S. L. WORTH & J. H. PONTIFEX.

Water Proof Garment.

No. 201,640. Patented March 26, 1878.

Fig. 1.

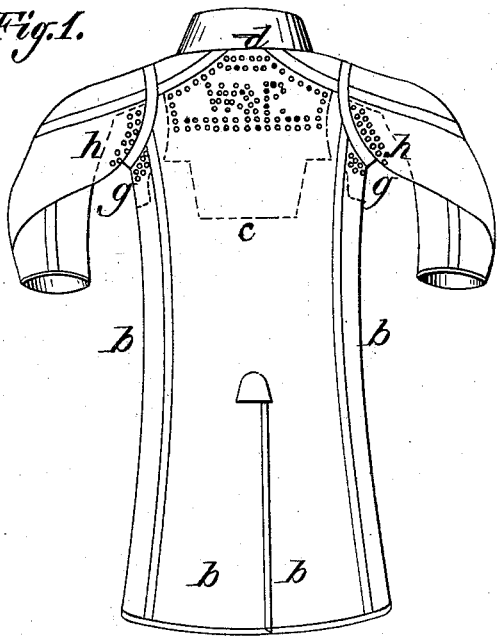
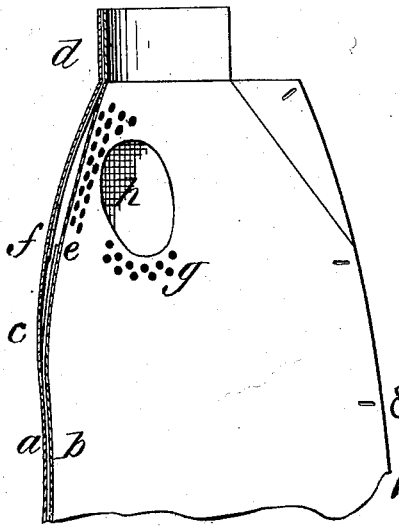


Fig. 2.



Witnesses:
Will N. Dodge.
Donn P. Tuttle.

Inventors:
S. L. Worth
J. H. Pontifex
By Dodgerton
Attys.

UNITED STATES PATENT OFFICE.

SAMUEL L. WORTH AND JOSEPH H. PONTIFEX, OF LONDON, ENGLAND.

IMPROVEMENT IN WATER-PROOF GARMENTS.

Specification forming part of Letters Patent No. **201,640**, dated March 26, 1878; application filed August 22, 1877.

To all whom it may concern:

Be it known that we, SAMUEL LEAKE WORTH and JOSEPH HOW PONTIFEX, of Oxford street, London, England, have invented an Improved Method of Effecting Ventilation in Water-Proof Garments, of which the following is a specification:

The object of this invention is an improved method of effecting ventilation in water-proof garments; and this we accomplish by separating the two fabrics forming the garment at the parts most liable to be sweated by the close fit to the wearer's body and limbs, and in perforating the lining portion which is loose from the outer portion, the perforated portion being opposite to or corresponding with a portion of the exterior which is waterproofed in the inside purposely to prevent the entrance of rain to the perforated portion.

Below, where the perforated portion of the lining is situated and on part of the loose portion, we waterproof the said lining and leave that portion of the exterior fabric unwaterproofed. The consequence is, we form a passage between an unwaterproofed portion of the outer fabric and an inner waterproofed portion of the lining fabric, to lead the air up to the perforations at that part of the lining fabric which is not waterproofed, but which part is backed, so to speak, by an inner waterproofed portion of the outer fabric.

The above explanation is in reference to the back and shoulder portion of a coat; but the invention is applicable to the arms or other parts of all water-proof garments for gentlemen's, ladies', and children's wear, particularly coats, cloaks, leggings, hoods, hats, and caps.

The annexed drawing, Figure 1, shows the inside of a gentleman's coat. The coat or garment is composed of two woven fabrics, which are connected while in sheet by a water-proof composition, in the usual manner for this class of goods. The outer fabric *a* and the inner fabric *b* are not connected by the composition at the part from just above the waist *c* to the collar *d*, but the inner surface of the inner fabric is coated with the composition from *c* to *e*, as in Fig. 2, which shows the coat in section, the part of the inside surface of the inner fabric from *e* to *d* being left uncoated, or, if coated, may have a thin fabric put upon the coating to strengthen the lining fabric at that part which is perforated, in any suitable manner, for the free passage of air from the space between the inner and the outer fabric.

The outer fabric is uncoated from the part *c* to the part *f*, and to the width of the dotted lines shown in Fig. 1, so that air may percolate and pass through the meshes of the fabric to the space before mentioned, and from thence through the perforations of the inner fabric to the inside of the coat when in wear.

It will be observed that the outer fabric is coated on the inner surface from *f* to *d*, so that the rain may run down the back from the shoulders onto the non-waterproofed portions *f* to *c* without affecting the inner fabric, because the inside surface of the inner fabric is coated at that part to prevent it.

The unwaterproofed portion of the outer fabric may in some cases have a strengthening-piece attached by solution, said piece not interfering with the passage of air to the space.

The armpits *g* of the coat-body and of the sleeve *h* are arranged in a similar manner, as can also be any other part of a garment to which the invention is applicable.

In the case of single-texture water-proof garments, we remove the coating from the portion of the back from *c* to *f*, and attach a waterproofed piece to the inside of the garment round the bottom and the sides of that part. This additional piece is carried up to the neck, where it is fastened, and forms, so to speak, a separate lining unattached, except at the edges, to form the space for the reception of the air from the unwaterproofed portion of the outer fabric to the upper part of the additional piece, this being perforated as for the double-texture garment. The unwaterproofed portion of the outer fabric may, in some cases, have a strengthening-piece attached by solution, said piece not interfering with the passage of air to the space.

We are aware that the inside fabric of a water-proof garment has been perforated for the passage of air. We therefore make no claim to that part; neither do we make any claim to waterproofing a portion of a fabric and leaving another portion unwaterproofed, nor to covering the inner perforated portion of a garment by an outside cape or a flap; but

What we do claim as our invention is—

1. A water-proof garment consisting of an inner and an outer fabric, provided with an air-passage extending through the outer fabric, thence a greater or less distance between the two, and finally emerging through the inner fabric, substantially as shown and described.

2. A water-proof garment consisting of two fabrics or thicknesses of material, provided with an air-passage lying between the two fabrics, and air-inlets passing from said space through the two fabrics, respectively, at points distant from each other.

3. A water-proof garment having two thicknesses or fabrics, provided with an air-passage extending through the outer fabric at a point covered and protected by a water-proof portion of the inner fabric, and thence through the inner fabric at a point covered and protected by a water-proof portion of the outer fabric.

4. A water-proof garment having an air-passage which emerges through the inner and the outer surfaces at different points, with the opening through each surface covered and protected by a water-proof portion of the other surface.

5. In a water-proof garment, the combination of an outer fabric of water-proof material, having its meshes left pervious to air at one or more points, an air-space between the two fabrics, and an inner water-proof fabric having perforations or a pervious portion to permit the passage of air inward from the central portion.

SAMUEL LEAKE WORTH.
JOSEPH HOW PONTIFEX.

Witnesses:
H. GARDNER,
C. GROSSETÉTO,
166 *Fleet street, London.*