Sept. 26, 1939. J. V. MOORE 2,173,976

WOVEN ELASTIC FABRIC

Filed May 3, 1938

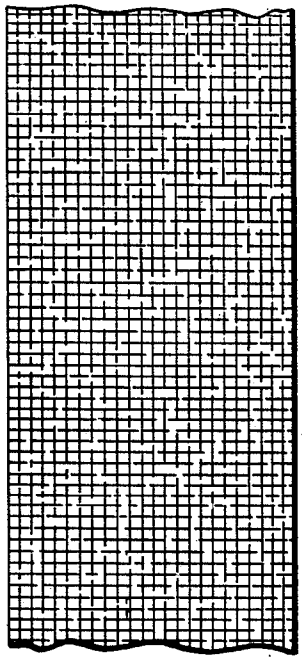


Fig. 1

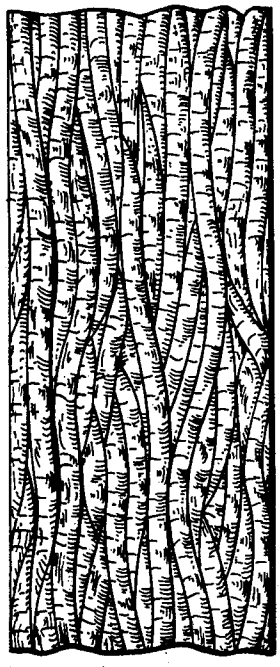


Fig. 2

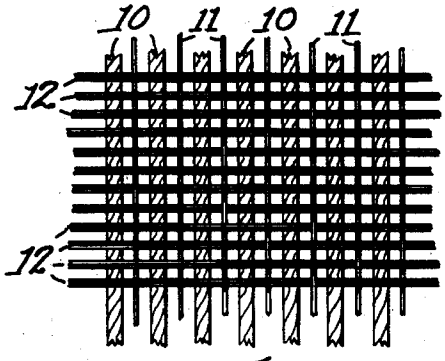


Fig. 4

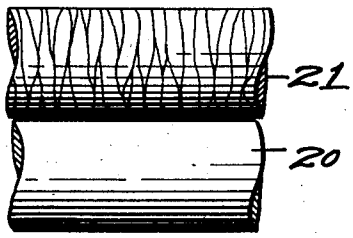


Fig. 3

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WOVEN ELASTIC FABRIC

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Application May 3, 1938, Serial No. 205,751

1 Claim. (Cl. 139—421)

This invention relates to woven elastic fabric and to means and methods for providing special ornamental surface effects thereon.

It is the general object of my invention to provide an elastic fabric of such composition and construction that it may be effectively embossed or otherwise permanently altered to simulate leather or to present other ornamental surface effects.

To the accomplishment of this object, I preferably provide a woven elastic fabric so constructed that at least one surface of the fabric is formed largely of a special yarn coated with lacquer or some other similar substance capable of receiving and retaining a surface impression, as of an embossing roll or plate.

A further object of my invention is to provide an improved method of making an embossed or surface ornamented woven elastic fabric.

My invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claim.

A preferred form of the invention is shown in the drawing, in which

Fig. 1 is a plan view of a portion of a piece of elastic fabric as woven;

Fig. 2 is a plan view of the same fabric after treatment to provide an ornamental effect;

Fig. 3 is a partial front elevation of a pair of embossing rolls; and

Fig. 4 is a plan view of an illustrative weave.

Referring to the drawing, I have indicated in Fig. 1 a portion of woven elastic web or fabric which has certain structural characteristics shown in illustrative form in Fig. 4. In this fabric, covered elastic warps **10**, relatively small non-elastic binder warps **11** and non-elastic weft threads **12** are interwoven in such manner that the weft threads **12** appear largely on the surface, while the covered rubber warp threads **10** are concealed within or at the back of the fabric.

It will be noted that the weft threads **12** largely float upon the surface of the fabric, as they are positioned in front of all of the rubber warp threads **10** and also in front of two-thirds of the binder warp threads **11**.

The weft threads **12** are non-elastic and are preferably formed of cotton fibres, spun and then coated with some substance such as lacquer which is relatively hard but not brittle, and which is capable of receiving and retaining a permanent impression or surface alteration.

It will be understood that the weave shown in Fig. 4 is illustrative only and that any other suitable weave may be substituted therefor, provided at least one surface of the fabric is formed largely of non-elastic yarn coated with lacquer or some other similar substance as above described. This coated yarn may constitute either the weft or some part of the warp, as is most desirable in weaving a particular fabric.

The back of the fabric may be similar in construction to the front surface of the fabric or it may be of such different construction as may be desired.

If the elastic web is to be used for a belt, it is desirable that the front and back surfaces both have a relatively firm and hard surface, like that indicated, for instance, in Fig. 4, but if the web is to be used for a shoe gore, it may be desirable that the back of the fabric shall present a relatively smooth and soft surface of a contrasting color, such as white.

Having formed my improved woven elastic fabric as above described, I then subject the web to an embossing operation, such as running the web between a feed roll **20** (Fig. 3) and an embossing roll **21**, the operation being performed under regulated pressure.

After this embossing operation, the surface of the fabric will be found to have undergone a marked and permanent alteration. A woven fabric as shown in Fig. 1, after embossing, may present the surface appearance shown in Fig. 2, designed to more or less closely simulate the appearance of leather. Such an embossed fabric is very ornamental in appearance and is particularly adapted for use in leather belts, shoe gores and for other apparel use in which combined elasticity and ornamental effect are desired.

It will be noted that the ornamental effect is achieved without applying any coating or surface treatment to the woven fabric but by acting directly on the separately coated threads **12**. Consequently, after the embossing operation, these threads are capable of relative separation when the fabric is stretched and will return to their original positions when released, without changing or destroying the ornamental effect impressed thereon.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claim, but what I claim is:

An ornamental elastic fabric formed of interwoven warps and wefts, the warps comprising rubber warp threads entirely buried below the face of the fabric and additional non-elastic binder warp threads, and the wefts consisting of non-

elastic yarn having an initial coating of a substance which is relatively hard but not brittle, said coating being applied to the weft yarn before said yarn is woven in the fabric and being capable of receiving and retaining a permanent surface alteration, and said coated wefts wholly overlying and concealing the rubber warp threads in said fabric and being collectively embossed with an ornamental design and being free for transverse movement relative to each other after such embossing.

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