No. 749,228. PATENTED JAN. 12, 1904.

E. G. RUNYAN.

WEARING APPAREL.

APPLICATION FILED MAY 14, 1901.

NO MODEL.

Fig. 1.

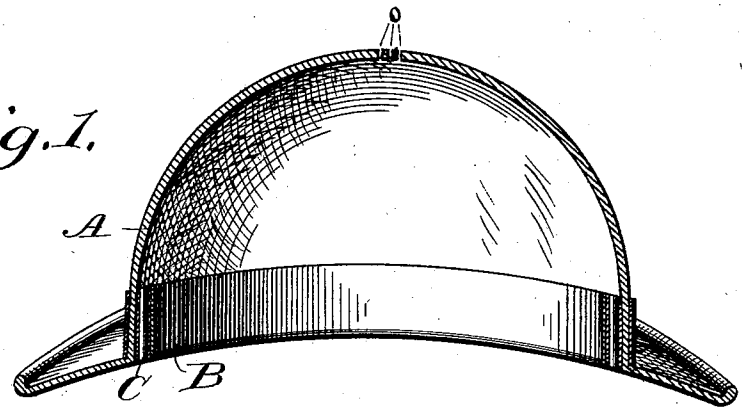


Fig. 2.

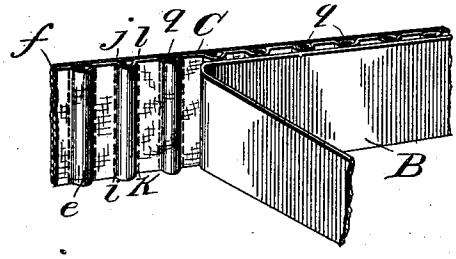


Fig. 3.

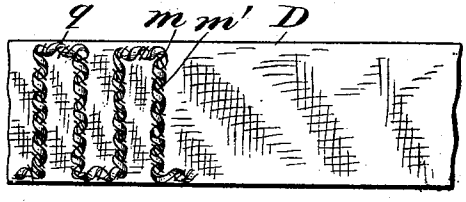
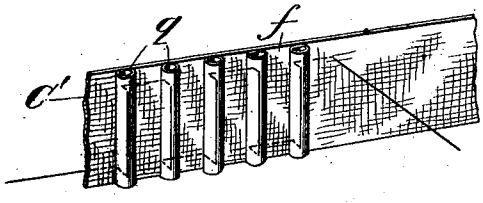


Fig. 4.



Witnesses

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No. 749,228. Patented January 12, 1904.

UNITED STATES PATENT OFFICE.

ELMER G. RUNYAN, OF WASHINGTON, DISTRICT OF COLUMBIA.

WEARING-APPAREL.

SPECIFICATION forming part of Letters Patent No. 749,228, dated January 12, 1904.

Application filed May 14, 1901. Serial No. 60,203. (No model.)

To all whom it may concern:

Be it known that I, ELMER G. RUNYAN, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in the Manufacture of Clothing, Wearing-Apparel, &c., of which the following is a specification.

The nature of this invention consists in the employment of quills or quill material in the ventilation of wearing-apparel by so arranging the quills or quill material as to provide a means for the circulation of air through the clothing. I am aware that metal and rubber tubes and corrugated celluloid and leather have been used for a similar purpose; but all the material heretofore in use is open to serious objections when used for this purpose, the metal being especially liable to rust or corrosion from the action of the saline matter in the perspiration and the corrugated materials soon softening and losing their corrugations in use, especially under the action of heat and moisture.

I claim for my quill material the following advantages over all other materials heretofore used—viz., greater lightness, elasticity, cheapness, superior resistance to the softening effects of heat and the softening and corroding effects of moisture, especially perspiration, this quill material being naturally and peculiarly adapted for this special purpose. The construction of ventilated hats offers a special field for this material and one for which this quill material seems to be peculiarly well fitted, although it is not the intention to limit its use to this article of wearing-apparel alone.

In the accompanying drawings, Figure 1 is a cross-section of a hat, showing hollow quills arranged between the sweat-band and the crown of the hat. Fig. 2 is a perspective view of a portion of the sweat-band and the attached quill-ribbon. Fig. 3 shows a modification in the arrangement of the quill material in front elevation. Fig. 4 is a perspective view showing a modified way of attaching the quills.

A represents a hat of any desired form, construction, or material, showing the quill-ribbon C arranged between the sweat-band B and the crown of the hat. In the preferred construction the sweat-band is so attached as to leave the quills open at top and bottom, thus providing a passage both through the quills and between them for the free circulation of air between the wearer's head and the crown of the hat, suitable openings *o* being commonly provided in the crown of the hat for the escape of the heated air.

C represents the quill-ribbon. This quill-ribbon may be constructed, as shown in Fig. 2, by placing quills *q* between two strips of cloth *e f* or other suitable material and fastening the strips together and securing the quills in place by stitching along lines *i j* and *k l*, or the quills may be secured by stitching directly through the quills, as shown in Fig. 3. In the latter case the strip *e* may be omitted. If desired, some form of cement may be applied to the fabric with a brush or other means to more securely hold the quills in place.

In the modification shown in Fig. 3, *q* shows the quill material formed of split quills twisted into a hollow spiral and fastened to the fabric or support D, preferably by stitches *m m'*, and having the ends of the quills near opposite edges of the strip connected together, as illustrated.

While several of the drawings show this material constructed of suitable dimensions for use in hats, it is not intended to limit it to such use alone, since the fabric shown in the drawings may be constructed of any dimensions or form desirable for other garments. When used for hats, the flexible ribbon or strip, with the hollow quills attached, is inserted between the sweat-band and crown of the hat and is in a protected position and does not come in direct contact with the head of the person, and when the hat is worn out the quill ribbon or strip can be removed from between the hat-body and sweat-band and applied to another hat, thereby introducing the ventilating feature.

The strip or ribbon made as described can be applied to various articles of wearing apparel where ventilation of the same is desirable, as it can be cut into the length and given the shape desired, and it possesses the advantages of lightness in weight, durability in

wear, and elasticity, and at the same time is not affected by conditions of heat and moisture.

It will be observed that in the different illustrations given of the invention the material is made up in strip or ribbon form with the quills attached, so that it can be applied in any length desired to the article of wearing-apparel and can be removed from one piece of apparel and applied to another, and when it is desired to securely fasten it to the garment or article the strip allows of threads or other attaching means being passed through the flexible material between the hollow quills, so as to secure it to the article.

I have illustrated and described with particularity the preferred details of construction of the several parts; but it is obvious that changes can be made in details without departing from the essential features of my invention.

Having described my invention and set forth its merits, what I claim is—

1. A strip of flexible material having secured thereto, transversely of its length, hollow pieces of quill forming ventilating-passages, and possessing the characteristics of flexibility, lengthwise of the strip, between the quills, and elastic, non-corroding and moisture-resisting ventilating-passages, substantially as described.

2. A strip of flexible material having secured thereto, transversely of its length, hollow pieces of quill, forming ventilating-passages, said quill-pieces being connected together at their ends, the whole characterized by flexibility, lengthwise of the strip, between the pieces of quill, and elastic, non-corroding and moisture-resisting ventilating-passages, substantially as described.

3. A strip of flexible material carrying hollow pieces of quill to form ventilating-passages, and a second flexible strip overlying the hollow quills and secured to the first-mentioned strip at points adjacent to the sides of the hollow quills to hold the latter to the strip, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ELMER G. RUNYAN.

Witnesses:
W. D. BIGELOW,
L. M. TOLMAN.