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J. K. DALKRANIAN.

METHOD FOR FORMING WOVEN PILE FABRICS.

APPLICATION FILED MAR. 20, 1905. RENEWED JUNE 11, 1906.

Fig. 1

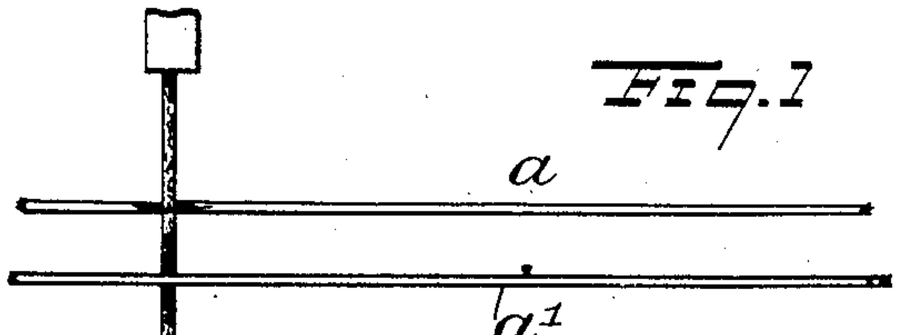


Fig. 2

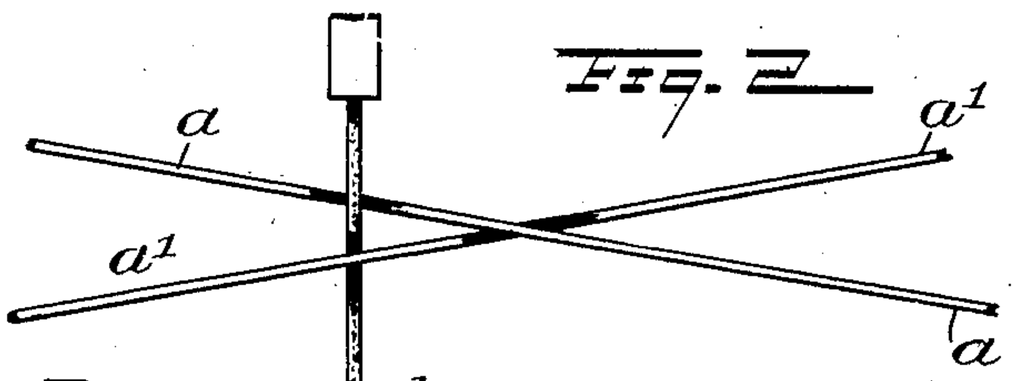


Fig. 3

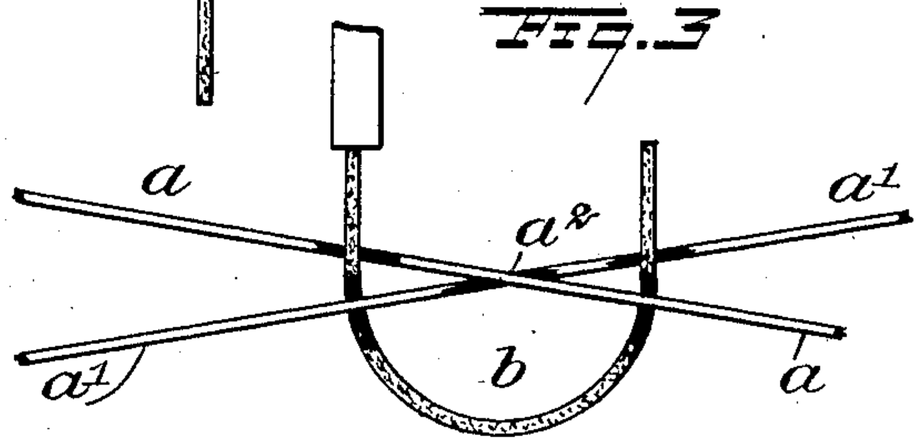


Fig. 4

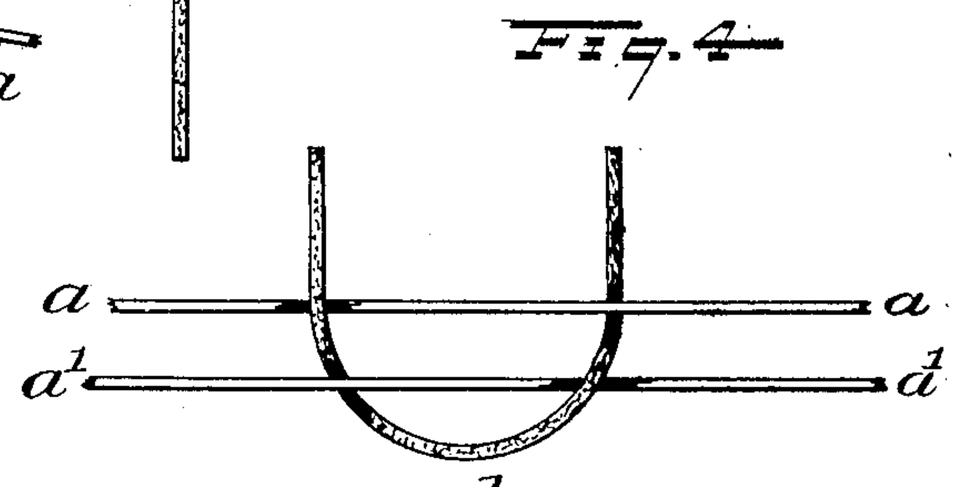


Fig. 5

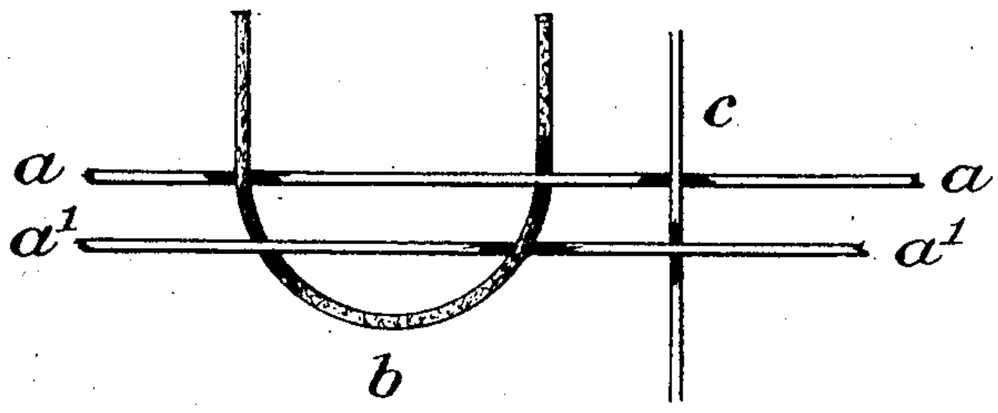


Fig. 6

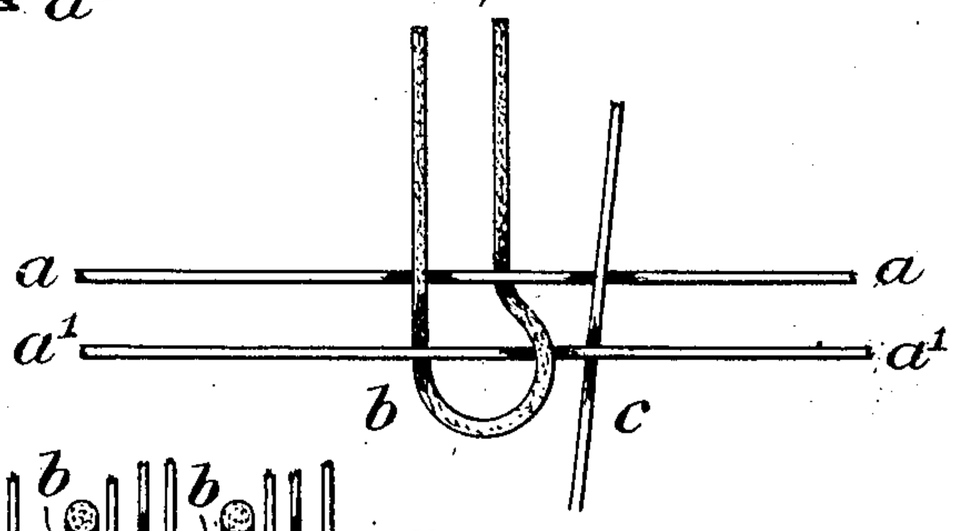
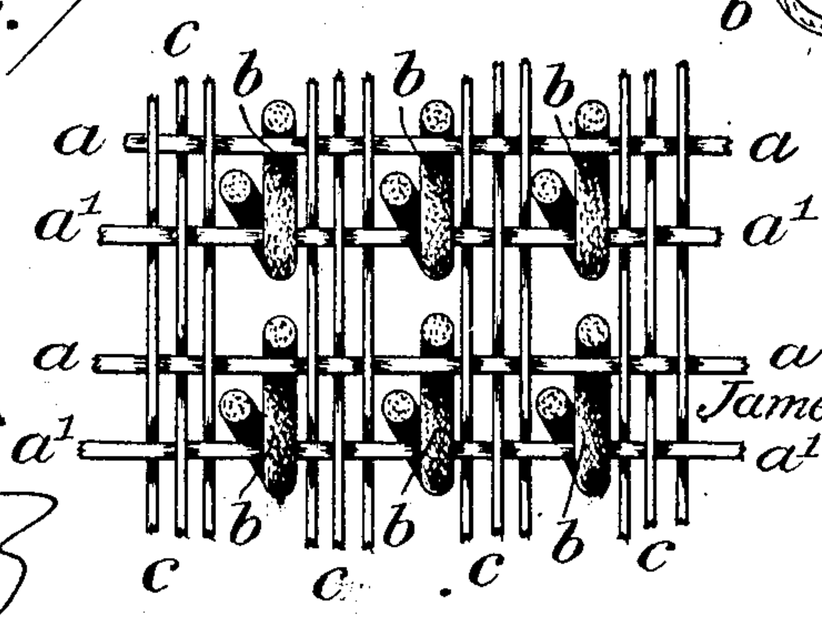


Fig. 7



WITNESSES:

John A. Brophy

Rud. J. Hoffer

INVENTOR

James Karmi Dalkranian

BY

ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES KARMI DALKRANIAN, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNITED STATES PERSIAN CARPET COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

METHOD FOR FORMING WOVEN PILE FABRICS.

No. 882,454. Specification of Letters Patent. Patented March 17, 1908.

Application filed March 20, 1905, Serial No. 250,980. Renewed June 11, 1906. Serial No. 321,236.

To all whom it may concern:

Be it known that I, JAMES KARMI DALKRANIAN, a citizen of the United States, and a resident of the city of New York, borough of the Bronx, in the county and State of New York, have invented a new and Improved Method for Forming Woven Pile Fabrics, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved method for forming woven pile fabrics of the tufted pile rug type, woven in any desired design and color, the weave having Persian knots and being preferably produced on a loom, such for instance as shown and described in the application for Letters Patent of the United States, No. 250,979, filed by me under even date herewith.

The method consists essentially in crossing a pair of normally parallel ground warp threads, then looping a pile warp thread around the crossing of the said ground warp threads in the direction of the length of the ground warp threads, then returning the ground warp threads to parallel position, and finally inserting a weft between the ground warp threads and beating up the weft and the pile warp thread.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figures 1, 2, 3, 4, 5 and 6 are perspective views illustrating the consecutive steps necessary in the formation of the weave; and Fig. 7 is a plan view of the finished fabric.

In order to carry the above-described method into effect I proceed in detail as follows:

In Figs. 1 to 6 are illustrated a pair of ground warp threads a, a', a pile warp thread b and a weft thread c, it being, however, understood that in practice a set of pile warp threads b, selected in color and arranged according to a predetermined pattern, is interlooped with a number of pairs of ground warp threads a, a', and one or more (as shown in Fig. 7, three) weft threads c are interwoven with the ground warp threads a, a' between successive sets of pile warp threads b to form the complete fabric shown in Fig. 7.

In order to understand the method of weaving the pile fabric it is sufficient to describe the operation of a single pile warp thread b relative to its corresponding pair of ground warp threads a, a'.

As shown in Fig. 1, the ground warp threads a, a' of a pair are arranged approximately parallel one to the other, and between the ground warp threads a, a' is passed, preferably in a downward direction, the pile warp thread b, and then the ground warp threads a, a' are crossed in front of the pile warp thread b, as illustrated in Fig. 2. The upper end of the pile warp thread b is held fixed, while the lower or loose end of the pile warp thread b is now looped around the crossing a^2 of the ground warp threads a, a' in the direction of the length of the ground warp threads, so that the free end of the pile warp thread b extends up on the other side of the crossing a^2, as will be readily understood by reference to Fig. 3. When this has been done the ground warp threads a, a' are returned to their normal approximately parallel position, as shown in Fig. 4, that is, are moved back to the former position shown in Fig. 1. The ground warp threads a, a' are now opened for the passage of a weft thread c (see Fig. 5), and then this weft thread c, with the pile warp thread b, is beaten up, as indicated in Fig. 6. If desired, more weft threads may now be interwoven with the ground warp threads a, a' in the usual manner, as indicated in Fig. 7.

From the foregoing it will be seen that by crossing the ground warp threads a, a', then looping a pile warp thread b around the crossing in the direction of the length of the ground warp threads and finally returning the said ground warp threads to a parallel position, a Persian loop is formed, that is, the pile warp thread b passes under the ground warp thread a, then over to the top of the other ground warp thread a', is then looped completely around this ground warp thread a' to extend up between the two ground warp threads a, a' while the other or beginning end of the pile warp thread extends up on the outside of the ground warp thread a. After the formation of the Persian knot, the ends of the pile are cut off a desired distance above the body of the fabric to render the pile face uniform.

The fabric produced in the manner described is an oriental weave having Persian

knots, the pile face of the fabric being in any desired color and according to a predetermined pattern.

From the foregoing it will be seen that in the formation of the Persian knot, as described, but two movements of the pile warp thread *b* are required, that is, an up and a down movement of the pile warp thread between the ground warp threads of a pair of ground warp threads, while in the formation of this knot as heretofore practiced, four movements of the pile warp thread were required, namely, down between the ground warp threads, up on the outside of one ground warp thread, down between the ground warp threads and up on the outside of the other ground warp thread. It will also be noticed that in the formation of the Persian knot described, the ground warp threads of a pair of ground warp threads are crossed and returned to parallel position during the interweaving of the pile warp thread with the ground warp threads for each Persian knot, and the said ground warp threads of a pair of ground warp threads are crossed and returned to parallel position between successive picks.

By the method described, it is possible to weave a fabric having Persian knots in a very simple manner and with a loom of comparatively simple construction.

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

1. The herein-described method for weaving tufted pile fabrics having Persian knots, consisting in passing a pile warp thread between a pair of normally parallel ground warp threads, then crossing the said ground warp threads, then looping the pile warp thread around the crossing of the ground warp threads in the direction of the length of the ground warp threads, then returning the ground warp threads to parallel position, inserting a weft between the ground warp threads, and beating up the weft and pile warp thread.

2. The herein-described method for weaving tufted pile fabrics, consisting in passing a pile warp thread between a pair of normally parallel ground warp threads, then crossing the said ground warp threads, then looping the pile warp thread around the crossing of the ground warp threads in the direction of the length of the ground warp threads, and with the ends of the pile warp thread extending upwardly on opposite sides of the crossing, returning the ground warp threads to parallel position, inserting a weft between the ground warp threads, and beating up the weft and pile warp thread.

3. The herein-described method for weaving tufted pile fabrics having Persian knots, consisting in passing a pile warp thread between a pair of normally parallel ground warp threads, at an angle thereto, then crossing the ground warp threads at one side of the said pile warp thread, then passing the loose end of the pile warp thread around the crossing of the ground warp threads in the direction of the length of the ground warp threads and up between the ground warp threads at the other side of the crossing, and then returning the ground warp threads to parallel position.

4. The herein-described method for weaving a tufted pile fabric having Persian knots, consisting in passing a pile warp thread between a pair of normally parallel ground warp threads at an angle thereto, then crossing the ground warp threads at one side of the said pile warp thread, then passing the loose end of the pile warp thread around the crossing of the ground warp threads in the direction of the length of the ground warp threads and up between the ground warp threads at the other side of the crossing, then returning the ground warp threads to parallel position, then inserting a weft between the ground warp threads in front of the loose end of the pile warp thread, and finally beating in the weft thread and the pile warp thread.

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

JAMES KARMI DALKRANIAN.

Witnesses:

THEO. G. HOSTER,

EVERARD BOLTON MARSHALL.