

No. 858,923.

PATENTED JULY 2, 1907.

E. F. TIMME.  
WOVEN PILE FABRIC.  
APPLICATION FILED OCT. 11, 1906.

Fig. 1,

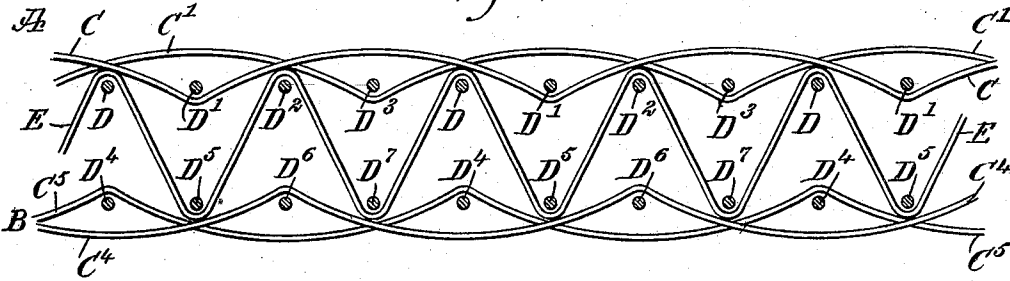


Fig. 2,

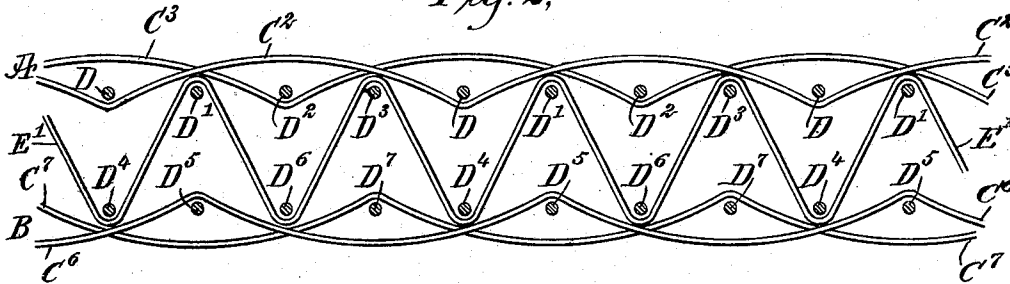


Fig. 3,

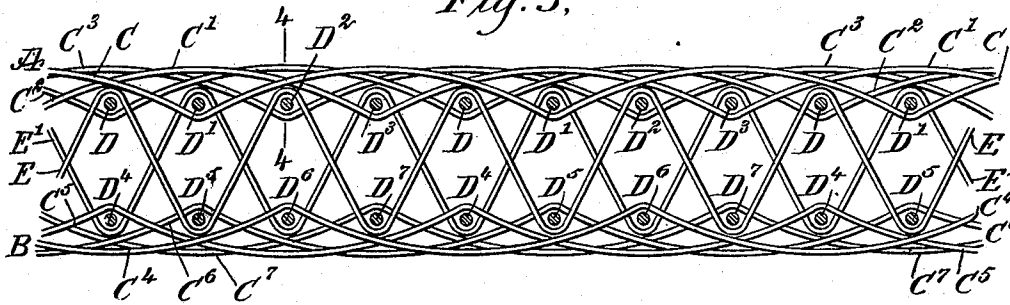
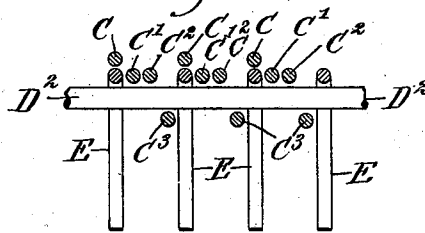


Fig. 4.



WITNESSES

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## WOVEN PILE FABRIC.

No. 858,923.

Specification of Letters Patent.

Patented July 2, 1907.

Application filed October 11, 1906. Serial No. 338,423.

To all whom it may concern:

Be it known that I, EDWARD F. TIMME, a citizen of the United States, and a resident of Spring Valley, in the county of Rockland and State of New York, have invented a new and Improved Woven Pile Fabric, of which the following is a full, clear, and exact description.

The invention relates to plush fabrics usually woven double or face to face, and its object is to provide a new and improved woven pile fabric, in which the pile is securely bound in place, to prevent the piles from being pushed out at the back of the fabric when the latter is used and brushed.

The invention consists essentially of a body formed of ground warp threads and weft threads, and pile threads looped around the weft thread and covered at the back of their loops by the ground warp threads.

The invention also consists of novel features and parts and combinations of the same, which will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is an enlarged sectional side elevation of the improvement, showing a pair of ground warp threads and one of the pile threads of a set; Fig. 2 is a like view of the improvement showing the next following pair of ground warp threads and the other pile thread of the set; Fig. 3 is a sectional side elevation of the improvement showing the successive pairs of ground warp threads, and a set of pile threads, and Fig. 4 is a transverse section of the same on the line 4—4 of Fig. 3.

In the ordinary plush fabrics as heretofore constructed the backs of the pile loops appeared unprotected on the back of the fabric, and hence the piles were liable to work out at the back when a pressure was applied on the face of the fabric, and this was especially the case when a stiff fiber like mohair, wool or the like was used for the pile threads. To overcome this defect it has been proposed to use an extra or additional floating warp thread, as shown, for instance, in the Letters Patent of the United States, granted to J. Reixach, No. 442,749, on December 16, 1890. This additional floating ground warp thread renders the fabric more expensive.

With my invention presently to be described in detail, the regular ground warp threads pass over and cover the backs of the pile loops, and hence the pile loops are not visible on the back and are securely held against a backing-out movement.

The cloth A, as shown in the drawing, has its body formed of two pairs of ground warp threads C, C', and C<sup>2</sup>, C<sup>3</sup>, and weft threads D, D', D<sup>2</sup>, D<sup>3</sup>, and the body of the opposite cloth B is formed of two pairs of ground

warp threads C<sup>4</sup>, C<sup>5</sup> and C<sup>6</sup>, C<sup>7</sup> and the weft threads D<sup>4</sup>, D<sup>5</sup>, D<sup>6</sup> and D<sup>7</sup>. The ground warp threads of each cloth A and B are interwoven with the corresponding weft threads, three up and one down, so that the weaving is repeated, after each four picks, as will be readily understood by reference to the drawings. The pile threads crossing from one cloth to the other are arranged in sets, two pile threads E and E' being in each set and looped around alternate weft threads in each cloth A and B. Thus the pile thread E (see Fig. 1) is looped around the weft thread D in the cloth A, then crossed over to other cloth B and looped around the weft thread D<sup>5</sup> to then return to the cloth A, and looped around the weft thread D<sup>2</sup> and so on, and the other pile thread E' (see Fig. 2) is looped around the weft thread D<sup>4</sup> of the cloth B and then crossed over to the cloth A and looped around the weft thread D', then passed back to the cloth B and looped around the weft thread D<sup>6</sup> and so on.

Of the pair of ground warp threads C and C' the ground warp thread C (see Fig. 1) passes over and covers the back of the loops formed by the pile thread E on the weft threads D, D<sup>2</sup>, D<sup>4</sup> .... in the cloth A, and the other ground warp thread C' passes over the said weft threads D, D<sup>2</sup>, D<sup>4</sup> .... adjacent to the said pile thread E. The next following pair of ground warp threads C<sup>2</sup>, C<sup>3</sup> for the cloth A is similarly arranged (see Fig. 2), that is, the ground warp thread C<sup>2</sup> passes over and covers the backs of the loops of the pile thread E', at the weft threads D', D<sup>3</sup>, D' ...., while its mate, the ground warp thread C<sup>3</sup>, passes over the said weft threads D', D<sup>2</sup>, D' .... adjacent to the loops of the said pile thread E'.

The pairs of ground warp threads C<sup>4</sup>, C<sup>5</sup> and C<sup>6</sup>, C<sup>7</sup> for the cloth B are arranged similar to the ones for the cloth A and as above described, that is, the ground warp threads C<sup>4</sup> and C<sup>6</sup> pass over and cover the backs of the loops of the pile threads E and E' at the weft threads D<sup>5</sup>, D<sup>7</sup> .... and D<sup>4</sup>, D<sup>6</sup> ...., respectively, and the ground warp threads C<sup>5</sup>, C<sup>7</sup> pass over the weft threads D<sup>5</sup>, D<sup>7</sup> and D<sup>4</sup>, D<sup>6</sup> adjacent to the loops of the pile threads E and E', respectively. It will also be noticed that the weft threads in the cloth A and over which pass the pair of ground warp threads C, C' and the pile thread E (see Fig. 1) is bound in by and passes between the next following pair of ground warp threads C<sup>2</sup>, C<sup>3</sup>, and the weft thread in the same cloth A and over which pass the ground warp threads C<sup>2</sup>, C<sup>3</sup>, and the pile thread E' is bound in and passes between the next following pair of ground warp threads C, C'. The same arrangement is found in the cloth B relative to the weft threads, the ground warp threads and the pile threads forming this cloth.

In order to produce the desired result, that is, to utilize the regular ground warp threads, for covering and binding in place the backs of the pile loops, a special arrangement in the mechanism of the loom for weaving

the fabric is necessary and such as shown and described in the application for Letters Patent of the United States for a loom for weaving pile fabrics, #342,040, filed by Frederick C. Pfeiffer on November 5, 1906.

5 It is understood that the drawings illustrate the fabric very much distorted and exaggerated, and in practice the back of a pile thread is liable to shift sufficiently transversely so as to be covered and bound in by adjacent warp threads C and C' and still not protrude  
10 through the back.

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

1. A woven pile fabric comprising a single body formed of regular ground warp threads and weft threads, and  
15 pile threads looped around the weft threads, the backs of the pile loops being solely overlaid and concealed by the said regular ground warp threads.

2. A woven pile fabric comprising regular non-floating ground warp threads, weft threads interwoven with the  
20 said regular non-floating ground warp threads, and pile threads looped around the said weft threads, the pile threads being arranged in sets and looped around alternate weft threads, the backs of the pile loops being solely covered by the said regular non-floating ground warp  
25 threads.

3. A woven pile fabric comprising ground warp threads, weft threads interwoven with the said ground warp threads, the latter being arranged three up and one down, and pile threads arranged in sets, of which one in a set is  
30 looped around alternate weft threads and the other in the

same set is looped around the remaining weft threads, the backs of the pile loops being covered by the said ground warp threads.

4. A woven pile fabric comprising ground warp threads, weft threads interwoven with the said ground warp threads, the latter being arranged three up and one down, and pile threads arranged in sets, of which one in a set is looped around alternate weft threads and the other in the same set is looped around the remaining weft threads, the  
40 said ground warp threads being arranged in pairs one pair for each pile thread in a set, one of the ground warp threads in a set passing over and covering the backs of the loops of the said pile thread in a set.

5. A woven pile fabric comprising ground warp threads, weft threads interwoven with the said ground warp threads, the latter being arranged three up and one down, and pile threads arranged in sets, of which one in a set is looped around alternate weft threads and the other in the same set is looped around the remaining weft threads, the  
50 said ground warp threads being arranged in pairs, one for each pile thread in a set, one of the ground warp threads in a set passing over and covering the backs of the loops of the said pile threads in a set, and the other ground warp thread of this set extending over the weft thread to one side of the pile thread covered by the other ground  
55 warp threads of the pair.

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

EDWARD F. TIMME.

Witnesses:

THEO. G. HOSTER,  
EVERARD B. MARSHALL.