(Specimens.)

F. PEARSON.

WOVEN PILE FABRIC.

No. 484,541. Patented Oct. 18, 1892.

FIG. 1.

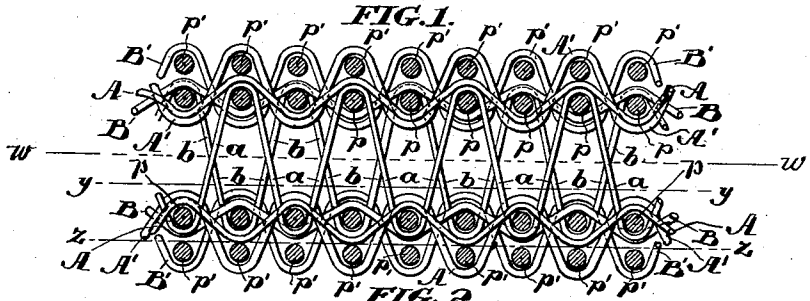


FIG. 2.

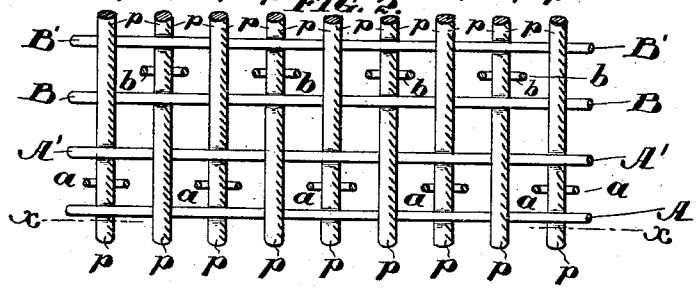


FIG. 3.

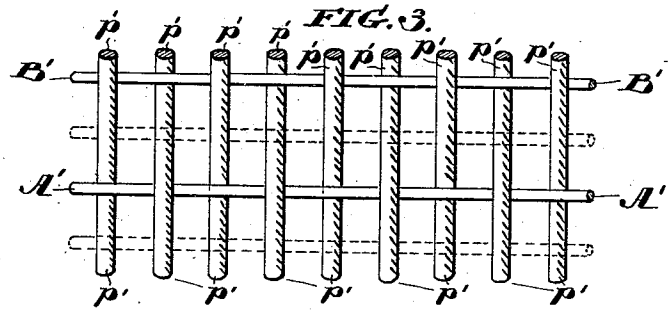
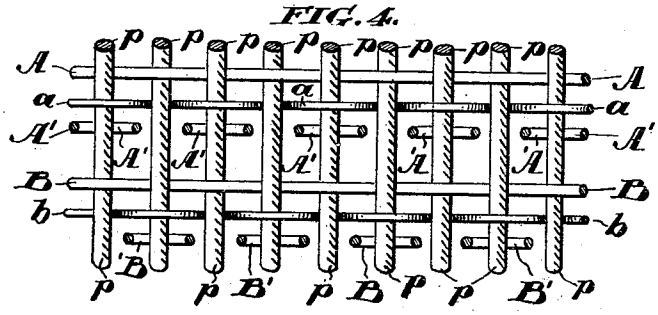


FIG. 4.



WITNESSES:

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WOVEN PILE FABRIC.

SPECIFICATION forming part of Letters Patent No. 484,541, dated October 18, 1892.

Application filed November 13, 1890. Serial No. 371,289. (Specimens.)

To all whom it may concern:

Be it known that I, FRED PEARSON, of the city of Philadelphia, and State of Pennsylvania, have invented a certain new and useful Improvement in Woven Pile Fabrics; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification.

My invention has relation to double pile fabrics, and particularly to plain plushes; and it consists in the weave and construction, hereinafter particularly described.

The object of my invention is to provide, in a novel weave, a construction materially different from any heretofore invented by me or by others, a plain double pile fabric having an even surface presenting the appearance of one even mass of pile without pile marks or ridges appearing across the goods.

A further object is to provide at the same time a substantial fabric so constructed as to prevent the pile from pushing out through the back, and also to prevent the pile from losing its approximate vertical position and the threads from becoming crossed or matted.

I do not herein claim or seek to cover, broadly, the idea of arranging, in connection with ground warp-threads and ground weft-threads and with tufts of pile engaged with picks of said ground weft-thread, a second set of weft-threads the picks of which are immediately behind the picks of ground-weft with which the tufts of pile are engaged and a second set of warp-threads which bind said second set of weft-threads to the ground weft-threads, as such broad idea or invention is embodied and claimed in an application filed by me in United States Patent Office on the 31st day of March, 1891, Serial No. 387,114.

In my improved weave herein described I preferably employ four binder or warp threads and one pile-thread in one reed-space in weaving double pile fabrics. Each pile-thread appears as in pairs in each fabric, each pile-thread of a pair formed, respectively, on opposite sides of the same pick and on every other pick in a series, a pick intervening between each pair of pile threads thus formed in the same line. A warp-thread is arranged on the face of the fabric, preferably from the same reed-space on each side of the said pile-thread, similarly shed with relation to the weft, one warp-thread passing through the entire fabric and the other through the upper or face series only of the picks. An additional pick is formed back of each pile-thread, thus securing it between two picks, which picks are bound together by series of warp or binder threads, preferably two in number, formed alternately over and under the two series of picks or weft-threads, thus forming in each fabric an additional or auxiliary backing.

In the accompanying drawings similar letters of reference refer to similar parts throughout.

Figure 1 is a sectional view of the double pile fabric before the pile is cut, as on the line $x\,x$ of Fig. 2. Line $w\,w$ indicates the line of severance of the pile-threads in dividing the fabrics. Fig. 2 is a partially-sectional plan view on the line $y\,y$ of Fig. 1. Fig. 3 represents a bottom view of the fabric. Fig. 4 is a sectional view of the fabric on the line $z\,z$ of Fig. 1.

A represents one series of binding or warp threads, and A′ the corresponding binding or warp thread between which the pile-thread a is interwoven with the picks p. B B′ are also binding or warp threads, between which the pile-thread b is interwoven, also, with the picks p. Said warps A A′ and pile-thread a are formed in a separate reed-space from the warps B B′ and the pile-thread b. The said warps A B are interwoven with the first or upper series of picks p.

Back or underneath the first series of picks p is formed an additional auxiliary series of picks p', between which two series the pile-threads a and b are bound. The warps A and B form the binder warps or threads of the upper or first series, the picks passing over and under every pick alternately up and down and bind the said picks p together, while the warps A′ and B′ form the binder warps or threads for the two series of picks $p\,p'$, passing over and under said two series of picks $p\,p'$ alternately up and down, and bind the two series of picks and the whole fabric together. While the two series of warps A A′ are formed in the same reed-space, the warp A does not

pass through the entire fabric, but only over and under the first or upper series of picks p, while the warp A′ passes through the whole fabric over and under the two series of picks $p\,p'$ alternately, the same process occurring with the warps B B′, respectively, in a separate reed-space. Between the warp A′ and B no pile-threads are preferably employed.

A number of weft-threads may be thrown with each shot of the shuttle, forming a single pick instead of a single weft-thread. The pile-threads a and b are thus bound and secured firmly in the fabric, having in the length of the goods on each side of each pile-thread a separate warp and on the remaining sides a separate pick, thus binding the pile-thread firmly on four sides into the fabric and preventing any lateral displacement, while on the back of each pile-thread is formed the additional or auxiliary backing, which prevents the pile being forced out through the backing. The picks on which the tufts of pile are formed are preferably those of the face or upper series which are depressed by the warps passing over the outer surface or face of the pick, which thus binds the tuft formed on the said pick tightly between the said upper pick and the pick of the fabric formed immediately underneath the same. It will be clearly seen that the pile-threads are thus bound firmly into the fabric and prevented from being pushed out or losing their proximate vertical position, and in the arrangement and construction described the ridges or pile-marks common in plush fabrics are also thus obviated and done away with, and the pile surface presents when the double fabrics are cut apart a smooth and even appearance.

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

1. The herein-described pile fabric, having two sets of picks, one set formed underneath the other and bound together by binder-threads, and tufts of pile formed in pairs and in series between two parallel warp-threads on each side of every alternate pick of the face series of picks and caught between the upper and under series of picks, the proximate series formed on alternate picks from that of the next series, substantially as described.

2. A pile fabric having a double set of picks, one set formed back of the other and bound together by alternate binding-warps, the upper series bound, also, together by separate binding-warps, and tufts of pile bound and secured between the said two sets of picks, each tuft of pile formed on alternate picks of the face series of picks in series and each tuft bound between two warps, one on one side passing through the entire fabric and the other on the other side passing through the upper series of picks only, substantially as described.

3. A pile fabric having a double set of picks, each set formed back of the other and bound together by alternate binding-warps, the upper series bound, also, together by separate binding-warps, and tufts of pile bound and secured between the two sets of picks, the tufts of pile of each series being formed on every other pick of the face series of picks, said picks on which the tufts are formed having the warps on each side of the tuft passing over the upper or face surface of the upper series of picks and partially depressing the said pick, substantially as described.

4. A pile fabric having two sets of picks, one set formed back of the other and bound together by binder-warps, and tufts of pile formed in pairs and in series between two parallel warp-threads on each side of every alternate pick of the face series of picks and caught between the face and back series of picks, the approximate series of pile tufts formed on alternate picks from that of the next series, one of the parallel warp-threads on one side of the pile tuft passing through the entire fabric and the other on the other side passing through the upper series only of picks, substantially as described.

5. A pile fabric having the double series of picks $p\,p'$, binding-warps A′ B′, binding the two series of picks together, and binding-warps A and B for the face series of picks p, and pile tufts $a\,b$ caught between the two series of picks $p\,p'$ on every alternate pick of the series of picks p in series, said pile-threads a formed in series on alternate picks from those on which the series of pile-threads b are formed, substantially as described.

6. The herein-described double pile fabric, woven one above the other and connected only by interwoven pile-threads, each fabric having two sets of picks, one set formed underneath the other and bound together by binder-threads, and pile-threads passing from one fabric to the other and formed on the face series of picks in pairs in each fabric and in series between two parallel warp-threads on each side of every alternate pick and caught between the upper and under series of picks of each fabric, substantially as described.

7. The herein-described double pile fabric, woven one fabric above the other, connected only by the pile-threads, each fabric having two sets of picks, one set formed underneath the other and bound together by binder-threads, and the pile-threads passing from one fabric to the other and formed in pairs in each fabric on the upper picks and in series between two parallel warp-threads on each side of every alternate pick, the proximate series formed on alternate picks from that of the next series, substantially as described.

8. A double fabric composed of two bodies or fabrics and connecting interwoven pile-threads, each body having a double set of picks, one formed back of the other and bound by alternate binding-warps, the face series bound, also, together by separate binding-warps, and the connecting pile threads secured

in each body between the two sets of picks, each loop of pile formed on alternate picks in series and each loop bound between two warps, one on one side, passing through the entire body, and the other on the other side, passing through the upper series of picks only, substantially as described.

In witness whereof I have hereunto set my hand this 6th day of November, A. D. 1890.

FRED PEARSON.

Witnesses:
HORACE PETTIT,
JAMES B. GIVIN.