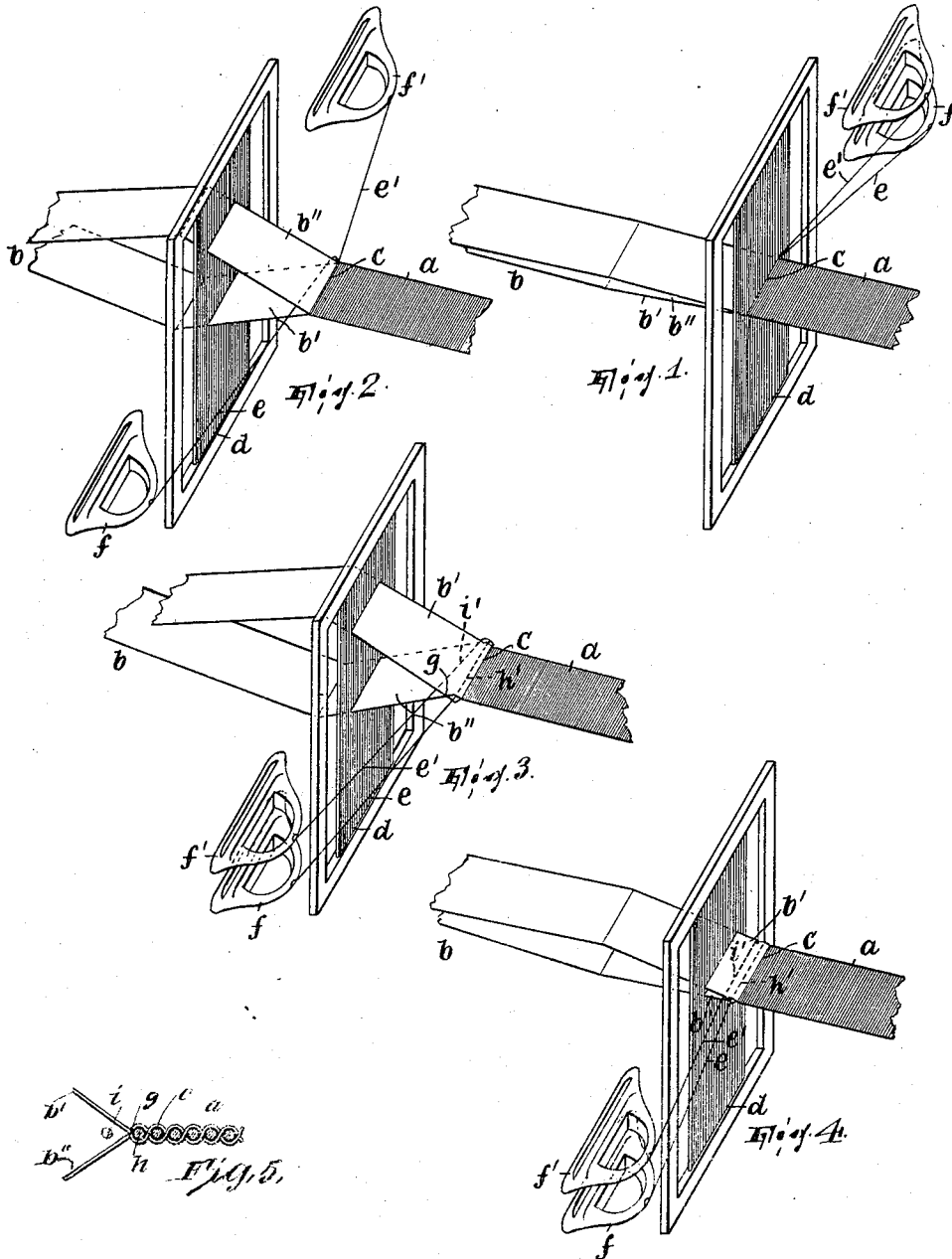


D. PATRICK.
METHOD OF WEAVING.
APPLICATION FILED APR. 26, 1918.

1,295,196.

Patented Feb. 25, 1919.



WITNESS:

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METHOD OF WEAVING.

1,295,196.

Specification of Letters Patent.

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Application filed April 26, 1918. Serial No. 231,005.

To all whom it may concern:

Be it known that I, DANIEL PATRICK, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented a certain new and useful Method of Weaving, of which the following is a specification.

In the weaving of certain goods, for example ribbons having a warp of silk and a weft or filling of cotton or other inferior material, it is a considerable element of economy to obtain what is termed "cover," to wit, the hiding or covering of the filling by the warp with the use of as little as possible of the superior material which constitutes the warp, it requiring the highest skill of the designer to provide for such a disposition of the warp threads that with the very least expenditure of warp the woven goods shall as nearly as possible have the appearance of being composed entirely of the same material as the warp.

The principal object of this invention is to provide a method of weaving whose product shall present better "cover" and more perfect attainment of certain other desirable qualities (such as elimination of the spaces that may be detected in woven goods when held up to the light) than goods woven according to the known methods, and in addition an edge which shall be free of loops and otherwise nicely finished.

To this end my invention contemplates laying from time to time a filling in the warp shed before, and a separate filling in the warp shed after, a cross formed in the warp, and then beating up the fillings and intervening cross to the fell of the cloth.

The experienced weaver will see that according to this invention the reed in beating up not only advances to the fell of the cloth a greater quantity of material than heretofore—to wit, the two fillings and the warp-cross intervening between them—but that the warp takes part in the beating up by virtue of such cross, which in effect becomes a running cross during the beating up; and because there is more material to be interposed between the fell and the reed at the limit of the beating-up movement and because the warp itself, by virtue of its cross, is made directly subject to the beating-up action of the reed the weaving is very favorably modified and so caused to result in a woven product having the superior characteristics hereinbefore indicated. In view of

the following explanation it will further be clear that a nicely finished edge may, according to this invention, be produced.

The invention is diagrammatically illustrated in the accompanying drawings, wherein,

Figures 1 to 4 show the different steps in a single cycle of my method of weaving; and

Fig. 5 is a longitudinal magnified section of the fabric, shed and filling substantially as these parts are related in the step illustrated by Fig. 3.

The cloth is represented by *a*, the shed by *b*, the fell of the cloth by *c*, the beating up medium, or reed, by *d*, the fillings by *e e'* and the filling supplies, or shuttles, movable through the warp sheds, by *f f'*. It will be understood from the drawings that the reed *d* is moved toward and from the fell of the cloth in any manner, as by the usual reciprocating lay or batten (not shown). It will also be understood that means (not shown) is utilized to form a succession of sheds in the warp and in consequence a succession of crosses or decussations.

Fig. 1 shows the reed up to the fell *c*, that is, at its forward or beating-up limit, and the new shed being formed, that is, the parts *b' b''* of the warp shed, which before the last filling length became beaten up by the reed to form the fell of the cloth respectively occupied upper and lower positions, now respectively occupying lower and upper positions, so that the consequent cross holds said filling length in its beaten-up position.

In Fig. 2 the reed has receded and the shed shown partially developed in Fig. 1 is now more or less fully developed; and in Fig. 3 the reed is shown still retracted and the shed shown is that which is formed immediately after that illustrated in Fig. 2, in consequence producing (as will appear) a cross at *g*.

Upon the shed illustrated by Fig. 2 being formed the filling supply *f* is projected through such shed and leaves a length *h'* of filling therein. Then, after the shed illustrated in Fig. 3 is formed, incidentally producing the cross *g*, the filling supply *f'* is projected through the latter shed as shown in Fig. 3 and leaves a length *i'* of filling therein.

The reed now moves forward and in doing so pushes or beats up the filling lengths *i'* and *h'* and the warp cross *g* intervening

between them to the old fell *c*. Of course the warp cross *g* tends in the very act of forming more or less to advance the filling length *h'* to the old fell *c* of the cloth, but not effectually, as is illustrated by Fig. 5, where it is diagrammatically shown that at the left of the old fell *c* the filling length *h'* and the warp are not so compactly related to each other as the filling lengths and warp in the finished fabric—to the right of the old fell; the effectual advance of the filling length *h'* to the old fell *c* comes when, as aforesaid, the reed effects the beating up with respect to the filling lengths *i'* and *h'* and the intervening warp cross *g*. This completes a cycle, all parts being again in the position shown by Fig. 1.

My method of weaving has this advantage over laying in two successive sheds before each beating up two filling lengths forming parts of the same filling (from only one shuttle), as I am advised has heretofore been proposed, to wit:

The principal advantage attained by using separate fillings instead of only one is this: When only a single filling is used, to be projected through the shed, followed by a crossing of the warp threads, and then projected back through the shed, the length of filling first laid in simply re-

poses back of the cross without being beaten up to the fell, and so is free to relax, when the filling carrier makes its return movement, and such relaxation is likely to cause looping at one edge of the fabric. When two fillings are employed in the manner herein stated each filling after deposit in the shed is held taut by the filling carrier until it is beaten up to the fell of and becomes a part of the cloth, so that looping is not possible and the edges are regularly formed.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

The method of weaving herein described consisting in successively forming crosses in the warp and also performing the following steps from time to time, to wit: passing a filling through and thereby laying a primary length of filling in the warp shed before, and passing a separate filling through and thereby laying a secondary length of filling in the warp shed after, a cross, and beating up the primary and secondary filling lengths and intervening cross to the fell of the cloth.

In testimony whereof I affix my signature.

DANIEL PATRICK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."