July 29, 1947. P. A. PRENETA 2,424,771

WOVEN FABRIC AND METHOD OF MAKING THE SAME

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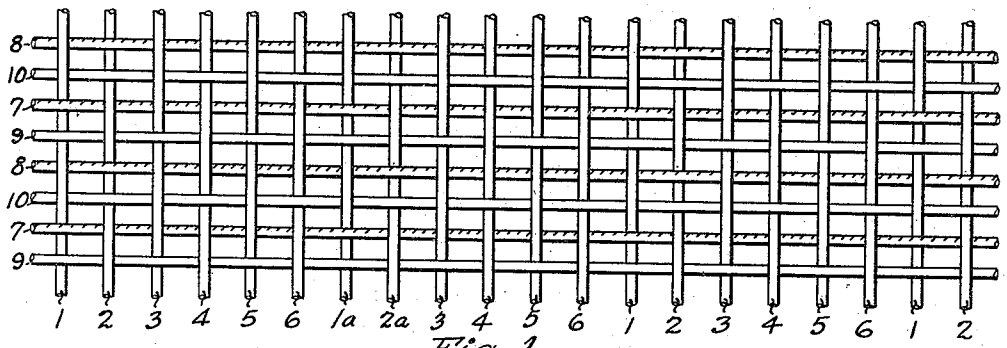


Fig. 1.

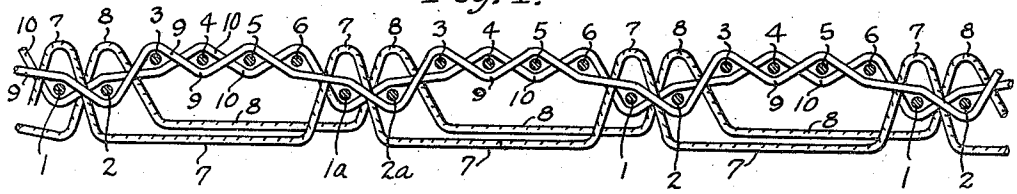


Fig. 2.

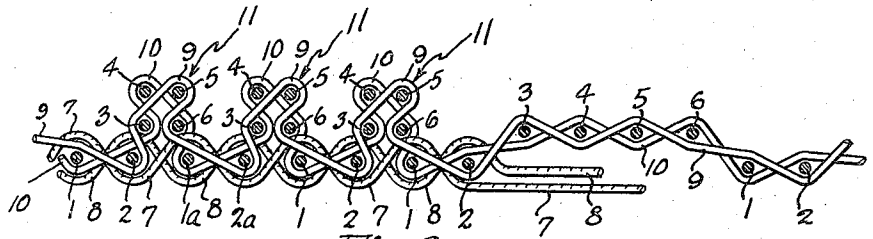


Fig. 3.

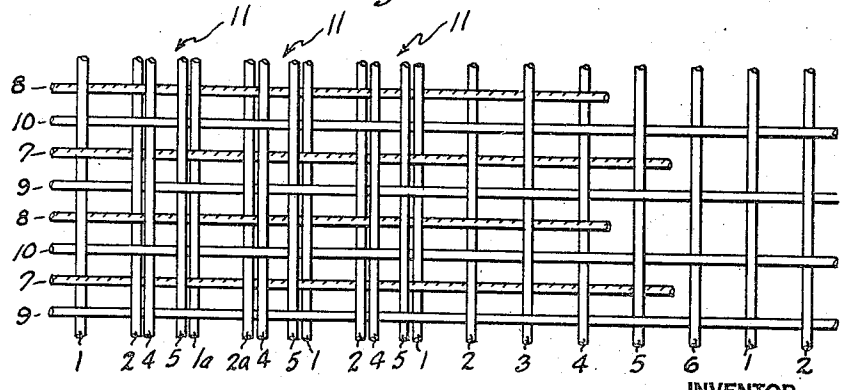


Fig. 4.

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WOVEN FABRIC AND METHOD OF MAKING THE SAME

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7 Claims. (Cl. 139—384)

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This invention relates to a woven fabric, and has for an object to provide an improved fabric in which a series of closely adjacent upstanding ribs are woven on the upper face of a ground or body weave without requiring the use of wires or similar devices, and in which the loops of the ribs are firmly tied together and to the body, producing a stronger and longer wearing fabric and one which has a much better appearance.

With the foregoing and other objects in view, I have devised the fabric illustrated in the accompanying drawing forming a part of this specification. It is, however, to be understood the invention is not limited to the specific details and arrangement of the threads shown, but may embody various changes and modifications within the scope of the invention.

In this drawing:

Fig. 1 is a top plan of the fabric stretched out showing the operation of the shed while weaving;

Fig. 2 is a section of Fig. 1, looking toward the bottom of Fig. 1;

Fig. 3 is a section of the completed fabric on the left part of this figure, showing three adjacent ribs, and with the picks for the next rib to the right shown as they are woven in Fig. 2, and

Fig. 4 is a top plan view of Fig. 3.

The basic structure of this fabric is that there are four picks on top and two on the bottom; that is, two picks on the ground or body weave alternating with four picks on the face of the ground or body, forming the closely adjacent ribs. The filling is indicated by the threads 1, 2, 3, 4, 5 and 6, and the warps by the threads 7, 8, 9 and 10. The two bottom, ground or body picks, are indicated at 1 and 2, while the four top or face picks for one rib are indicated at 3, 4, 5 and 6. The ground or body warp is indicated by the hatched threads 7 and 8, while the alternate warp is shown by the plain threads 9 and 10. It will be seen from Fig. 2 that in weaving, the whole shed, including warps 7, 8, 9 and 10, is open for the two bottom picks 1 and 2. Then the ground warps indicated at 7 and 8 are closed when the four top picks 3, 4, 5 and 6 are put in, but the alternate warps indicated by the plain threads 9 and 10 are open for these four picks. In other words, both the ground and alternate warps are open for the two bottom or body picks 1 and 2, while only the alternate or plain warps 9 and 10 are open for the four top picks 3, 4, 5 and 6, the hatched or ground warps 7 and 8 being closed for these four picks. Then the whole shed is open again for the next two bottom picks

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(1*a* and 2*a*), and then only the plain alternate warps 9 and 10 are open for four more top picks, and so on, as shown in Fig. 2. That is, the ground warp is closed when the four face picks are put in and then open together with the alternate warp for the two picks on the bottom. It will be seen, therefore, that two adjacent sets of four top picks 3, 4, 5 and 6 are separated by two bottom picks 1 and 2. In weaving this fabric, different threads may be used for the top picks than for the bottom picks, in which case there are two revolutions of the crank shaft for two picks into the ground warp, then there is a change of boxes with four revolutions of the crank shaft giving four picks on top, then there is a change again to secure the two picks, and so on, the action being kept repeating. Thus there is one shuttle for the ground picks 1 and 2, and another shuttle for the top picks 3, 4, 5 and 6, but if desired they may all be from one shuttle where the same thread is used for both.

The fill is beaten up after each pick by the reeds on the lathe, but it will be seen that as the pair of bottom picks 1 and 2 are beaten in (particularly pick 1), they force the previous four top picks upwardly into a bunch, or that is, a rib 11, extending along the face of the bottom weave, as shown in Fig. 3, because they are not anchored into the bottom or body warp 7 and 8 between the two bottom picks 2 and 1*a* or 2*a* and 1, and so on. This happens each time the two bottom picks 1 and 2 are beaten in as the weaving is continued, and as shown at the left of Fig. 3, with the result that the four top picks 3, 4, 5 and 6 of each group are brought into closely adjacent but spaced ribs 11, as shown in Fig. 3, on the face of the ground weave. This is the basis of this fabric, and it will be seen from the above that no wires are required over which the loops of the ribs are woven, making a much tighter and much stronger weave and one which will therefore wear much longer, and it is also less expensive to produce than where such auxiliary wires are used.

Various designs may be woven in this fabric by adding auxiliary threads. Thus, for example, a striped effect may be secured by adding additional warp threads of different color or material from the basic warp threads of the weave, but the addition of such threads does not change the basic structure of this woven fabric. This produces a fabric comprising a bottom or body weave on the face of which are a series of closely adjacent parallel ribs comprising filling and warp threads which are closely interwoven with each

other and also firmly tied with the threads of the bottom or body fabric. The body or bottom weave shown is a plain weave, but it may be of various weaves as found desirable.

Having thus set forth the nature of my invention, what I claim is:

1. A woven fabric comprising a body weave and a series of ribs on one face thereof, the ribs each comprising four filling threads alternating with two filling threads in the body interwoven with warp threads, and the warp threads comprising body and alternate warps, the alternate warps being interwoven with both the body and rib filling threads while the body warps are interwoven with the body filling threads only.

2. A woven fabric comprising a series of warp threads comprising ground or body warps and alternate warps, and filling threads comprising a plurality of ground or body picks alternating with a plurality of top picks, the ground or body picks being interwoven with both the ground or body and alternate warps while the top picks are interwoven with the alternate warps only forming closely adjacent ribs on one face of the ground or body weave.

3. A woven fabric comprising a series of warp threads comprising both body warps and alternate warps, and filling threads comprising two body picks alternating with four top picks, the body picks being interwoven with both the body and alternate warps, and the top picks being interwoven with the alternate warps only, and forming closely adjacent ribs on the top face of the body weave between pairs of body picks.

4. A woven fabric comprising a series of warp threads comprising both body warps and alternate warps with the latter warps arranged alternately with the body warps, and filling threads comprising two adjacent body picks alternating with four adjacent top picks, the body picks being interwoven with both the body and alternate warps and the top picks being interwoven with the alternate warps only, and each set of body picks being beaten in to the preceding set of body picks forcing the top picks laterally so as to form closely adjacent ribs on the face of the body weave.

5. A woven fabric comprising a series of warp threads including both body warps and alternate warps, and filling threads comprising alternate sets of body picks and top picks, the body picks being interwoven with both the body and alternate warps and each set of top picks being interwoven with the alternate warps only and between adjacent sets of body picks, and each set of body picks being beaten in to the preceding set forcing the intermediate set of top picks laterally and forming a rib on the face of the body fabric.

6. The method of weaving a fabric which comprises shedding a series of warp threads comprising body and alternate warps and throwing successive picks of body filling threads, then shedding the alternate warp threads only while the body warp remains closed and throwing a series of picks of top filling threads in the open shed of the alternate warps, then again shedding both the body and alternate warps and throwing another set of successive picks of body filling threads, and beating in the latter filling threads to force the top picks laterally to form a rib on the face of the body fabric between the two sets of body picks.

7. The method of weaving a fabric which comprises shedding a series of alternately arranged body and alternate warp threads and throwing a pair of successive picks of body filling threads, then shedding the alternate warp threads only while the body warps remain closed and throwing four successive picks of top filling threads, then again shedding both the body and alternate warps and throwing another set of two successive picks of body filling threads, and beating in the latter pair of body picks to force the top picks laterally to form a rib on the face of the body fabric, and repeating.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,998,041	Barbet	Apr. 16, 1935
793,524	Hewett	June 27, 1905

FOREIGN PATENTS

Number	Country	Date
625,173	France	Dec. 27, 1926
403,171	Great Britain	Dec. 21, 1933
109,426	Australia	Dec. 21, 1938