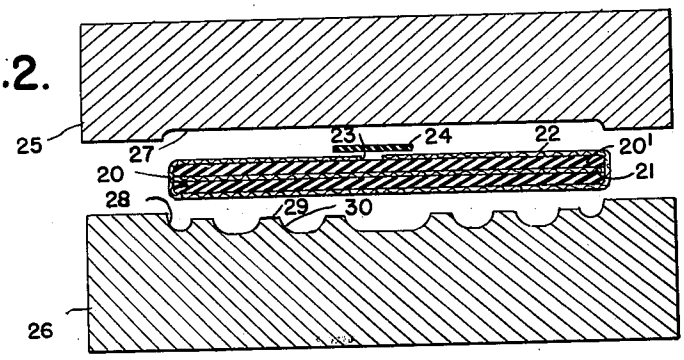
July 2, 1940. G. R. CUNNINGTON 2,206,078

ASSIST STRAP

Filed Oct. 10, 1938

FIG.2.



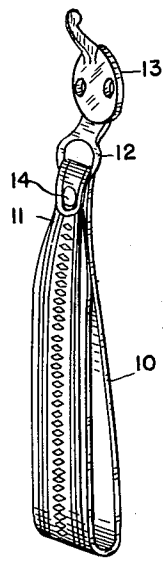
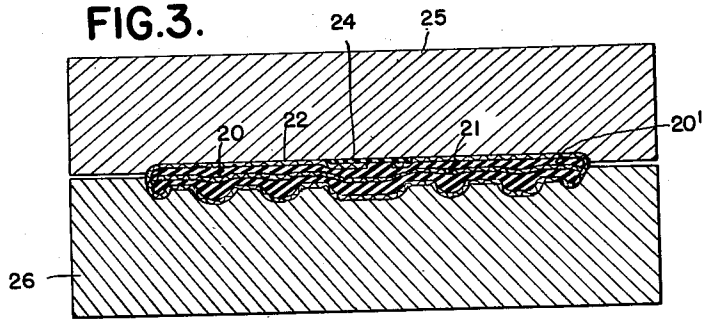




FIG.1.

FIG.3.



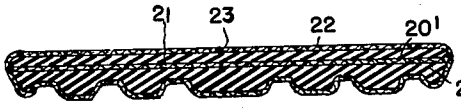




FIG.7.

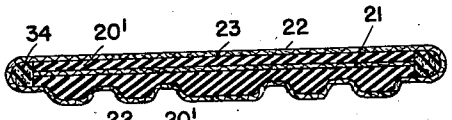



FIG.8.

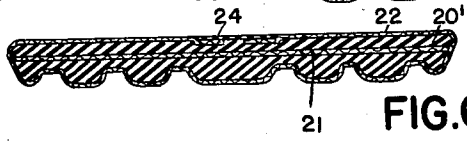
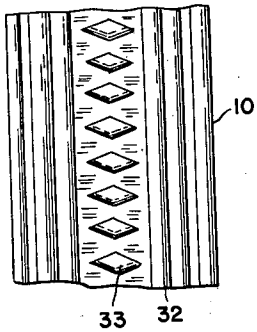



FIG.6.

FIG.4.



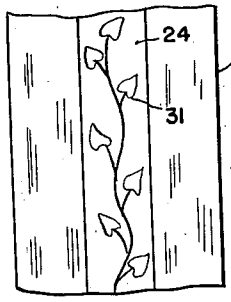




FIG.5.

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# UNITED STATES PATENT OFFICE

2,206,078

## ASSIST STRAP

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Application October 10, 1938, Serial No. 234,295

6 Claims. (Cl. 105—354)

This invention relates to assist straps and more particularly to an assist strap embodying rubberous material.

In the past, assist straps for motor vehicles have been manufactured by providing a relatively heavy canvas or other strip of material, applying padding material such as sponge rubber thereto and covering the same with a decorative fabric covering. This fabric covering has ordinarily been formed by providing a separate strip for the front and back and by providing additional binding pieces for the edges of the strap. As will be apparent, this involved a plurality of relatively expensive sewing operations with the result that the assist strap was relatively expensive.

It is an object of the present invention to provide an assist strap formed of a rubberous material covered with a single piece of covering fabric permanently bonded to the rubberous material.

It is a further object of the present invention to provide an assist strap which comprises rubberous material having reinforcing means therein in combination with a covering fabric vulcanized to the rubberous material.

It is a further object of the present invention to provide an assist strap of rubberous material covered with a finishing fabric, the rubberous material and the finishing fabric being deformed into a decorative design.

It is a further object of the present invention to provide an assist strap having a main portion of reinforced rubberous material, soft rubber padding material at the edges of said first mentioned rubberous material and covering fabric permanently bonded to the rubberous material.

Other objects of the invention will be apparent as the description proceeds and when taken in conjunction with the accompanying drawing, and wherein:

Fig. 1 is a perspective of an assist strap as mounted in a vehicle;

Fig. 2 is a vertical section through a die showing the elements of my assist strap assembled therein;

Fig. 3 is a view corresponding to Fig. 2 in which the die members have been brought into engagement with the assist strap;

Fig. 4 is a fragmentary elevation of my assist strap indicating the decorative effect imparted thereto;

Fig. 5 is a fragmentary rear elevation of my assist strap;

Fig. 6 is a transverse section through an assist strap embodying my invention;

Fig. 7 is a transverse section through a slightly different embodiment of my invention; and

Fig. 8 is a transverse section through an assist strap illustrating yet another embodiment of my invention.

The assist strap which forms the subject-matter of the present invention is illustrated at 10 in Fig. 1 and comprises a flat narrow strap, the ends of which may be reduced as indicated at 11 and passed through an eye 12 of attaching bracket 13. The assist strap may be secured in the eye 12 by suitable means, and in the present invention I have illustrated snap fastener 14 which interlocks the free ends of the assist strap.

The bracket and the method of attachment of the assist strap to the bracket form a part of the present invention, and the assist strap which is manufactured according to the invention disclosed herein is adapted to be supported in any suitable manner.

In Figs. 2 and 3 I have illustrated the method of manufacture as well as the elements which compose my assist strap. I provide a foundation 20 which comprises one or more strips 20' of uncured rubberous material. In the present instance I have illustrated these strips as two in number, although it will be understood that if desired a single strip of rubber may be employed, or if found preferable, a greater number may be combined. These strips of rubberous material 20' are ordinarily provided with a strip of sheeting indicated at 21. This sheeting may be of duck or other material and imparts the requisite strength to the finished article. Preferably the material is a textile material which permits permanent bonding of the rubberous material 20' thereto to form a unitary integral article when completed.

Merely by way of specific example, I have found that highly satisfactory results may be obtained by providing a strip of duck and abutting the same with a strip of rubberous material of the thickness of about .030 inch on one side and a strip of rubberous material of the thickness of about .015 inch on the other side. If this construction is employed, the thicker strip of rubberous material will be on the side which is to be deformed into a decorative design as subsequently described.

A covering 22 of fabric or other suitable material is placed around the rubberous material. According to one embodiment of my invention the ends 23 of the covering 22 are in spaced-apart relation. I provide an extremely thin strip of uncured rubberous material 24 which overlaps the spaced-apart confronting edges 23 of the covering material.

As shown in Fig. 2, the assist strap as assembled is placed between a pair of heated die members 25 and 26. The die member 25 is provided with a recess 27 to accommodate a portion of the assist strap and the die member 26 is provided with a corresponding recess 28 to receive a portion of the assist strap. In addition the recess 28 is provided with upstanding die portions

29 and intermediate depressed portions 30 which are adapted to form the assist strap or one surface thereof into a predetermined decorative design.

When the die members 25 and 26 are moved into juxtaposition as indicated in Fig. 3, the assist strap is deformed substantially as indicated in that figure.

The die portions 29 cause the rubberous material to mold and flow into the adjacent depressions 30 with the result that one face of the assist strap has a decorative design imparted thereto. At the same time the thin rubberous strip 24 is forced into the plane of the covering material 22 and serves to conceal the space between the confronting edges 23.

If desired, the portion of the die member 25 immediately above the strip 24 has recesses formed therein to impart a decorative effect to the strip 24. This is indicated best in Fig. 5 in which the strip 24 is shown as having a vine and leaf design 31 imparted thereto.

I have illustrated in Fig. 4 an example of a decorative design which may be imparted to an assist strap. This design comprises a plurality of longitudinally extending risers 32 and a series of formed diamond shaped beads 33 extending along the assist strap. The assist strap shown in section in Fig. 6 is one in which the strip of material 24 is applied to cover the spacing between the edges 23 of the covering material 22. I have found in certain instances it is preferable to omit the strip 24.

In Fig. 7 I have illustrated an assist strap in which the confronting edges 23 of the covering material 22 are brought into closely abutting relation. I have found that this may conveniently be done by a machine which brings the edges into exactly abutting relation and in such case it is therefore unnecessary to cover the seam thus formed with a strip of rubberous material. In all other respects, the assist strap shown in Fig. 7 is identical to that shown in Fig. 6.

In some cases I have found it desirable to add strips of a resilient material 34, such as for example sponge rubber. The strips 34, which may be of a cured sponge rubber, may be placed in abutting relation to the strips of rubberous material 20' and the assembly completed by wrapping the covering material 22 thereabout. This covering material 22 may have its ends 23 brought into abutting relation as shown, or the ends may be spaced apart as in the modification illustrated in Fig. 6.

The application of heat and pressure by the die members 25 and 26 vulcanizes the rubber and causes a permanent vulcanized bond between the rubber and the covering material 22. The designs imparted to one face of the assist strap are therefore permanently formed and the covering material 22 is permanently bonded to the decorative design as formed in the rubberous material. In addition in the event that a plurality of strips 22 are combined, the application of heat and pressure causes the rubberous material to flow through the interstices of the reinforcing strips 21 with the result that the whole is permanently bonded into a single unitary article.

Assist straps made according to the present invention are extremely strong and exhibit pleasing qualities as to softness and texture. They also offer marked advantages over devices known in the prior art in economies which result from their manufacture. The method of manufacture as described herein is extremely simple and may be carried on rapidly. The cost of labor is therefore reduced to a minimum and the cost of materials is substantially less than in assist straps previously known to the art.

Attention is again directed to the fact that the assist strap is completed without the necessity of any sewing operation, and it has been found in practice that the bond obtained between the covering material and the rubberous material is permanent. In addition, due to the resilient nature of the foundation of the assist strap the covering material exhibits superior wearing qualities.

The design imparted to the assist strap has the additional useful function of substantially roughening the surface, which permits it to be gripped more readily in use.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, but the appended claims should be construed as broadly as permissible in view of the prior art.

What I claim as my invention is:

1. An assist strap comprising a foundation of reinforced cured rubberous material, separate strips of relatively soft material at the edges of said foundation, and a cover permanently secured to said foundation with a vulcanized bond.

2. An assist strap comprising a foundation of reinforced cured rubberous material, separate strips of relatively soft material at the edges of said foundation, and a cover permanently secured to said foundation with a vulcanized bond, said relatively soft material being sponge rubber.

3. An assist strap comprising a foundation of cured rubberous material and a strip of reinforcing fabric, separate strips of relatively soft material at the edges of said foundation, and a cover permanently secured to said foundation with a vulcanized bond.

4. An assist strap comprising a body portion of strong fabric and dense vulcanized rubber, said body portion being of substantial thickness, a narrow strip of padding material at each edge of said body portion of substantially the same thickness, but of a much softer material, and a cover fabric surrounding said body portion and said narrow strips and vulcanized to said body portion.

5. An assist strap comprising a body portion of strong fabric and dense vulcanized rubber, said body portion being of substantial thickness, a narrow strip of padding material at each edge of said body portion of substantially the same thickness, but of a much softer material, said padding material being formed of sponge rubber, and a cover fabric surrounding said body portion and said narrow strips and vulcanized to said body portion.

6. An assist strap having a flat inner ply of vulcanized rubber, an outer fabric cover having confronting edges, said edges being recessed into said rubber ply, and a strip of rubber vulcanized over said confronting edges, the outer surface of said strip being substantially in the plane of said cover fabric.

GEORGE R. CUNNINGTON.