March 15, 1960 E. HAGENBUCH 2,928,432

TEXTILE RIBBONS

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Fig. 1

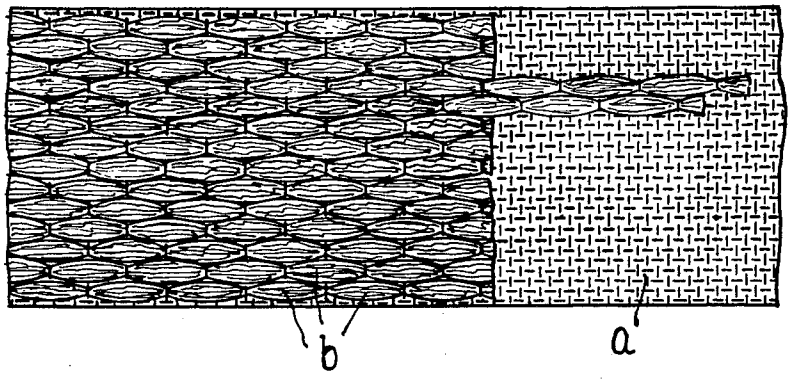
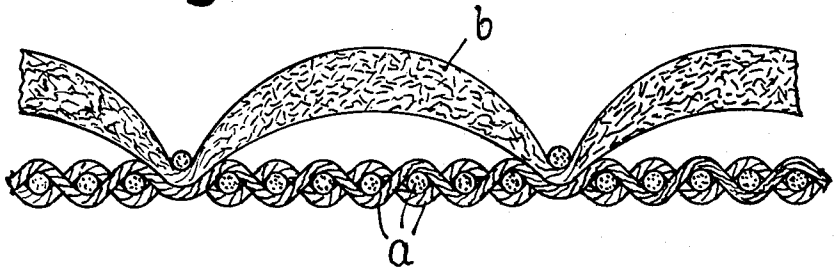


Fig. 2



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TEXTILE RIBBONS

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1 Claim. (Cl. 139—391)

The present invention relates to an unstretchable textile ribbon having a velours-type finish on one side thereof, such as a strap for brassières or petticoats, a bordering band or another ribbon for use in the manufacture of underwear and garments. As a rule, such ribbons are in direct contact with the wearer's skin and tend to irritate the latter. In order to avoid that disadvantage, textile ribbons have been made available which have on one side a padding in the form of a velvet or velours finish. That velvet covering is obtained by weaving two superimposed ribbons together and then separating them from each other by a cutting device. That process has the disadvantage that such ribbons have a relatively high price and that the velvet finish disappears relatively rapidly in use, due to wear or compression.

It is an object of this invention to eliminate these disadvantages. Contrary to the known processes the process for making a textile ribbon according to the invention comprises weaving a warp which consists of ordinary, unstretchable, non-elastic threads, e.g., of nylon, with a warp of highly stretchable crimped yarns in such a manner that the filling which ties in the warp consisting of ordinary threads during the weaving operation will at the same time also periodically tie in the crimped warp which is looped out on one of the surfaces by the reed when beating up. Thus a velours-type covering is obtained which forms the desired padding.

The term "highly stretchable crimped yarns" refers to yarns which have been made by any of the known processes for producing a crimp therein, e.g. by highly overtwisting, setting in that condition, and twisting back, or with the aid of interengaging toothed rolls or by buckling and compressing the threads under the action of heat and moisture in a crimping chamber. The crimp may also be produced by drawing the threads across a sharp edge. The highly stetchable crimped yarns consist preferably of polyamide fibers, e.g. of a hexamethylene diamine and adipic acid polycondensate, or of ε-caprolactam or of 11-aminoundecanic acid. The crimped yarns may also consist of other synthetic organic textile fibers, e.g. on a polyvinyl base (polyacrylonitrile, polyvinylchloride, etc.) or of polyesters (polyethylene glycol terephthalate).

An illustrative embodiment of a textile ribbon according to the invention is shown on the accompanying drawing.

Fig. 1 is a cross-sectional top plan view of that textile ribbon, part of the added warp elements of the ribbon having been removed to show the underlying base fabric.

Fig. 2 is a longitudinal sectional view of the ribbon.

The extile ribbon according to Figs. 1 and 2 has a base fabric *a* which consists of ordinary threads and has superimposed thereon a crinkled or crimped warp *b*. The loom which serves to make that ribbon is fed with two superposed warps. Whereas the warp consisting of ordinary threads is fed to the loom in a taut condition the crinkled or crimped warp is fed to the loom in a

relaxed condition. That latter warp is preferably drawn through the healds of the front shaft in order to enable said warp to be lifted as high as possible. The weave is chosen according to Fig. 2 so that, e.g., seven successive picks tie in the warp of the base fabric, e.g. like in 7-and-1 satin. The eighth pick ties in the warp threads of the base fabric as well as the threads of the crinkled or crimped warp. Thus the filling also ties in in addition to the warp consisting of ordinary threads the highly stetchable crimped warp in a periodic sequence. The loom could also be set to tie in both warps periodically with, e.g., two picks instead of only one. When the crimped warp, which is disposed as highly as possible over the shed and is taut in that condition, as has been mentioned hereinbefore, is lowered, the reed in beating up will loop the relaxing highly stretchable crimped warp out on one of the two surfaces of the ribbon. The degree of that looping out effect will depend on and vary with the tension of the crimped warp. During that operation one property of the crimped warp is important. A high overtwist, setting and then backtwisting the polyamide fiber will result in a highly stretchable crimped yarn, which is stretchable in its longitudinal direction. This property is utilized here as follows:

By lifting the resilient crinkled or crimped warp as highly as possible, as has been mentioned hereinbefore, the several threads of said warp are tensioned, causing a contraction of the cross-section of the fiber. The lowering of these tensioned threads will cause them to relax. When the reed of the loop performs its beating-up operation at this time, these relaxed threads will be looped out, whereby the desired velours effect is achieved. The tie-in of the base warp is preferably chosen so that the crinkled warp is tied in below the threads of the base warp so that a smooth effect is obtained on the rear side.

Using the process as described a textile ribbon according to the invention can be produced which is much less expensive than the previously known ribbons of that type. The plush effect, which will be preserved even after prolonged use and repeated washing, will cause the ribbon to lie gently on the skin in a pleasing manner and will resist sliding of the ribbon on the skin to a considerable degree.

What is claimed is:

An unstretched textile ribbon having a velours-type finish on one side thereof, consisting essentially of a base fabric consisting of non-elastic taut warp and filling threads, and highly stretchable crimped warp threads of synthetic organic material, said highly stretchable crimped warp threads being tied into said base fabric by at least one of said filling threads at points spaced at regularly recurring periodic intervals greater than two picks, said highly stretchable crimped warp threads being looped out on one side of said base fabric between the points at which it is tied into said base fabric for forming said velours-type finish.

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