, a cut row and an uncut row—were thus required for each transverse line of the pattern, and the weaving of the fabric was consequently slower and more expensive than the weaving of an ordinary pile fabric having all of its loops either cut or uncut. It has also been proposed in producing pile fabrics with cut and uncut pile to cut off the tops of some of the loops in a row, while leaving the remaining loops uncut; but in such case the cut loops must of necessity be of less height than the uncut loops, and it has further been proposed to press down part of the loops of a pile fabric and cut the loops left standing; but in this case there is the further objection that the borders of the cut figure or design cannot be sharp or well defined, owing to the necessary disturbance of the standing loops around the edge of each area of depressed loops.

By the method of producing the fabric forming the subject of this invention the cut and uncut loops are of the same height, and the boundaries of the cut and uncut figures are accurately controlled, so that perfect sharpness of outline results.

In Figs. 1, 2, and 3 of the drawings, 1 represents rows of loops forming uncut pile, and 2 represents rows of tufts or cut pile in line transversely with said pile-loops, both cut and uncut pile being formed from a single row of loops formed over the same pile-wire.

The backing of the fabric may be woven in any ordinary or available manner, that shown in the drawings comprising stuffer-warps 3, binding-wefts 4 4, and binding-warps 5 5.

In producing my improved fabric I use a U-shaped or other equivalent pile-wire open at the top and in connection therewith a knife or knives, which may be thrust down through a row of loops formed over the wire, then be drawn along said row of loops, so as to cut the same to any desired extent, and then withdrawn, the number of knives employed or the number of times the cutting operation is repeated being dependent upon the pattern to be produced.

In Figs. 4, 5, and 6 I have shown one form of device for carrying out my invention, 6 representing the hollow U-shaped pile-wire, 7 a knife mounted on a bar 8 above the pile-wire, and 9 a bar for operating said knife, so that it may be thrust down through the warps on the wire or may be withdrawn therefrom. Hence when the said bar 9 is moved in the direction of the arrow, Fig. 4, the knife will be thrust through the row of loops, and longitudinal movement of both bars 8 and 9 in the direction of the arrow, Fig. 5, will then cause the knife to cut the loops of pile-thread

throughout that portion of the length of the row of loops corresponding to the extent of movement of the bars while the knife is thus in engagement with the single row of loops, a reverse movement of the bar 9 causing the withdrawal of the knife when the desired number of loops has been cut, as shown in Fig. 6. By this means each of the rows of loops formed on the pile-wires can be cut at any desired point or points in its length.

A loom constructed for weaving my improved pile fabric forms the subject of my application Serial No. 67,525, filed July 8, 1901.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. A fabric having a pile-surface with cut and uncut figures formed by uncut pile-loops and cut pile-tufts in the same transverse line or row of pile, the loops and tufts being of the same height, and the outline of the figures sharp and well defined, substantially as specified.

2. A fabric having a pile-surface with cut and uncut figures formed by uncut pile-loops and cut pile-tufts in each transverse line or row of pile, the loops and tufts being of the same height, and the outline of the figures sharp and well defined, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALFRED F. McCOLLUM.

Witnesses:
S. F. PEACOCK,
R. L. ORANGE.