April 23, 1935. W. M. STEVENSON 1,999,067

RESILIENT FABRIC

Filed April 26, 1933

Fig. 1.

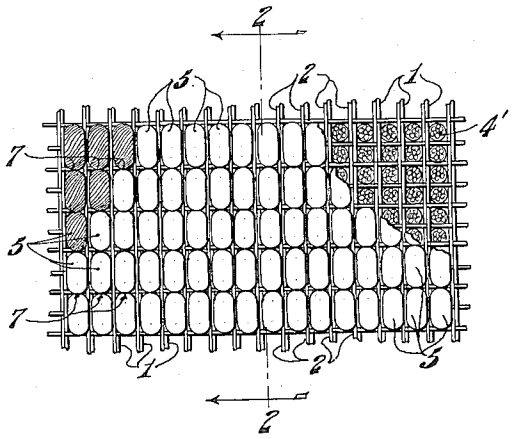


Fig. 2.

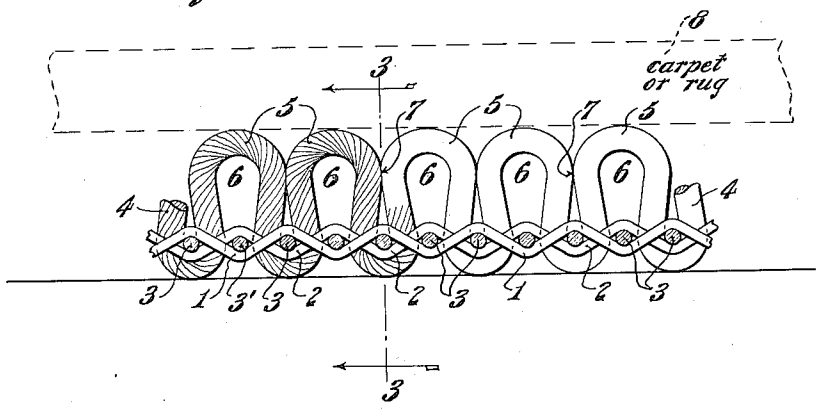
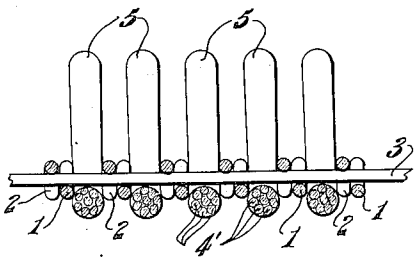


Fig. 3.



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RESILIENT FABRIC

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3 Claims. (Cl. 139—402)

My invention relates to improvements in resilient fabrics, and more particularly to that type of resilient fabric which is intended for use as a cushioning member for floor covering to be placed under carpets and rugs.

An object of my invention is to provide a resilient fabric, which will maintain its resiliency throughout its life, without matting down, even when the carpet, or rug, is of light weight construction.

A further object of my invention is to provide such a fabric, which incorporates in its structure, a multitude of closely arranged air cells, thereby forming a spongelike structure, which will give, or yield, under pressure and immediately return to its normal form, or shape, when the pressure is removed.

These, and other objects and advantages of my invention will be further brought out and described in the specification, the drawing, and the appended claims.

Broadly, my invention comprises a foundation weave of the usual type employing warp threads and filling threads into which is woven, or secured, a yarn of cotton, wool, jute, pulp, paper, or any other fibrous material, in such a manner as to form upwardly projecting loops above the surface of the foundation weave, in such close proximity that the loops mutually support each other. These loops also provide the air cells.

A preferred embodiment of my invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a plan view of a section of the finished fabric, with a portion shown in section, to illustrate the foundation weave, the section being considered in a plane horizontal to the surface.

Fig. 2 is an enlarged sectional view on the line 2—2 of Fig. 1, and

Fig. 3 is a cross sectional view on the line 3—3 of Fig. 2.

Referring now to the drawing in detail, in which like numerals refer to like parts throughout:

The foundation weave comprises the warp threads 1 and 2 and the filling threads 3. Into, or incorporated with this foundation weave, is woven the yarn 4, which is composed of several strands 4', in such a manner as to form the upwardly projecting loops 5. In the weave, illustrated in the drawing, the yarn 4 passes under the filling thread 3, then is looped over, or skipping, the next adjacent filling thread 3, as shown in Fig. 2 at 3'; thence under the next adjacent filling thread, and so on, as shown. The loops 5 form, by their projection above the foundation weave, the air cells, or pockets 6. The loops 5 may be so spaced, as to touch each other, as shown at 7, in Figs. 1 and 2, or they may be slightly spaced from each other, depending upon the degree of resiliency required. The diameter of the yarn 4 is materially greater than the warp and filling threads, 1, 2, and 3, which will provide loops 6 of substantial size, as shown.

In operation, when a carpet, or rug, is placed on the fabric, as illustrated, in dotted lines at 8 in Fig. 2, and pressure is exerted thereon, the loops 5, which are located immediately under the pressure, are, or will be, permitted to be displaced, or flattened, due to the air cells, or spaces 6, and, when the pressure is removed, these loops are returned to their normal shape by the crowding of the loops, bounding the pressure area.

I have shown one type of weave in the drawing, but I do not confine myself solely to this type, as it will be readily understood by any one skilled in the art, that this construction may be varied, or incorporated, in any type of weave, the invention being in the plurality of upwardly extending loops of fibrous material, forming air spaces between the tops of the loops and the foundation weave. The spacing of the loops may be varied, as for instance; the loops, instead of including a single thread, as shown in the drawing, may include pairs of threads, or any other combination.

What I claim is:—

1. As an article of manufacture, a fabric comprising warp and filling threads, threads of yarn relatively larger in diameter than the warp and filling threads and alternately looped under and over the filling threads to provide large air cells in the loops on the top surface of said fabric, each loop touching the loops next adjacent on each edge thereof, and each thread of said looped yarn being in close lateral proximity to adjacent looped threads, whereby said loops are mutually supported on all sides when pressure is applied thereon.

2. As an article of manufacture, a resilient fabric comprising weft threads, warp threads arranged in pairs, the warp threads in each pair crossing the weft threads alternately above and below said weft threads and in opposed relation to each other, threads of yarn alternately looped over and under said weft threads between each pair of warp threads to provide resilient loops on the upper side of said warp and weft threads, said yarn threads being relatively larger in diameter than said warp and weft threads, and each loop of said yarn being engaged by adjoining loops in a warpwise direction and in close proximity to adjoining loops in a weftwise direction, whereby

said loops are mutually engaged for support under pressure.

3. In a resilient fabric for floor coverings, a base fabric comprising weft and warp threads, yarns of relatively larger diameter than said weft and warp threads woven into said base fabric and providing a plurality of upwardly extending loops mutually engaged longitudinally and in close proximity transversely for mutual support under pressure, said loops forming air cells between the tops of the loops and the base fabric.

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