July 25, 1939. F. EATON 2,167,350

WEARING APPAREL

Original Filed May 22, 1936

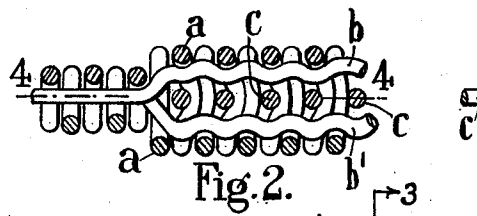


Fig.2.

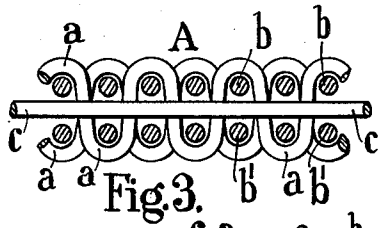


Fig.3.

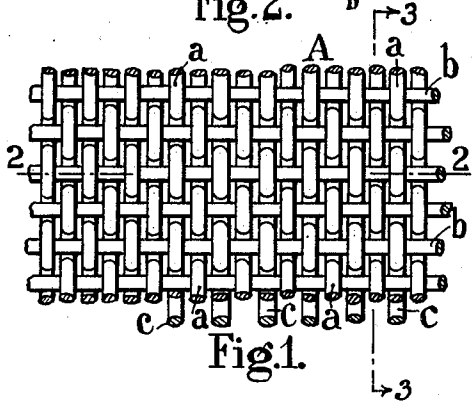


Fig.1.

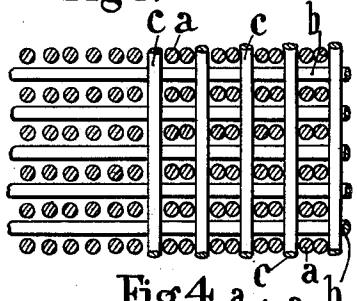


Fig.4.



Fig.6.

Fig.5.

INVENTOR
Frank Eaton
BY
E. C. Sanborn
his ATTORNEY

Patented July 25, 1939 2,167,350

UNITED STATES PATENT OFFICE

2,167,350

WEARING APPAREL

Frank Eaton, Manchester, England

Original application May 22, 1936, Serial No. 81,139. Divided and this application July 23, 1937, Serial No. 155,166. In Great Britain June 7, 1935

1 Claim. (Cl. 139—385.5)

This invention relates to wearing apparel of the class adapted to be laundered, such as collars, shirt fronts, cuffs, and the like. An object of the invention is the provision of a semi-stiff collar or other article of launderable apparel which presents and retains its desired stiffness without the use of starch or other artificial stiffener and despite repeated launderings.

The invention further provides a collar or other article of launderable apparel which not only preserves a desirable appearance, stiffness and flexibility, but which requires no lining or facing or backing cloth. The apparel provided by this invention is furthermore highly resistant to stretching and shrinkage in laundering.

A further more specific object of the invention resides in the provision of an article of apparel such as a collar, cuff, or shirt front of multiple ply cloth which can be woven with colored stripes or checks identical in width and spacing to those which can be produced in a single ply cloth used for the main portions of the shirt.

Other objects and advantages of the invention will be hereinafter described and claimed.

This application is a division of my application Serial Number 81,139, filed May 22, 1936.

In the accompanying drawing:

Fig. 1 is a plan view showing a fabric of which the apparel articles forming the subject of this invention is composed, the warp and weft yarns of said fabric being greatly enlarged.

Fig. 2 is a section on line 2—2 of Fig. 1.

Fig. 3 is a section on line 3—3 of Fig. 1.

Fig. 4 is a horizontal section on line 4—4 of Fig. 2.

Fig. 5 is a perspective view showing a shirt having a collar, cuff, and bosom constructed of the fabric illustrated in Figs. 1—4.

Fig. 6 is a section on line 6—6 of Fig. 5, greatly enlarged.

The collar, cuff, or the like, forming the subject of my invention, is formed of a cloth A having warp yarns *a* which are woven into both the face layers by weft yarns *b* b^1 one of which *b* appears in one face of the cloth and the other b^1 on the other face. The two weft yarns *b* b^1 are separated from each other by further warp yarns *c* which do not appear in either face of the cloth and which are maintained at such a tension in the loom during weaving that they are not woven into the cloth but extend therethrough in straight lines their presence adding body to the cloth and causing the weft yarns *b* b^1 to lie vertically one above the other therein. The effect of the warps *c* can be seen from Fig. 2 where in the selvedge they have been omitted which allows the wefts *b* b^1 to lie side by side instead of vertically one above the other thereby completely altering the structure of the cloth.

In Fig. 5 the shirt collar C, cuffs D and reinforced shirt front E are constructed of the cloth A described above, while the other or main portions B of the shirt are of single ply cloth such as ordinary poplin. The section shown in Fig. 6 provides a comparison between the weave of the cloth A and that of the poplin cloth B. The collar C may be permanently attached to the shirt or may be detachable therefrom.

Collars or other articles of apparel produced from the cloth A are of the semi-stiff variety which may be laundered without the use of starch or other artificial stiffener. The additional weight, over single ply poplin cloth, due to the additional length of take up of the warp yarns *a*, the second weft yarns b^1 and the warp yarns *c* enables the collars, fronts, cuffs, or the like, made from cloth A, to retain their shape without starch and increases their wearing qualities. The cloth can be woven by employing only two warp beams instead of the three normally employed for a double cloth.

A collar or other article of apparel made from the cloth A presents the further advantage that no lining or facing or backing cloth is required, and there is no necessity of laminating separate fabrics to provide the desired stiffness. A single layer of the fabric is sufficient. In addition to the fact that cloth A woven as above described has greater rigidity than multiple ply cloths hitherto proposed, it imparts to collars and the like desirable resistance to shrinkage or stretching under laundering conditions.

It is further to be noted that a collar, cuff, front, and the like, constructed of the fabric A, can be identical in appearance and pattern with the poplin cloth forming the main portion of a shirt. The single ply plain poplin cloth forming the main shirt portion is woven with the warp threads coming to the face of the cloth on alternate picks of the shuttle. Colored stripes may be formed at intervals longitudinally of the cloth by a portion of the warp ends being dyed to the color or colors required for the stripes, or in addition colored stripes may be formed at intervals across the piece by a portion of the weft threads being dyed to the color or colors required for the stripes in the case of checks. Usually the warp yarns are finer than the weft yarns.

Multiple ply cloths for semi-stiff collars and the like have been formed of two or more single

ply cloths bound together during weaving by interweaving or binding warps which appear in both the face and the back of the cloth. The presence of these binder warps which come to the face of the cloth on each pick of the shuttle renders the face different in texture from that of the plain cloth forming the main portion of the shirt and prevents colour woven stripes in the multiple ply cloth from being identical in spacing and appearance to those in the poplin cloth.

In a multiple ply cloth as hitherto proposed in the event of a binding thread having to be dyed in order to make up a design to be matched, the stripe forms a continuous line which cannot under any circumstances be matched on a poplin cloth used for the main portion of the shirt. Consequently the multiple ply cloth used for fronts, cuffs or collars is not an identical match to the shirt, and is therefore not as acceptable to the public and is very difficult to make owing to an irregular arrangement of warps for dyeing.

The cloth A for the collars and the like of the present invention is woven from warp yarns *a* and weft yarns *b* b^1 similar in counts with those employed on the poplin cloth which it is desired to match and the resulting cloth, although naturally heavier, is in appearance and pattern identical to the poplin cloth. In the cloth A each warp thread comes to the surface of the cloth on each alternate pick of the shuttle thereby enabling colored stripes to be formed identical in spacing and appearance with those in the poplin cloth to be matched.

A collar or the like formed of the cloth A is furthermore reversible. Color woven stripes which appear on the face also appear in identical form on the back.

The terms and expressions which I have employed are used as terms of description and not of limitation, and I have no intention, in the use of such terms and expressions, of excluding any equivalents of the features shown and described or portions thereof, but recognize that various modifications are possible within the scope of the invention claimed.

I claim:

A shirt formed from striped poplin cloth in combination with a collar of identical appearance comprising groups of warp yarns which come to the surface on alternate picks of the shuttle and which appear alternately in each face of the fabric, further groups of warp yarns contrasting with the first-mentioned groups of warp yarns and alternating therewith, said further groups of warp yarns coming to the surface on alternate picks of the shuttle and appearing alternately in each face of the fabric, two layers of weft yarns with which each warp yarn of all the groups are interwoven, and warp yarns woven into the fabric and extending in substantially straight lines intermediate the two layers of weft yarns whereby a striped multiply fabric is obtained with the longitudinal stripes thereon identical in width and spacing with those on the single ply plain weave striped poplin shirt.

FRANK EATON.