

Dec. 23, 1941.

S. D. BLUE

2,266,953

STRAP

Filed June 30, 1938

2 Sheets-Sheet 1

Fig. 1

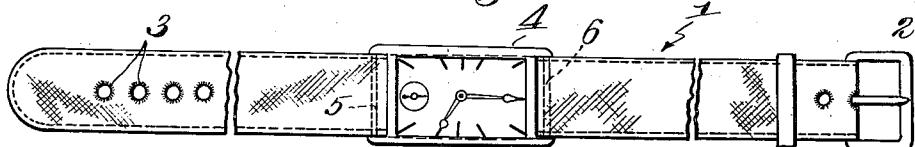


Fig. 2

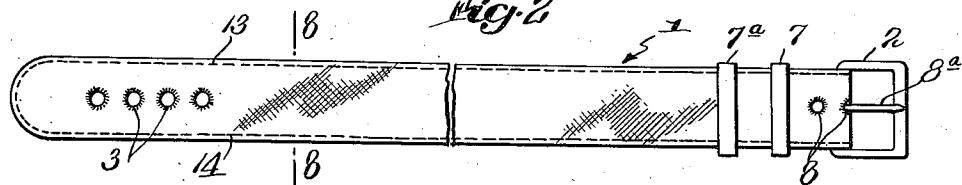


Fig. 3



Fig. 4

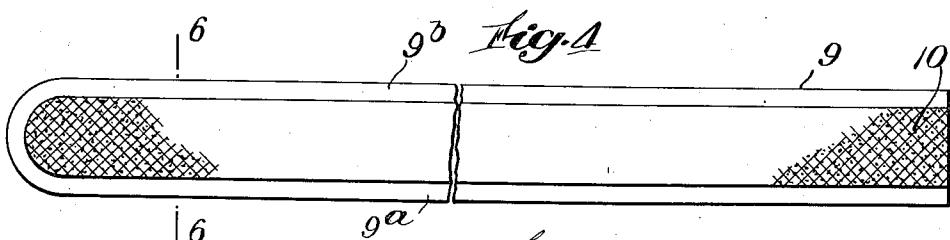


Fig. 5

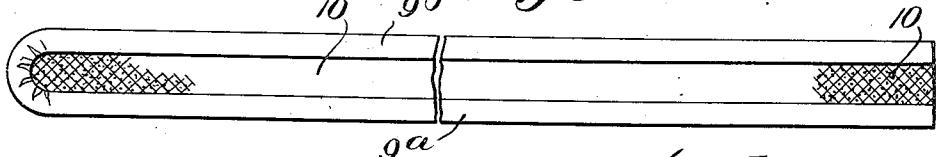


Fig. 7

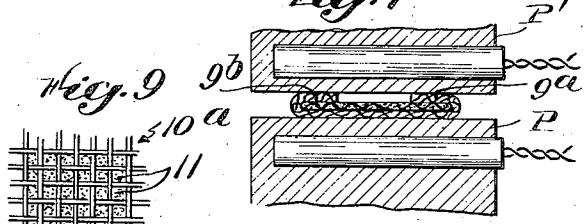


Fig. 6



Fig. 9

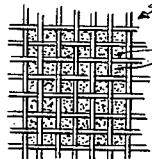


Fig. 8



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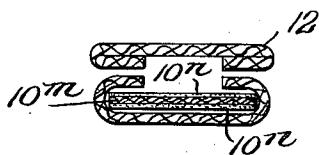
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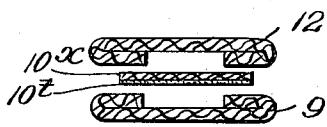
Filed June 30, 1938

2 Sheets-Sheet 2

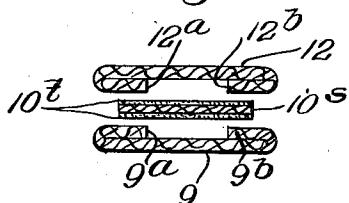
*Fig. 10*



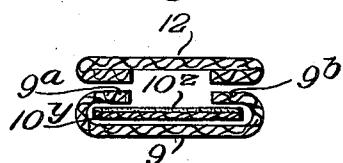
*Fig. 12*



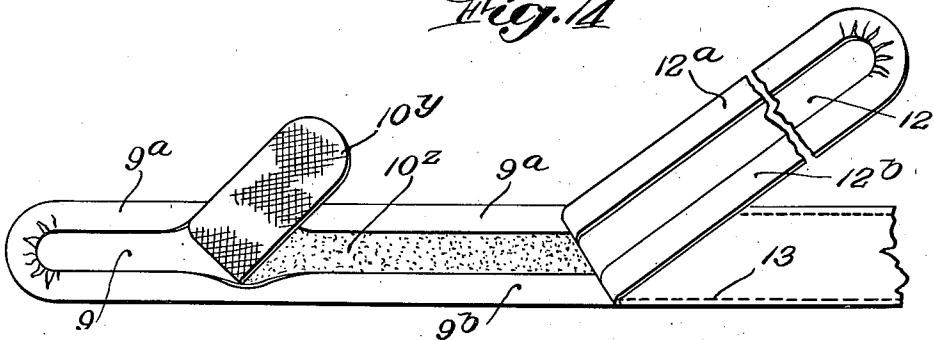
*Fig. 11*



*Fig. 13*



*Fig. 14*



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Filed Oct. 15, 1935.

## UNITED STATES PATENT OFFICE

2,266,953

## STRAP

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Application June 30, 1938, Serial No. 216,746

3 Claims.

(Cl. 224—4)

This invention pertains to straps, for example, straps such as are employed for securing a wrist watch to the wrist of the wearer, it being understood, however, that a wrist watch strap is thus specifically referred to as an instance of the utility of the invention and without limiting intent.

Wrist watch straps are commonly of substantial width and are usually made of leather or artificial leather or sometimes of heavy textile material. A solid strap of leather, such as is used for this purpose, while quite pliable longitudinally, has substantial transverse stiffness under normal conditions and thus reliably distributes the pressure over such an area of the wearer's wrist as to avoid discomfort, even though the strap be drawn tight enough to hold the watch in the desired location. Straps of textile material are made heavy enough to approximate the transverse stiffness of leather. However, both leather and ordinary textile materials are moisture absorbent, and in hot water become soiled and unsanitary after a very short period of use. Moreover, when wet with perspiration both leather and textile straps become limp and cling to the skin with consequent discomfort to the wearer and sometimes even cause actual chafing of the wrist. On the other hand, solid leather suitable for such use tends to become stiff and harsh when washed, while the usual textile material becomes ropey and never wholly regains its original characteristics or appearance after washing.

The above-noted defects are commonly characteristic of straps employed as belts, either for the support or ornamentation of garments, for instance, women's dresses, and it is contemplated that for such purposes the present invention is of value, as well as for the specific utility hereinabove referred to.

Objects of the present invention are to provide a strap having the desirable longitudinal pliability and transverse stiffness of leather, but which is but slightly absorbent of moisture and which, when soiled, may readily be washed without injuriously affecting its original characteristics or appearance. A further object is to provide a wrist watch strap of good, durable and pleasing appearance and which may be made at a cost not substantially exceeding textile straps of usual construction. A further object is to provide a strap which may readily be made in any desired color or combination of colors; whose inner and outer surfaces may, if desired, be of different materials; and which, while amply

strong, is light in weight and comfortable to the wearer.

Other and further objects and advantages of the invention will be pointed out in the following more detailed description and by reference to the accompanying drawings, in which

Fig. 1 is a plan view, partly broken away, showing the completed strap with a watch mounted thereon;

Fig. 2 is a view similar to Fig. 1, but showing the strap without the watch;

Fig. 3 is a plan view showing the strap when completed but before the application of the buckle;

Fig. 4 is a plan view illustrating one of the earlier steps in the process of making the strap;

Fig. 5 is a view similar to Fig. 4 illustrating a later stage of the process;

Fig. 6 is a section on the line 6—6 of Fig. 4;

Fig. 7 is a fragmentary diagrammatic view illustrating the step of fusing the stiffener element to the face ply of the strap;

Fig. 8 is a section substantially on the line 8—8 of Fig. 2, but showing the several elements of the strap much magnified in thickness;

Fig. 9 is a fragmentary diagrammatic large scale plan view showing a portion of the stiffening ply or layer.

Figs. 10 to 13 are diagrammatic sections, to large scale, in general similar to Fig. 8, illustrating modified constructions; and

Fig. 14 is a fragmentary perspective view, showing the several constituent elements of a preferred form of strap.

Referring to the drawings, the numeral 1 designates the strap as a whole, the strap being provided at one end with a buckle 2 of usual type and at its other end with a series of openings 3 designed selectively to receive the tongue of the buckle. The strap is designed for association with the wrist watch 4 by threading the end of the strap between the back of the watch and the pins or bars 5 and 6 usually provided at the opposite ends of a wrist watch, the frictional engagement of the strap and watch being depended upon to hold the watch in proper position.

While the above mode of mounting the watch on the strap is that commonly employed, it is contemplated that a strap, made generally as hereinafter described, may be divided and each end portion may then be secured independently to one of the bars 5 and 6, respectively, of the watch, this being another common mode of attaching a strap to a watch. When hereinafter reference is made to the "strap" and to the

method of making it, it is to be understood that the term strap is intended to include either a single length strap such as illustrated in Fig. 1, or a strap comprising two independent portions, each independently attached to the watch.

In Fig. 3 the rear side of the strap is shown before attachment of the buckle thereto, the end of the strap which receives the buckle being provided with the loop 7 through which the other end of the strap is threaded to form a bight for receiving the inner bar of the buckle. This end of the strap is furnished with at least one opening 8 through which the tongue 8a of the buckle extends. In accordance with this invention, it is preferred to provide a plurality of these openings 8 so that by selectively engaging the tongue of the buckle with one or another of these openings, the effective length of the strap may be varied, independently of the adjustment provided by the openings 3 at its opposite end.

After the buckle has been applied, the loop 7 appears at the front face of the strap for receiving the surplus material of the opposite or free end of the strap and, if desired, a second loop 7a may be furnished as an additional means of holding the free end of the strap in place.

In the above particulars the strap is substantially like straps heretofore made of leather or textile fabric, with the exception of the provision of a plurality of the openings 8, a feature which is believed to be new in the present construction.

In making the strap (as illustrated in Figs. 4 to 9), there is provided a ribbon-like length of material 9, for example textile fabric; very thin and pliable leather, artificial leather; or the like; such length of material being substantially wider than the width of the finished strap. There is also provided a length of stiffening material 10, also ribbon-like in its shape but somewhat narrower than the facing strip 9, so that when disposed symmetrically upon the latter, marginal portions 9a and 9b of the facing strip 9 are exposed at opposite edges of the stiffener strip 10. This stiffener strip is made from a stiffening material 10a (Fig. 9), preferably of reticular fabric such as textile material having its interstices filled with an impregnant binding and stiffening substance which is normally dry and nonadhesive but which becomes adhesive when subjected to heat and pressure, preferably without recourse to pretreatment with a solvent. It has been found that textile fabric impregnated with a synthetic resin, for example, a vinyl polymer of a thermoplastic character is well suited for the intended purpose, although other synthetic resins than the vinyl polymer type, as well as certain derivatives of cellulose may be employed. Likewise, it is contemplated that the reticular base fabric may be other than a textile material, for instance, a heavy perforated paper, perforated artificial leather, or the like.

After this stiffener strip has been prepared and assembled with the facing ply 9, as shown in Fig. 4, the margins 9a and 9b of the facing ply are turned in over the edges of the stiffener strip 10, the marginal material at the rounded or free end of the strap being more or less pleated in so turning it in, and then the assembled parts are placed upon the lower platen P of a hot press and the upper platen P' is brought down with considerable pressure and the parts are permitted to remain in this position until the impregnating material 11 within the interstices of the stiffener strip is caused to exude and firmly to bind the stiffener fabric to the main body of the facing ply

9 as well as to the inturned margins 9a and 9b of the latter. The assembled and fused parts are then removed from the press and a rear ply 12 of suitable material, for example textile fabric, thin leather or the like,—preferably having its margins 12a and 12b folded inwardly, is then disposed in registry with the previously assembled parts and with the folded-in margins 12a and 12b overlying the folded and fused margins 9a and 9b; and then with the parts thus assembled, they are united, for example, by means of sewed seams 13 and 14 extending longitudinally of the strap.

In Fig. 8, wherein the parts are shown to greatly exaggerated scale, particularly as to thickness, there appears a cavity between the rear ply 12 and the stiffening strip 10, but in actual practice this cavity is of substantially inconsequential thickness since the thickness of the rear ply 12 is usually very small, and, in the finished strap, the material of the rear ply which bridges the space between the edges of its inturned margins merely sinks in slightly, forming a slight longitudinal channel in the rear surface of the completed strap. After the strap has been completed to this extent, the openings 3 and 8 are formed and may be finished in any desired manner, for example, by buttonhole stitching or by the insertion of eyelets, if preferred.

While, as above described, the fusing operation is performed before assembly of the rear ply 12 with the other parts, it is contemplated that the rear ply 12 may be assembled with the facing ply 9 and the stiffener strip before fusion. In this event, the rear ply 12 may, to some extent at least, become fused to the stiffening strip along the central part of the strap. It is further contemplated that instead of the stitched seams 13 and 14, the rear ply may be secured in position by some suitable and powerful adhesive such, for example, as one of the synthetic rubbers or by the use of synthetic resin or the like.

After the strap has been completed to the extent indicated in Fig. 3, the buckle-receiving end 45 of the strap is then threaded through the buckle, the tongue of the buckle is passed through one of the openings 8, and the free end of the strap is passed through the loop 7 so as to form the buckle-receiving bight, thus completing the strap.

Since the front and rear surfaces of the strap are made from independent pieces of material 9 and 12, respectively, it is readily possible to make the inner and outer surfaces of different materials or of different colors, thus adding to the 55 attractive characteristics of the strap as prepared in accordance with the present invention.

In the arrangement diagrammatically illustrated in Fig. 10, the facing strip 9 and the rear ply 12 are substantially identical with those shown in Fig. 8 (and previously described), but the stiffening member comprises a strip 10m of flexible sheet material, for example textile fabric, paper or the like, having on each side a surface coating 10n of a stiffening adhesive substance such as that suggested as suitable for impregnation of the fabric 10a of Fig. 9. While such a coated fabric may be somewhat thicker than an impregnated fabric carrying the same amount of adhesive material, it may be preferred under some circumstances.

In Fig. 11 a further arrangement is indicated in which the facing ply 9 and the rear ply 12 are substantially like those previously described but the stiffening member 10s, coated on opposite sides at 10t (like the stiffener shown in Fig. 10)

or, if preferred, impregnated (as shown in Fig. 8), is disposed to overlie the folded-in edges 9a and 9b of the front ply 9 and directly to underlie the folded-in edges 12a and 12b of the rear ply 12. With this arrangement the fusing operation is preferably so carried out as to fuse the folded edges 9a and 12a to the stiffener and to fuse the folded edges 9b and 12b to the stiffener. However, the extreme outer edges of the folds are not substantially stiffened and remain quite flexible, thus resisting wear better than when the stiffening substance flows into the crease of the fold itself, as it usually does in the arrangements of Figs. 8 and 10.

In Fig. 12 a slight modification of the construction of Fig. 11 is shown, differing from the latter arrangement in having a stiffening adhesive coating 10t at the underside only of the stiffener member 10x. In this arrangement the fusing operation unites the stiffener member 10x to the upper surface of the folded-in edges 9a and 9b of the ply 9 and also to the central part of the latter ply only, but leaves the extreme edges of the folds themselves flexible as in the construction of Fig. 11.

In Figs. 13 and 14 a further and preferred arrangement is illustrated. The facing ply 9 and the rear ply 12 are substantially as shown in Fig. 8, but the stiffener member 10y is coated at 10z only at its upper surface. In the fusing operation (which preferably is performed after the parts have been sewed together at 13), the stiffener member 10y is adhesively united to the inner surfaces of the folded-in edges 9a and 9b of the front ply and to the central part of the rear ply 12 but does not adhere to the central portion of the front ply nor is it in sufficient amount to extend into the extreme edges of the folds of the latter ply. This provides a very flexible construction and one which is highly wear resistant.

While one desirable embodiment of the invention has herein been illustrated by way of example, and a preferred mode of making such embodiment, it is to be understood that the invention is regarded as broadly inclusive of all equivalent constructions and modes of procedure and that the sequence of steps employed in practicing the process may be varied without departing from the spirit of the invention.

I claim:

1. A washable strap comprising two superposed woven ribbons each having its margins folded

inwardly with a wide gap between the opposed edges of the margins, the two ribbons being secured together with the folded margins of one ribbon against the folded margins of the other ribbon, and between said ribbons a stiffening tape which is wider than said gap so that its edges overlap said folded margins, the tape being adhesively secured to the inner face of one ribbon under its folded margins and being unsecured to the other ribbon throughout the width of said gap to leave, throughout the length of the strap, an interior air space which is at least as deep as the combined thicknesses of the folded margins of the two ribbons.

2. A washable strap comprising two superposed woven ribbons each having its margins folded inwardly with a gap between the opposed edges of the margins, the two ribbons being secured together with the folded margins of one ribbon opposed to the folded margins of the other ribbon, and between said ribbons a stiffening tape which is wider than said gap so that its edges overlap said folded margins, the opposite edges of the tape being disposed beneath the inwardly folded margins respectively of one of the ribbons, the tape being adhesively united to the inner face of said latter ribbon and being free from the other ribbon throughout the width of said gap so as to leave throughout the length of the strap an interior air space whose depth is determined by the combined thicknesses of the folded margins of the two ribbons.

3. A washable strap comprising two superposed woven ribbons each having its margins folded inwardly with a gap between the opposed edges of the margins, the two ribbons being secured together with the folded margins of one ribbon opposed to the folded margins of the other ribbon, and between said ribbons a stiffening tape which is wider than said gap so that its edges overlap said folded margins, the opposite edge portions of the tape being embraced by the opposite edge folds respectively of one of the ribbons, one side of the tape being adhesively united throughout its entire width to the inner face of said latter ribbon, the opposite face of the tape being devoid of adhesive and free from the other ribbon throughout at least the width of the gap, thereby leaving, throughout the length of the strap, an interior air space whose depth is defined by the combined thicknesses of the folded margins of the two ribbons.

SIDNEY D. BLUE.