

(No Model.)

F. PEARSON.
DOUBLE PILE FABRIC.

No. 484,607.

Patented Oct. 18, 1892.

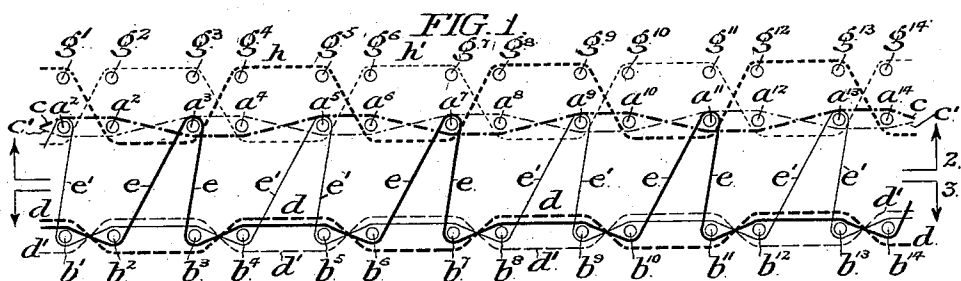


FIG. 2.

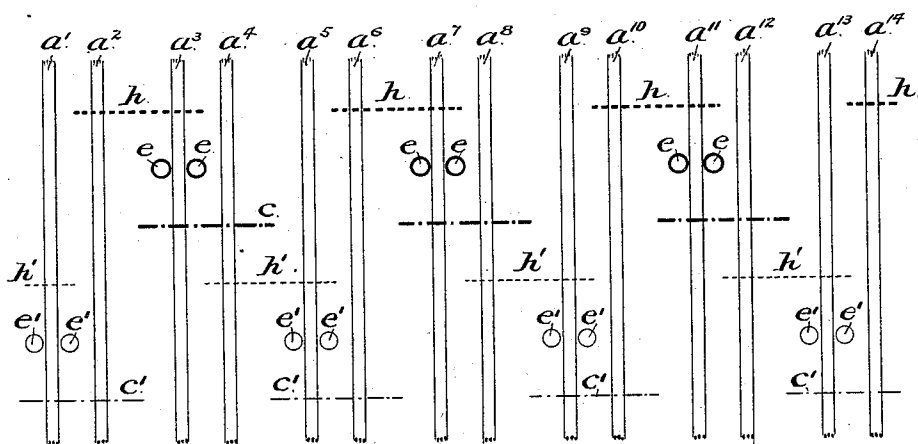
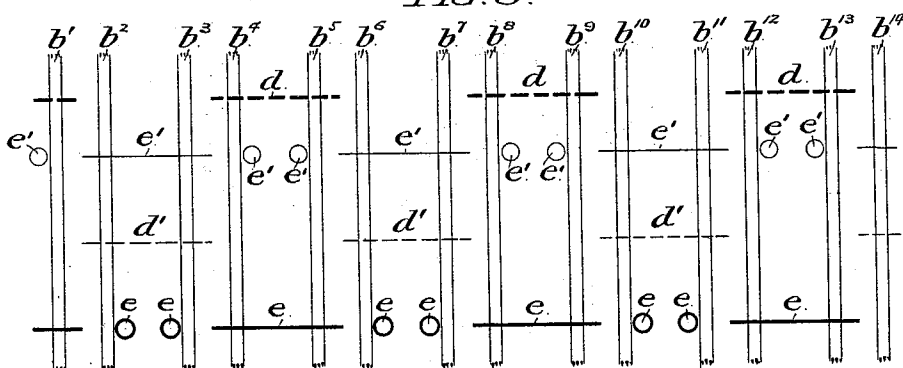


FIG. 3.



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FRED PEARSON, OF PHILADELPHIA, PENNSYLVANIA.

DOUBLE PILE FABRIC.

SPECIFICATION forming part of Letters Patent No. 484,607, dated October 18, 1892.

Application filed April 2, 1892. Serial No. 427,442. (No model.)

To all whom it may concern:

Be it known that I, FRED PEARSON, a citizen of the United States, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Double Pile Fabrics, of which the following is a specification.

My invention relates to plushes and other pile fabrics woven double and produced, as is usual, by simultaneously weaving two webs each of which forms the backing for a complete single web of plush, which webs are united by pile threads interwoven with both and subsequently cut to separate the webs.

The pile threads of plushes formed as double pile fabrics having the same weave, and formed in a power loom, have heretofore been in pairs interwoven with the weft threads of said fabrics, that is to say, each dent has comprised two pile threads, one of which, the first, has been interwoven in any usual manner with four of the weft threads of the upper fabric, and has then been crossed to the lower fabric,—and the other, the second, has been interwoven with the corresponding weft threads of the lower fabric,—the first pile thread has been interwoven with the succeeding four weft threads of the lower fabric and then returned to the upper fabric, while the second pile thread has been interwoven with the second four weft threads of the upper fabric, and then returned to the lower fabric. This is commonly known as the "Utrecht" weave. The two pile threads of each pair thus manipulated are of course, when crossed, brought into close contact with each other, and when the fabrics are separated the two adjacent pile ends fail to stand upright but tend to lie over on their sides and be one behind the other in an oblique relationship, whereby a furrowed or ridged aspect is imparted to the finished fabric which detracts from its appearance and market value.

In an application for Letters Patent filed by me in the United States Patent Office upon March 31, 1891, as Serial No. 387,114, I have shown described and claimed, a double pile fabric in which two webs consisting of ground warp and weft threads are united by pile warp threads which pass and re-pass from one web to the other to form tufts in the resulting fabrics, and in which, to prevent the backing out

or displacement of the tufts of pile, supplementary weft threads and supplementary warp threads are interwoven with the ground webs to form a backing for the same.

It is the object of the present invention to form a double pile fabric, in which one of the webs produced shall embody the valuable characteristics of the "Utrecht" weave, that is to say shall have its pile ends each interwoven in such manner with its picks of ground weft that said ends are retained in place with the required firmness, without the use of tuft holding auxiliary weft threads, but shall be free from the ridging incident to said weave when carried on in the usual manner,—and the other of which shall be of a character similar to that of one of the webs of the double fabric forming the subject matter of the application hereinbefore referred to.

In the accompanying drawings I illustrate and herein I describe a preferred form of a convenient embodiment of my invention, the particular subject matter claimed as novel being hereinafter definitely specified.

In the drawings, Figure 1 is a longitudinal sectional elevation of a double pile fabric conveniently embodying my invention. Fig. 2 is a diagrammatic view of the first or upper web or fabric shown in Fig. 1, being a face plan of said fabric, after the separation of the webs, and Fig. 3 is a diagrammatic view of the second or lower fabric, being a face plan of said fabric, after the separation of the webs.

Similar letters of reference indicate corresponding parts.

In the drawings, a' , a^2 , a^3 , a^4 , &c. are the ground weft threads, or picks of ground weft, of the first or upper fabric, and b' , b^2 , b^3 , b^4 , &c. are the ground weft threads, or picks of ground weft, of the second or lower fabric.

c c' are the ground warp threads of the first fabric, and d d' are the ground warp threads of the second fabric. The ground warp threads are shown as crossed after every second weft thread of the respective webs.

e is a single pile warp thread, interwoven with both webs, the course of which is as follows: Starting at the left hand end of Fig. 1 said thread passes over the thread b' , and under the thread b^2 , of the second or lower web,—passes to the first or upper web and around

the thread a^8 thereof, returns to the lower web and passes beneath the thread b^3 , over the threads b^4 b^5 , and under the thread b^6 , thereof,—passes to the upper web and around the thread a^7 thereof,—returns to the lower web and passes beneath the thread b^7 , over the threads b^8 b^9 , and under the thread b^{10} , thereof, passes to the upper web and around the thread a^{11} thereof,—returns to the lower web, and so on.

e' is a single pile warp thread interwoven with both webs the course of which is as follows: Starting at the left hand end of Fig. 1 said thread passes over the thread a' —passes to the lower web and beneath the thread b' , over the threads b^2 b^3 , and under the thread b^4 , thereof,—passes to the upper web and around the thread a^5 thereof,—passes to the lower web and beneath the thread b^5 , over the threads b^6 b^7 , and under the thread b^8 , thereof,—passes to the upper web and around the thread a^9 thereof, passes to the lower web, and so on.

Each pile warp thread engages alternately with a number of picks of weft of the second web and a single pick of weft of the first web, and each in returning to the second web passes beneath the pick of weft thereof next succeeding that last preceding pick of weft thereof beneath which it passed.

The threads e e' do not exist side by side but are preferably laterally separated by the ground warp threads of the respective fabrics.

The upper web is, as described in my said application, attended by the incident that after the separation of the fabrics the loops composing the pile ends or tufts are liable under pressure to be forced bodily backward and through or out of the web. I therefore provide said web with reinforcing or holding threads which are so maintained in position upon the rear face of the said web as to prevent such movement of said pile ends or tufts L.

g' g^2 g^3 g^4 &c. are a series of what I term loop or tuft holding weft threads, or picks of loop or tuft holding weft thread, upon the back of the first or upper web, and they preferably correspond in number and distribution with the ground weft threads of said web. Each loop holding weft thread is held by suitable means upon the ground weft thread beneath it, and, in such position, it extends transversely across the backs of the tufts or loops of the pile warp threads surrounding or engaged with said ground weft thread and firmly retains said loops against displacement. The means to which I prefer to resort to secure said loop holding weft threads in position are supplementary warp threads h , h' , the arrangement and position of which threads are illustrated in Fig. 1, in which a pair of said threads are shown as binding the loop holding weft threads to the ground weft threads, that is to say, said supplementary warp threads pass respectively above the loop holding weft threads and be-

low the ground weft threads, and are crossed after every second pick of the loop holding weft and ground weft threads.

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

1. A blank adapted to be cut or split to form two pile fabrics, and consisting of two webs each composed of ground warp and weft threads, and of pile warp threads interwoven with both webs, each pile warp thread alternately engaging with a single pick of weft of the first web and with a plurality of picks of weft of the second web,—tuft holding weft threads applied to the rear face of the first web, and supplementary warp threads by which said tuft holding weft threads are bound to the ground weft threads of the first web, substantially as set forth.

2. A blank adapted to be cut or split to form two pile fabrics, and consisting of two webs each composed of ground warp and weft threads, and of pile warp threads interwoven with both webs, each pile warp thread engaging alternately with a number of picks of weft of the second web and a single pick of weft of the first web, and each when returned to the second web, passing beneath that pick of weft thereof next succeeding the last preceding pick of weft thereof beneath which it passed,—tuft holding weft threads applied to the rear face of the first web, and supplementary warp threads by which said tuft holding weft threads are bound to the ground weft threads of said first web, substantially as set forth.

3. A blank adapted to be cut or split to form two pile fabrics, and consisting of two webs each composed of ground warp and weft threads, and of pile warp threads interwoven with both webs, each pile warp thread passing under one then over two then under one pick of weft of the second web, passing then to the first web and around a pick of weft thereof, passing then to the second web and under one then over two then under one pick of weft thereof,—passing then to the first web and around a pick of weft thereof, and so on, each pile warp thread engaging with all the picks of weft of the second web,—tuft holding weft threads applied to the rear face of the first web, and supplementary warp threads by which said tuft holding weft threads are bound to the ground weft threads of said first web, substantially as set forth.

4. A blank adapted to be split or cut to form two pile fabrics, and consisting of two webs each composed of ground warp and weft threads, and of pile warp threads interwoven with both webs, each pile warp thread alternately engaging with a single pick of weft of the first web and with a plurality of picks of weft of the second web,—tuft holding weft threads the picks of which are immediately behind those picks of ground weft of the first web with which the pile threads are engaged, and supplementary warp threads by which said tuft holding weft threads are bound to

the ground weft threads of the first web, substantially as set forth.

5 5. A blank adapted to be cut or split to form two pile fabrics, and consisting of two webs each composed of ground warp and weft threads, and of pile warp threads interwoven with both webs, each pile warp thread alternately engaging with a single pick of weft of the first web and with a plurality of picks of
10 weft of the second web, tuft holding weft threads corresponding in number and distribution with the picks of ground weft of the

first web, applied to the rear face of said first web, and supplementary warp threads by which said tuft holding weft threads are bound 15 to the ground weft threads of the first web, substantially as set forth.

In testimony that I claim the foregoing as my invention I have hereunto set my hand this 14th day of March, A. D. 1892.

FRED PEARSON.

In presence of—

F. NORMAN DIXON,
R. M. RUSSELL.