

Oct. 31, 1944.

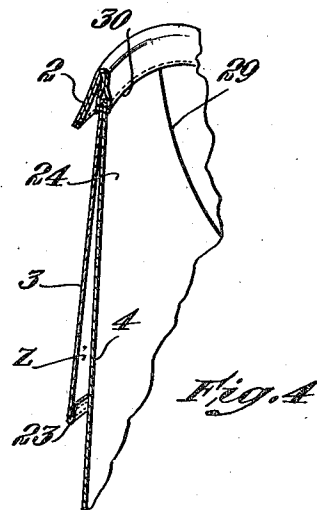
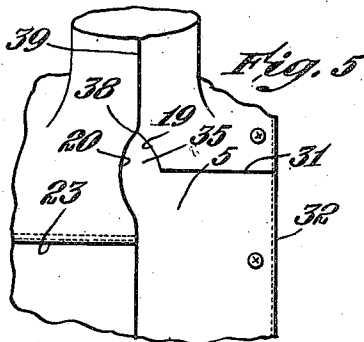
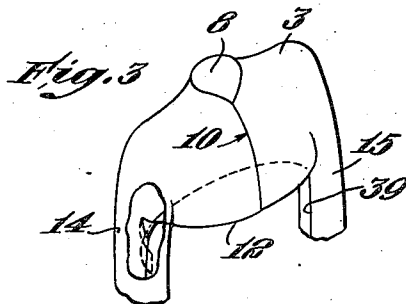
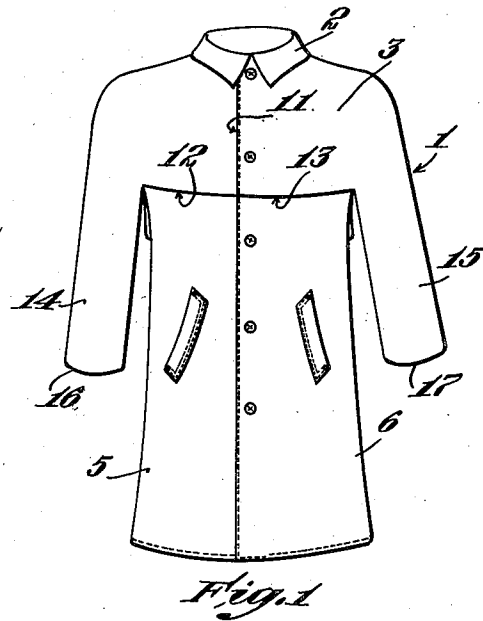
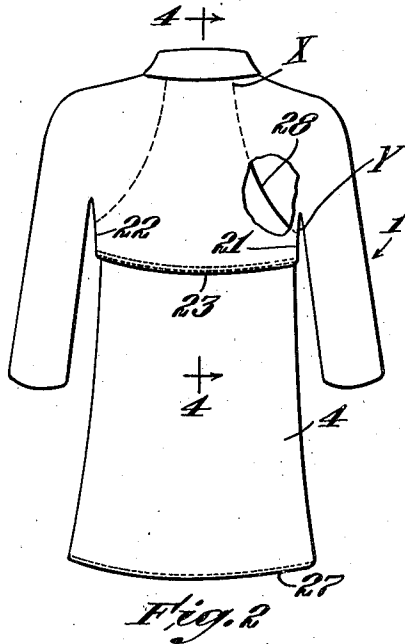
J. T. CALLAHAN ET AL

2,361,380

OUTER GARMENT

Filed Jan. 21, 1943

2 Sheets-Sheet 1



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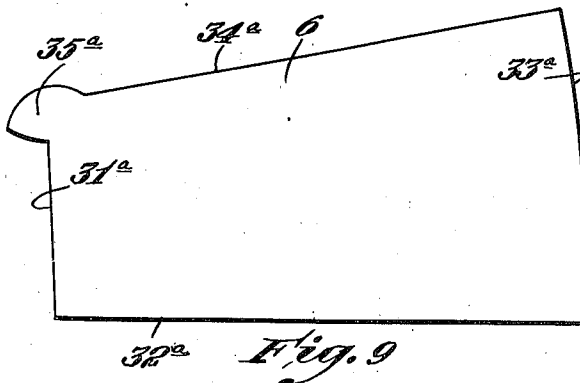
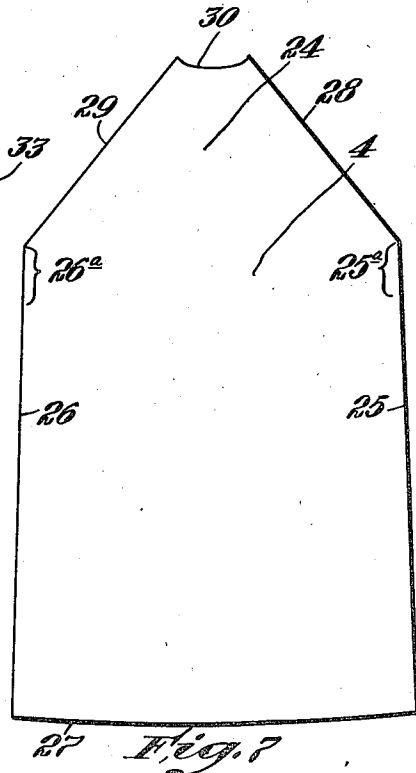
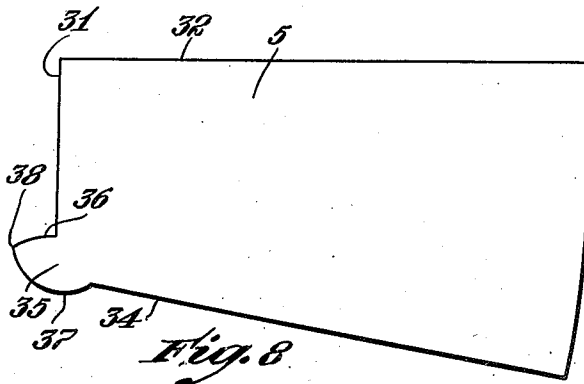
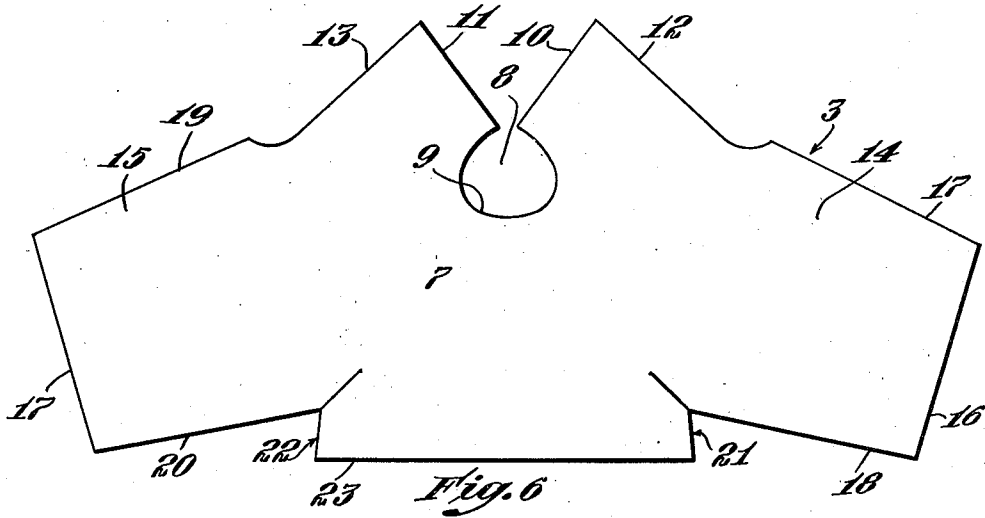
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OUTER GARMENT

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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OUTER GARMENT

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Application January 21, 1943, Serial No. 473,074

2 Claims. (Cl. 2—87)

This invention pertains to apparel and relates more particularly to waterproof or water-repellent outer garments, although in some of its aspects it is of broader utility. Such garments are usually made of textile fabric coated or impregnated with a rubber compound or with an oxidized oil. Because of the impervious nature of such materials these garments retain the heat of the body and thus become very uncomfortable when worn in warm weather or in tropical climates. It has heretofore been customary to provide such garments with ventilating openings of one kind or another but these apertures are quite small and must be so located or devised as to prevent entrance of water, and heretofore the ventilation thus furnished has been quite inadequate.

Since the shortage of natural rubber has made it unavailable for use in manufacturing raincoats or the like, the makers have resorted to the use of other water-repellent materials, for instance the synthetic resins, among them vinyl polymers. While these materials are reasonably effective as water-repellent agents it has been found difficult so to unite pieces of material thus waterproofed as to make permanent leakproof seams. When using rubber as the waterproofing medium, various rubber compounds, latex preparations, etc., were commonly employed either alone, to cement together the constituent parts of the garment and thus form the seams, or as adjunctive to sewed seams to insure against leakage, but no really satisfactory means or method has heretofore been devised whereby parts of garments waterproofed with the synthetic rubbers or resins can be united so as to provide a reliable, leak-tight joint.

One object of the present invention is to provide a waterproof garment so constructed as to furnish adequate ventilation. A further object is to provide a sleeved garment so constructed as completely to eliminate exposed seams at the shoulder portions of the garment where leakage is most difficult to overcome. A further object is to provide a garment so designed that it may be made from a substantially lesser number of pieces than has been the customary practice, thus reducing the cost in cutting, handling and assembling, but without substantial sacrifice of style or fit and at the same time providing for more than usual freedom of movement to the wearer.

Other and further objects and advantages of the invention will be pointed out in the fol-

lowing more detailed description and by reference to the accompanying drawings wherein:

Fig. 1 is a diagrammatic front elevation of an outer garment constructed in accordance with the present invention;

Fig. 2 is a rear elevation, with certain parts broken away, of the garment shown in Fig. 1;

Fig. 3 is a diagrammatic perspective view illustrating the yoke member of the garment, omitting the other portions and with certain parts broken away;

Fig. 4 is a fragmentary section, to larger scale, substantially on the line 4—4 of Fig. 2;

Fig. 5 is a fragmentary diagrammatic view to larger scale, showing the construction of the underarm portion of the garment, the sleeve extending vertically;

Fig. 6 is a plan view, to small scale, of the blank or piece of material which constitutes the yoke and sleeves of the garment;

Fig. 7 is a similar view of the back member of the garment; and

Figs. 8 and 9 are similar views of the right and left front members respectively of the garment.

Referring to the drawings, the numeral 1 designates the completed garment which is here shown in a diagrammatic manner and without attempt to illustrate the natural draping of the fabric or usual and minor details of construction. This garment, except for the collar 2, and customary elements of trim, for example pockets and pocket stays, buttons and button fly, facings and similar reinforcements, consists solely of four pieces of material, to wit, the yoke member 3, the back member 4, and the two front members 5 and 6. The yoke member (Fig. 3) consists of a single integral piece of material. This material is of any desirable character useful in making the intended type of garment, for instance, if the garment be of waterproof or water-repellent type, the material may be a textile fabric impregnated, sprayed, or coated with a water-resistant or water-repellent medium, for instance rubber or rubber compound, if available, or one of the synthetic resins or rubber substitutes, oxidized oil in fact any other suitable material.

This yoke member 3 comprises a central or shoulder portion 7 having in its forward part a neck opening 8 bounded by a curved edge 9 which intersects the forwardly divergent straight edges 10 and 11 respectively, the latter, in the completed garment, constituting upper portions of the front closure. These edges 10 and 11 in-

tersect, at substantially right angles, the edge portions 12 and 13 respectively, which, in the completed garment, extend substantially horizontally at about the level of the armpits, and to which are secured the upper edges of the right and left front members 5 and 6 respectively. This yoke piece or blank 3 also comprises the sleeve portions 14 and 15, said sleeve portions being integral with the central portion 7 and terminating at edges 16 and 17 designed to form the wristband ends of the sleeves. The sleeve members 14 and 15 have longitudinal edges 17 and 18, and 19 and 20, respectively, and in the completed garment the edges 17 and 18 are united by a seam which extends from the armpit down to the wrist edge 16 at the inner side of the sleeve. Likewise the edges 19 and 20 of the sleeve member 15 are united by a similar seam. Since the sleeve members are integral with the central or shoulder portion 7 of the yoke member, and since the only longitudinal seams in the sleeves are those which unite the edges 17 and 18 and the edges 19 and 20, respectively, the shoulder portions of the completed garment are wholly devoid of exposed seams, as illustrated for example in Fig. 3. Thus, regardless of the type of material which may be employed, since there are no exposed seams at the shoulder portion, there is no danger of leakage of water into the upper portion of the garment by reason of any insecure seams or joints.

The yoke member 3 comprises the rearwardly extending edge portions 21 and 22, respectively, at opposite sides, which in the completed garment are permanently united to the upper portions of the back member, the edges 21 and 22 terminating at the horizontal rear edge 23 of the yoke member, such edge 23 being hemmed (Fig. 4) or otherwise finished before the garment is completed.

The back member 4 of the garment (Fig. 7) comprises a substantially rectangular lower portion having the parallel side edges 25 and 26 and the lower edge 27, the latter being hemmed or otherwise finished in the completed garment. This back member also includes an upper truncated triangular portion 24 having the upwardly convergent edges 28 and 29 and the downwardly concave upper edge 30 which is curved substantially to conform to the curvature of the rear part of the neck opening 8 of the yoke member.

The front members 5 and 6 are substantially identical in shape except that one is the reverse of the other, the member 5 comprising the top edge 31 which, in the completed garment, is united to the edge 12 of the yoke member, while the front member 6 has the top edge 31^a which is united to the edge 13 of the yoke member. The member 5 has the longitudinal edge 32 which forms a downward continuation of the edge 10 of the yoke member, thus completing one side of the front closure of the garment, while the member 6 has the edge 32^a which forms a downward continuation of the edge 11 of the yoke member, thus completing the other flap of the front closure. The parts 5 and 6 are furnished with the lower edges 33 and 33^a, respectively, which in the finished garment are hemmed, and, as here illustrated, with the integral gusset tabs 35 and 35^a respectively at their upper rear corners. These tabs are defined by curved edges 36 and 37 which intersect at the angle 38.

In assembling the several members, the top edge 30 of the back member 4 is first placed in

registry with the rear part of the edge 9 of the neck opening of the yoke member, the yoke member overlying the upper part of the back member, and these edges 30 and 9 are united, for example by sewed or cemented seams. The edges 21 and 22 of the yoke member are brought into registry with the upper portions 25^a and 26^a (Fig. 7) of the edges 25 and 26 of the back member and are permanently united thereto. The union of the back member with the yoke member may be by a stitched seam or by the use of appropriate cement or by a combination of the two. It should be noted, however, that the back member is only connected to the yoke member along the edge 30 and at the portions 25^a and 26^a of the edges 25 and 26, and that the edge portions 28 and 29 of the back member are substantially free from the yoke and that the edge 23 of the yoke is likewise free from connection to the back member.

The edge 36, for example, of the tab 35 of the front member 5 is united to the upper portion of the edge 19 of the sleeve member 15. An underarm seam 39 (Figs. 3 and 5) is now formed, uniting the longitudinal edges 19 and 20 of the sleeve 15, said seam extending from the wrist upwardly to the point 38 of the tab 35—then preferably extending along the edge 37 of the latter tab, and thence following uninterruptedly along the edge 34 of the front piece 5 so as to unite said edge 34 to the edge 25 of the back member 4. In the same way an underarm seam unites the edges 17 and 18 of the sleeve member 14 and, continuing around the edge of the gusset member 35^a, unites the edge 34^a of the member 6 to the edge 26 of the back member.

If the parts of the garment be united by sewed seams it may be unnecessary to reinforce them by the use of facings of adhesive tape or otherwise, as it will be noted that all of the essential seams are located at points such that there is little danger of the entrance of water. However, if desired, the seams may be reinforced and/or guarded by the application to the inner side of the garment of appropriate facing tapes or the like, or the seams may be waterproofed by coatings of suitable waterproofing cement.

As above pointed out, the back and yoke members are united only along the line 30 and at the points 25^a and 26^a at the armpit portion of the garment, and are otherwise free from each other. Thus, at each side of the garment, from the point X to the point Y (Fig. 2) there extends a long, freely open slit leading from the interior of the garment to the freely open air space Z (Fig. 4) between the overhanging rear portion of the yoke member and the upper part of the back member 4. This space Z opens freely to the outer atmosphere at the lower edge 23 of the yoke member, and thus there is provided a passage of ample proportions through which air may pass in and out from and to the interior of the garment. The rear portion of the yoke member swings freely away from the back member since the parts are loosely connected as above described, and thus, although this downwardly hanging flap formed by the rear part of the yoke amply insures against the entrance of rain through the slits between the points X and Y, nevertheless a free flow of air and wholly adequate ventilation is assured.

On the other hand, as above noted, the upper portion of the garment, including the upper part of the back, the shoulders, and the outer sides of the sleeves, is completely devoid of exposed seams or joints, so that, assuming that the fabric

itself is properly waterproof or water-resistant, there is no danger (short of actual rupture of the fabric) of any leakage of water into the interior of the garment.

The gusset tabs 35 provide flexible hinge members and sufficient fullness at the armpit portions of the garment so that the wearer may move his arms freely up and down without any constriction or binding and without danger of tearing or breaking at this point. While here shown as integral with the parts 5 and 6, it is contemplated as within the scope of the invention to make these gusset elements as independent parts of more or less triangular contour, if desired.

Since the garment, in its essentials, comprises but four main pieces of material as compared with the eight large pieces ordinarily used in constructing such garments, the cost of cutting and assembly is very substantially reduced, while the amount of material employed is little, if any, greater than that used in making garments according to more conventional methods. Furthermore, although the yoke portion of the garment, together with the full length sleeves, is a single unitary piece of material, the yoke pattern or blank herein illustrated (Fig. 6) is such that the completed garment is of pleasing appearance and provides all necessary fit and style for a garment of this character.

While one desirable embodiment of the invention has herein been disclosed by way of example, it is to be understood that the invention is not necessarily limited to this particular construction, but is to be regarded as broadly inclusive of any equivalent construction falling within the terms of the appended claims.

I claim:

1. A rain garment which with the exception of collar and usual trim elements consists of but four pieces of material, to wit, a yoke having sleeves integral therewith, a back member, and two front members, the back member being

joined to the yoke at the collar line and at points adjacent to each arm scye, but being otherwise unconnected thereto, each front member being joined to the yoke along a line extending from the front closure substantially to one of the arm scyes respectively, each front member being joined to the back member along a substantially vertical line extending downwardly from each armpit, each sleeve having a single longitudinally extending seam reaching from the armpit substantially to the wrist line, each front member having an integral tab forming a gusset at the armpit thereby to provide fullness such as to allow freedom of motion to the wearer's arm.

2. A rain garment which with the exception of collar and usual trim elements consists of but four pieces of material, to wit, a yoke having sleeves integral therewith, a back member, and two front members, the back member being joined to the yoke at the collar line and at points adjacent to each arm scye but otherwise unconnected thereto, each front member being joined to the yoke along a line extending from the front closure substantially to one of the arm scyes respectively, each front member being joined to the back member along a substantially vertical line extending downwardly from each armpit, each sleeve having a single longitudinal-ly extending seam reaching from the armpit substantially to the waist line, each front member having an integral tab provided with curved edges meeting at the upper end of the longitudinal seam of the respective sleeve, the curved edges being secured to the opposite edge portions of the sleeve material above the upper end of the longitudinal sleeve seam, said tab providing fullness at the armpit thereby to afford freedom of movement to the wearer of the garment.

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