Aug. 12, 1930. H. I. DIAMOND 1,772,458

FABRIC

Filed Oct. 22, 1926

Fig. 1.

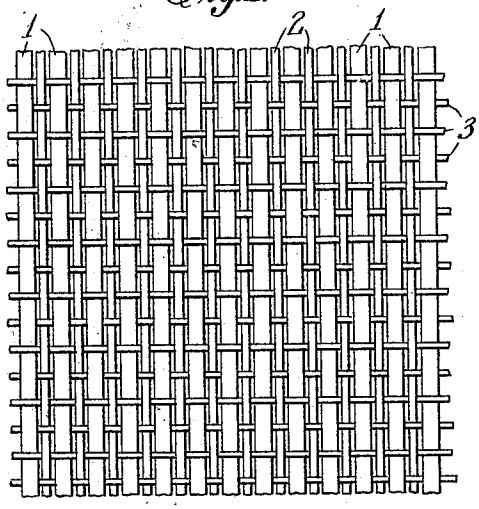


Fig. 2.

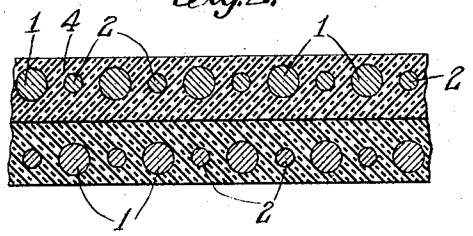
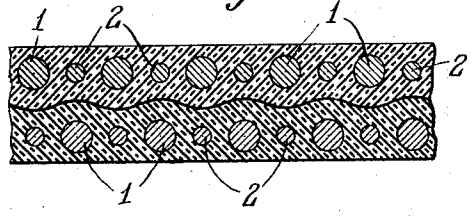


Fig. 3.



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UNITED STATES PATENT OFFICE

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FABRIC

Application filed October 22, 1926. Serial No. 143,441.

This invention relates to a novel and improved fabric which may have a variety of uses but which has been found particularly useful in connection with the making of so-called cord tires for automobiles and for making fan belts.

The object of my invention is to provide a fabric which may possess greater flexibility than the fabric now used and which shall provide a better distribution of rubber, when coated, and particularly when coated plies of fabric are superimposed upon one another as is customary in making various structures of fabric.

The invention will be best understood from the following description when read in connection with the accompanying drawing in which I have shown a selected embodiment of my invention and wherein:

Figure 1 is a plan view of a piece of fabric constructed according to my invention.

Figure 2 is a section through a plurality of plies of rubberized fabric superimposed upon one another.

Figure 3 is a view similar to Figure 2 but showing the plies after pressure has been applied thereto.

My invention comprises a fabric in which the threads running in one direction, for example the warp threads, are made of a plurality of sizes. The number of different sizes may vary as may be found desirable but, for the purposes of illustration, I have shown the threads running in one direction as made of two different sizes of cord. When my fabric is to be employed in a structure subjected to bending and flexing, it is preferable to have the warp threads made of different sizes for reasons which will be explained later.

In Figure 1 I have shown the warp threads as comprising cords 1 of relatively large size and alternating therewith are smaller warp threads 2 made of a smaller size of cord. The weft threads 3 may be made of any suitable size and number. These threads are made of cords of sufficient size and number to hold together the warp threads, because in most structures in which my fabric is employed there is little, if any, stress which has to be taken by the weft threads. While I have shown large and small cords forming the warp threads as alternating, it is obvious that this arrangement may be varied somewhat without departing from the scope of my invention. However, I have found the construction shown to be very satisfactory.

When a ply of fabric, such as shown in Figure 1, is coated with rubber, it will be apparent that an additional amount of the rubber will be contained in the coated fabric because of the fact that the smaller cords 2 provide spaces 4 in the nature of pockets between the larger cords 1. Then, when one ply is superimposed on the other as shown in Figure 2, it will be apparent that the pockets 4 which are filled with rubber form cushioning means to receive the cords 1 on the adjoining ply of fabric. The result is a structure somewhat as shown in Figure 3, it being understood that this figure is greatly magnified. When the plies of fabric are placed one on the other, the larger cords 1 automatically find the pockets 4 between the larger cords on the adjoining ply and the result will be that a bond is formed between the plies which will prevent sidewise slipping. Moreover, the additional amount of rubber made possible by the pockets 4 is disposed between the cords of the respective plies and, therefore, these cords are kept out of contact with each other and supported by each other by a greater amount of rubber than is possible when employing prior art fabrics.

When a structure made up of one or more plies of rubberized fabric and constructed according to my invention is flexed longitudinally, it will be seen that the flexibility is increased first by providing the smaller cords and secondly by the additional amount of rubber which will receive the cords on adjacent plies. Even though the fabric plies are not placed in position so that a large cord will be directly above a smaller cord on another ply, nevertheless, the plies will automatically come to this position as will be obvious to those skilled in the art.

It will be apparent to those skilled in the

art that various changes may be made without departing from the scope of my invention and I therefore do not intend to limit myself except by the appended claim.

I claim:

In combination, a plurality of plies of fabric superposed on one another, each ply comprising a rubberized fabric having adjacent longitudinal cords of different size, the cords of one ply being positioned over the cords of a different size in the adjacent ply.

In testimony whereof, I have affixed my signature to this specification.

HARRY I. DIAMOND.