April 22, 1930. T. F. MOORE 1,755,787

ELASTIC WOVEN FABRIC

Filed April 25, 1929

Fig. 1.

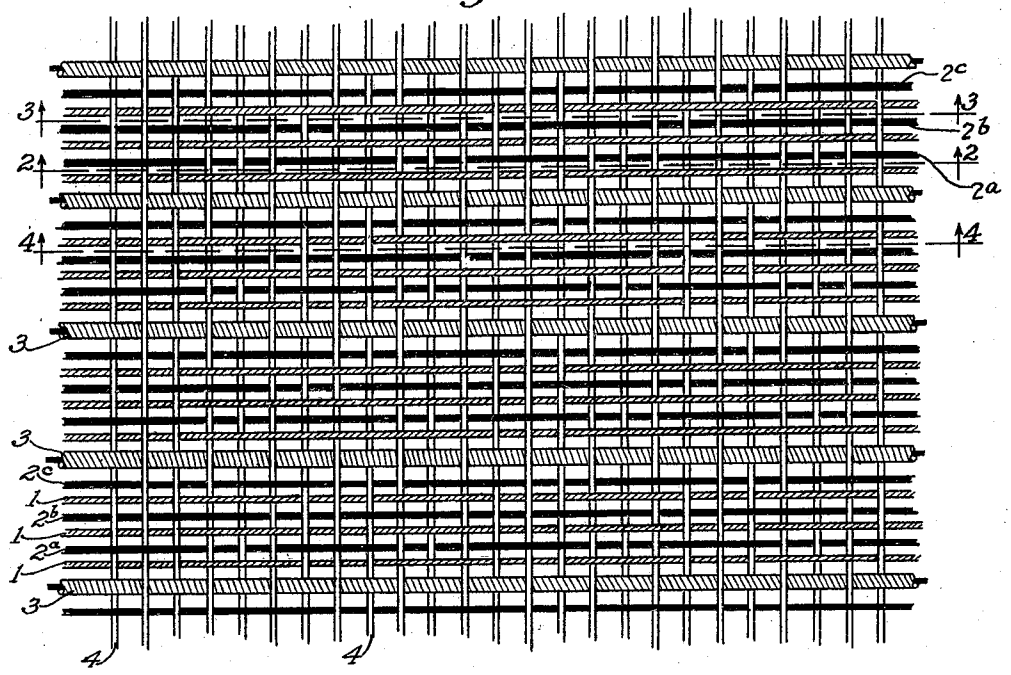


Fig. 2.

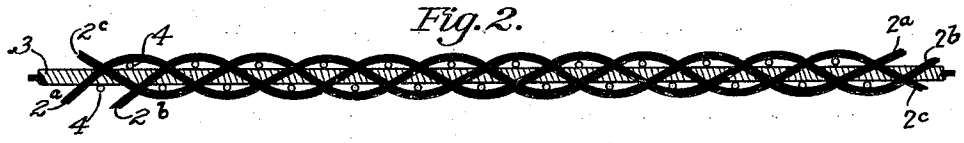


Fig. 3.

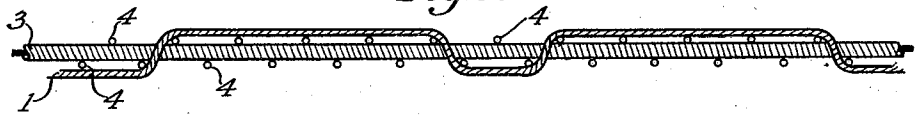
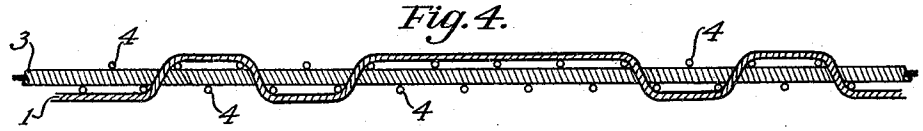


Fig. 4.



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UNITED STATES PATENT OFFICE

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ELASTIC WOVEN FABRIC

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The invention consists in elastic woven fabric embodying certain principles of fabric-construction by which important advantageous results are attained.

Fig. 1 of the drawings illustrates in an opened-out state, with the component warp and weft elements spread apart from one another, a portion of webbing embodying the invention.

Fig. 2 is a view on the order of a section lengthwise of the warp threads in the plane indicated by line 2, 2, in Fig. 1, showing a rubber warp and three binder warps but with figure warp threads omitted in order to illustrate more clearly certain features to which reference is made later herein.

Figs. 3 and 4 are views in section in the planes which are indicated by lines 3, 3, and 4, 4, respectively in Fig. 1, with the binder warps omitted.

The illustrated fabric is composed of figure warp threads 1, 1, binder warp threads 2^a, 2^b, 2^c, covered rubber warp cords 3, 3, and picks 4, 4, of weft. The successive picks of weft lie alternately above and below the rubber cords, in two weft planes. The rubber cords extend straight between the two planes. The figure warp threads, as indicated in Figs. 3 and 4, appear at the opposite faces, alternately, of the fabric, according to the requirements of the effects sought to be attained, and form longer or shorter floats at the respective faces according to the features of the design incorporated in the fabric. The figure warp threads are employed singly, with a binder separating each figure thread from those adjoining, so as to give the figure the most even distribution possible on the face and the back of the fabric.

Having reference more particularly to Fig. 2, as will be seen therein, the binder warp always moves with the rubber, never in the opposite direction, every time that it changes either to go over or under a weft. With the binder warp working in this way, no one binder thread can press one pick of filling toward the rubber from above and the next pick of filling toward the rubber from below, whereby is eliminated the shearing strain caused by running a binder against the rubber, either when going up, or down, or both, which is the usual method. With the binder working always with the rubber, it is possible to run it very tight, and it will not have the usual tendency to make the upper and lower picks of filling cut into the covered rubber every time the webbing is stretched. Such tendency of the binder to press the filling into the rubber warp always occurs where the binder is run against the rubber, and after frequent stretching of a fabric in which such is the case the rubber cords will break at these places.

Changing the binder always with the rubber allows the binder to lie in a position when weaving nearer to the straight position that the rubber takes when weaving than would be the case if the binder worked against the rubber. In other words, more of an obtuse angle is formed where the binder thread bends down or up. Therefore, as well as the binder not having a tendency to cut the filling into the rubber, the binder will reach the limit of its length when the webbing is stretched, and thus put a limit on the strain to which the rubber is subjected sooner than would be the case if the binder worked against the rubber, either going up or going down, which is the common practice when making elastic fabrics.

The figure warp is run slacker than the binder warp, as indicated in Figs. 3 and 4, and is worked opposite to the rubber when going up and down. This is to throw a maximum amount of the figuring warp to the surface. The running of the figure warp slack keeps it from making the picks of filling over and under the rubber cut into the rubber when the webbing is stretched, as does also the presence of the longer floats in the figure warp.

My improved fabric construction enables more binders to be employed within a given width, and more picks of weft within a given length, producing, thereby a finer fabric, namely one having more than usual warp ends and weft picks per square inch. The fabric thereby, also, is rendered stronger by reason of containing more ends to resist strain longitudinally.

What is claimed as the invention is:—

1. Elastic webbing made up of a binder warp, covered rubber warp, and figure warp, with the binder warp and rubber warp being always on the same side of the weft wherever the binder warp changes direction in passing over or under the weft.

2. Elastic webbing according to claim 1, having the figure warp run slacker than the binder warp and worked opposite to the rubber when going up and down.

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