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E. V. ASTEN

1,964,419

POROUS TEXTILE FABRIC

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Fig. 1.

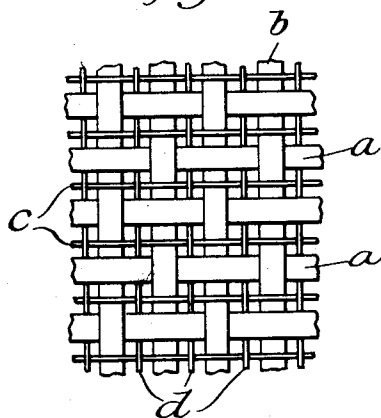


Fig. 2.

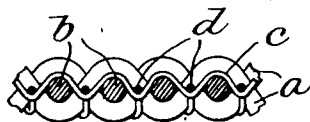
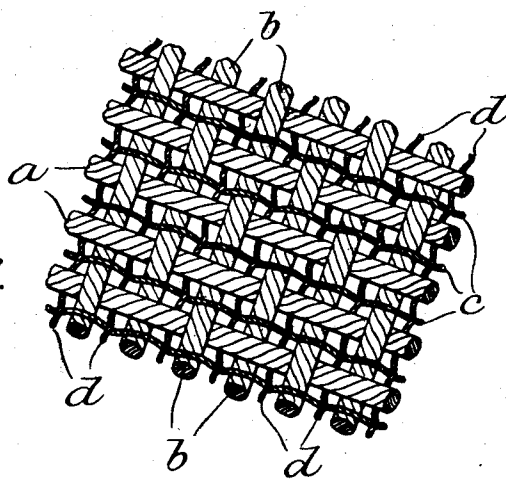


Fig. 3.



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POROUS TEXTILE FABRIC

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7 Claims. (Cl. 139-420)

This invention relates to new and useful improvements in fabrics for technical purposes, especially filter cloths, conveyor cloths for drying and filtering machines, and the like, which must have a strong, lasting porosity, or permeability. It is, however, difficult to weave a fabric having a relatively wide mesh without the threads or yarn of such fabric becoming transposed and the fabric becoming too flabby. This is true in fabrics in which the warp and weft threads cross at right angles.

Porous fabrics have been made in loop or tricot weaves, but these fabrics stretch too much and easily get out of shape. There have also been used crossing threads (gauze fabrics), the manufacture of which is, however, extremely complicated and difficult. Finally it was attempted to obtain the desired permeability by different kinds of weaves or interlacings in rectangular crossing of fabric but, for the most part, such attempts have been unsuccessful.

The object of this invention is the production of a fabric which is especially suitable for filter cloths, conveyor cloths, etc., which, while the threads or yarns cross at right angles, has the desired porosity and bulkiness without there being the danger, during operation, that the yarns or threads might become transposed or that the fabric might become flabby.

In accordance with the invention the fabric is made of a rectangularly crossing, wide meshed (wide looped) base fabric with an additional fabric lying with its warp threads on the one side and its weft threads on the other side of the base fabric, the warp threads being looped around the weft threads and the loops thus formed pulled into the meshes of the base fabric, either blocking same or holding same open, in this way preventing a transposing or distorting of the yarns (threads) of the ground texture so that the fabric (cloth) always remains in a truly permeable condition.

The weave (interlacing) of the fabric under consideration here is already known from circular or tubular fabrics. In the latter, however, the base fabric is not wide meshed but woven in the normal, dense manner, and the loops formed by the threads of the additional fabric are not pulled into the meshes of the base fabric, in order to keep same open, but it is only intended that the weft threads of the additional fabric which are kept loosely by the correspondingly adjusted warp threads of same lie into grooves running between the weft threads of the base fabric and fill the meshes thereof in order to

create a continuous smooth surface from which there results, of course, not a permeable but, on the contrary, a very close meshed fabric. The purpose and action of the known fabric and of the fabric covered by this invention, therefore, differ from each other in every regard.

In the drawing there is shown an embodiment of a fabric in accordance with the invention:

Fig. 1 shows a diagrammatic plan;

Fig. 2 shows a section, and

Fig. 3 shows an isometric view in which the base fabric has a plain weave.

The threads of the base fabric are shown more heavily than those of the additional fabric. "a" are the warp threads and "b" the weft threads of the base fabric. "c" are the warp threads and "d" the weft threads of the additional fabric.

From the drawing it can be noted that the additional fabric in itself is not an independent fabric for the reason that all warp threads of this fabric run below all weft threads.

It can furthermore be seen from them that the additional fabric does not form any crossing with the base fabric but rather that it is a fabric in which all the warp threads lie on the one side of the base fabric and all the weft threads lie on the other side.

Inasmuch, however, as the warp threads of the additional fabric run beneath all the weft threads of the additional fabric, the additional fabric must be pulled in loop form into the meshes or loops of the base fabric, and therefore must block same or keep same open, respectively.

Depending on the requirements, the threads of the base fabric and those of the additional fabric can consist of different materials, such as animal, vegetable or mineral spinning materials, and they may also be of different thickness and twist.

I claim:

1. A porous fabric for technical purposes comprising a wide meshed woven base fabric, and additional warp and weft threads disposed the warp threads on one side and the weft threads on the other side of the base fabric, all of said additional warp threads looped over all of said additional weft threads in all the meshes of the base fabric.

2. A porous fabric for technical purposes comprising a wide meshed woven base fabric having warp and weft threads lying at right angles, additional warp threads disposed on one side of the base fabric and lying across the meshes of the base fabric in parallel relation to the corresponding threads thereof, additional weft threads similarly disposed on the other side of the base fabric, said additional warp and weft threads

looping each other in the wide meshes of the base fabric.

3. A porous fabric for technical purposes comprising a wide meshed woven base fabric having warp and weft threads lying at right angles, additional warp threads disposed on one side of the base fabric and lying across the meshes of the base fabric in parallel relation to the corresponding threads thereof, additional weft threads similarly disposed on the other side of the base fabric, said additional warp and weft threads looping each other in the wide meshes of the base fabric and being pulled therein so as to anchor the warp and weft threads of the base fabric against movement relative to each other.
4. A porous fabric for technical purposes comprising a one and one wide mesh open base fabric, anchoring warp threads disposed one between each two base warp threads and lying on one side of the base fabric, anchoring weft threads disposed one between each two base weft threads and lying on the other side of the base fabric, the additional warp and weft threads looping each other in the meshes of the base fabric.
5. A porous fabric for technical purposes including a wide mesh base fabric comprising interwoven warp threads and weft threads, anchoring means for said fabric comprising two additional sets of threads, the anchoring threads constituting one of said sets all lying on one side

of the base fabric and extending parallel to each other and parallel to one of the sets of threads of the base fabric, the other set of anchoring threads lying all on the opposite side of the base fabric and interlooping the anchoring threads of the first set in the meshes of the fabric.

6. A porous fabric for technical purposes comprising a wide mesh woven base fabric, and anchoring threads on each side of the base fabric, the anchoring threads on one side lying between adjacent like extending threads of the base fabric and extending crosswise of the anchoring threads disposed on the other side, the anchoring threads on the two sides looping each other in the meshes of the base fabric to maintain the fabric threads in proper relation and being of smaller size than the fabric threads so that the fabric meshes are not materially closed.

7. A porous fabric suitable for filter cloths, drying cloths and the like, including an open mesh base fabric comprising interwoven moisture-absorbent threads of fibrous material, anchoring threads disposed on one side of the fabric lying between the fabric warp threads and anchoring threads on the other side disposed between the fabric weft threads, the anchoring threads on one side looping those on the other side in the meshes of the fabric and being of smaller size than the fabric threads.

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