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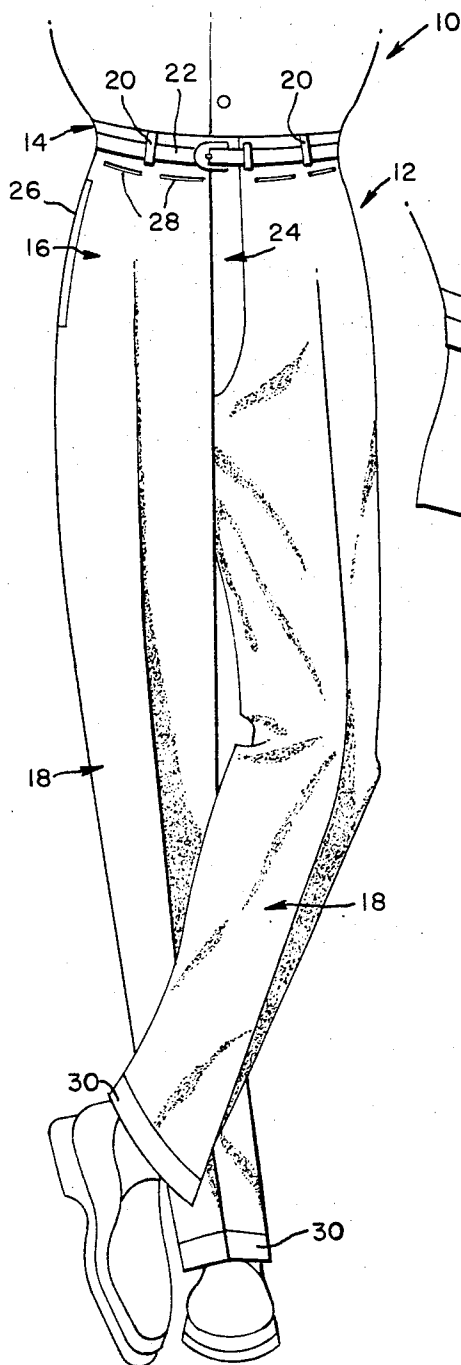
J. P. GALLAGHER

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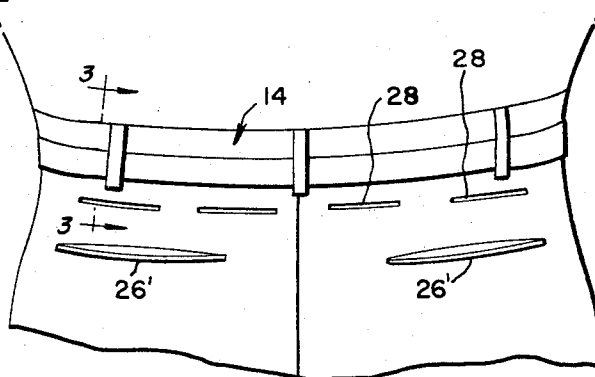
VENTILATED TROUSERS

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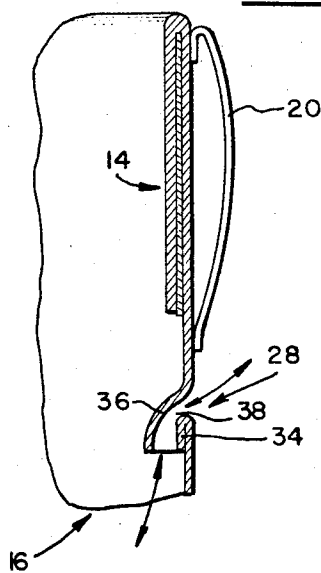
**FIG 1.**



**FIG 2.**



**FIG 3.**



INVENTOR

JOHN P. GALLAGHER

BY *Stowell & Stowell*

ATTORNEYS

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## VENTILATED TROUSERS

John P. Gallagher, 2415 Foxhall Road NW,  
Washington, D.C. 20007

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1 Claim. (Cl. 2—227)

### ABSTRACT OF THE DISCLOSURE

A plurality of elongated slot-like openings are provided in trousers just below the belt band which openings have their long axes generally parallel to the belt band and fabric internal covers provided for the slots so that they present a neat appearance when the slots are open during movement of the wearer.

This invention relates to improved clothing and in particular to trousers provided with unique ventilating means to thereby provide effective ventilation in hot climate clothing.

Clothing acts as a barrier to heat transfer in either direction that is, in radiation of heat to a body and in loss of metabolic heat from the body to the outside atmosphere.

The design and configuration of clothing is often dictated on the basis of fashion rather than on physiology and physics and therefore, hot climate clothing, particularly for the male, has poor functional properties as far as heat regulation of the body is concerned. The need for clothing based on designs dictated by physiology and physics rather than on the basis of fashion is particularly important in extreme demands of military service.

It is known that the feet represent about 7% of the total area of a human body, the legs 13%, the thighs about 9% and the lower half of the trunk about 18%. Therefore, from the waist down comprises about 57% of the total body area of a man. This factor coupled with the fact that about 50% of human sweat is derived from the trunk and 25% from the lower extremities, it is extremely important to provide ample ventilation for the lower trunk and the lower extremities in order to provide effective comfort and efficiency control in clothing.

The temperature of different parts of the body is also known to vary substantially. For example, the temperature of normal human feet is about 87° F., the temperature of the legs is about 89° F., the thighs is about 89.5° F., while the trunk portion of the body is normally at about 93° F. Since insensible evaporative heat loss from the skin is almost entirely determined by skin temperature, when there is not ventilation about the body the moisture of the environment rises substantially and evaporation decreases as the vapor tension difference is reduced. Thus in order to properly cool the body ventilation should be provided particularly in the trunk area.

It is therefore a principal object of the present invention to provide an improved trouser construction which will permit circulation or ventilation of air about the legs and lower trunk or waist of the wearer and such construction wherein the amount of ventilation increases as activity of the wearer increases.

A further particular object of the present invention is to provide ventilated trousers which will substantially improve the wearer's comfort and efficiency in hot climates.

These and other objects and advantages of the present invention will become apparent to those skilled in the art from the following detailed description of the invention which in general terms comprises trousers consisting of a waist portion, leg portions, and a belt band, a plurality of slot-like openings in spaced circumferential ar-

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range in said waist portion immediately below the belt band, each of said openings providing communication between the outside and the inside surfaces of said trousers to provide ventilation for the legs and waist of the wearer of the trousers.

The invention will be more particularly described in reference to the accompanying drawings, wherein:

FIGURE 1 is a fragmentary elevational view of the lower portion of the body of a human clothed in trousers constructed in accordance with the present invention;

FIGURE 2 is an enlarged fragmentary view of the back portion of the waist and belt band of the trousers illustrated in FIGURE 1; and

FIGURE 3 is an enlarged section on line 3—3 of FIGURE 2.

Referring to the drawings 10 generally designates the lower portion of a human and 12 designates a pair of trousers incorporating the principles of the present invention. The trousers 12 include a belt band 14, a waist portion 16, and leg portions 18. The belt or waistband 14, in the illustrated form of the invention, includes conventional belt loops 20 and the trousers are attached by a belt shown at 22. The waist portion 16 includes a fly or lap portion 24, side pockets 26, rear pockets 26' and ventilating slots or openings 28. The leg portions 18 are shown with conventional cuffs 30.

Referring particularly to FIGURE 3, the ventilating slots 28 consist of a number of elongated slot-like openings which are circumferentially spaced in the waist portion immediately below the belt band and the belt loops 20. Each of the ventilating slots 28, in the preferred form of the invention, includes a refolded seam portion 34, and an internal flap or cover 36. The internal flap 36 is an integral extension of the band 14 and is therefore comprised of the same fabric as the trousers to present a neat appearance to the trousers such that when the slots are opened during movement of the wearer only the material of the trousers is exposed.

In operation of the improved vents air is permitted to circulate in, for example, chimney-like fashion up through the openings at the lower ends of the leg portions 18, flowing past the lower and upper legs and the lower portion of the trunk, and then out of the plurality of the vents 28. It will be appreciated that as motion or movement of the wearer increases the greater the opportunity for the slot-like openings to open, thus permitting a greater circulation of ventilating air.

While the form of the upper vents illustrated in FIGURES 1, 2 and 3 of the drawings are particularly adapted for both appearance and utility, where fashion or appearance is not a particular factor, that is in trousers to be worn by the armed services personnel in the field, the flap 36 may be omitted and the openings designated by reference number 38 may be substantially increased. Where additional strength is desired an open mesh may be sewn across the openings 38 to add strength to the improved trousers.

It is also contemplated that each of the slot-like openings may be provided with a separable fastener such as a zipper so that the openings may be closed during cold weather use of the trousers, and opened during warm weather use of the trousers when the slots are to become functional.

From the foregoing description of a preferred embodiment of the present invention it will be appreciated by those skilled in the art that various modifications may be made in the form of the ventilating slots without departing from the scope of the present invention as defined in the appended claim.

I claim:

1. Fabric trousers comprising a waist portion, leg por-

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tions, a belt band and means forming a plurality of slot-like openings in the fabric in spaced circumferential arrangement in said waist portion adjacent the belt band, each of said formed slot-like openings having a substantially greater length than width with the length dimension extending generally parallel to the belt band of the trousers, each of the openings providing communication between the outside and inside surfaces of said trousers to provide ventilation for the legs and waist of the wearer, and a fabric internal cover integral with said belt band and comprised of the same fabric as the trousers extending loosely downwardly from said belt band over said slot-like openings and presenting from the outside a fabric configuration even when said slot-like openings are expanded.

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JORDAN FRANKLIN, *Primary Examiner.*

H. H. HUNTER, *Assistant Examiner.*