

Dec. 31, 1946.

E. L. SCHULZ

2,413,386

SUIT FOR CIRCULATING CONDITIONED AIR ABOUT A PERSON

Filed Aug. 11, 1944

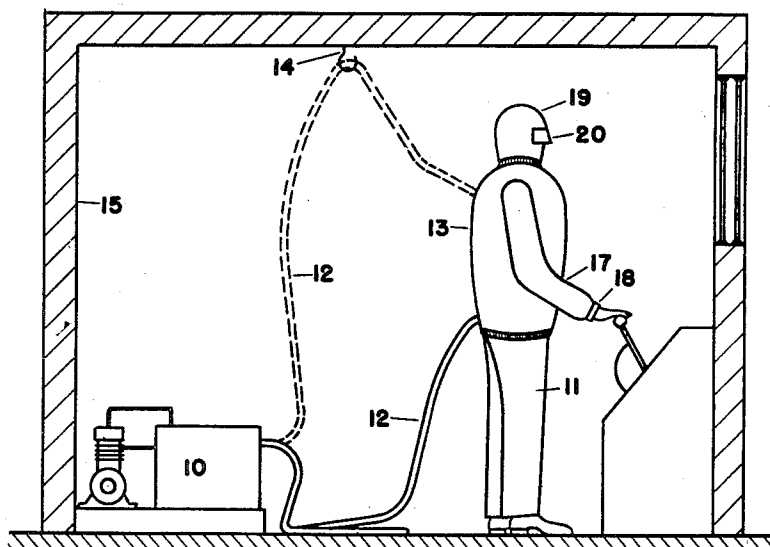


FIG. 1

FIG. 2

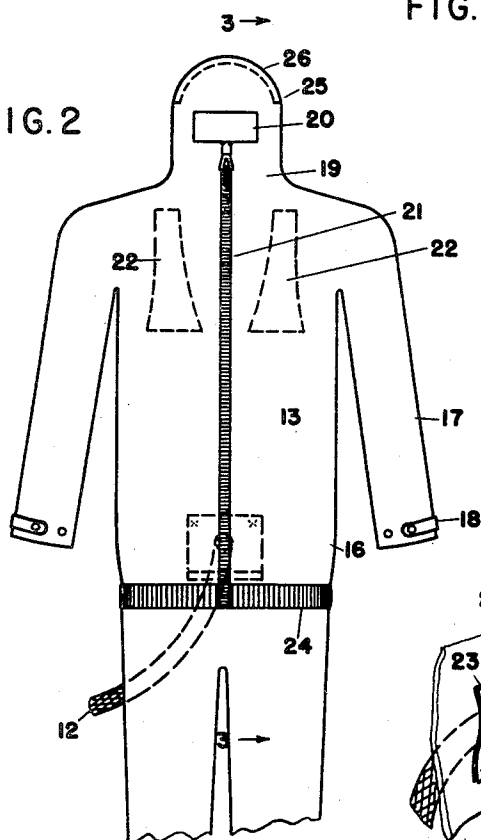


FIG. 3

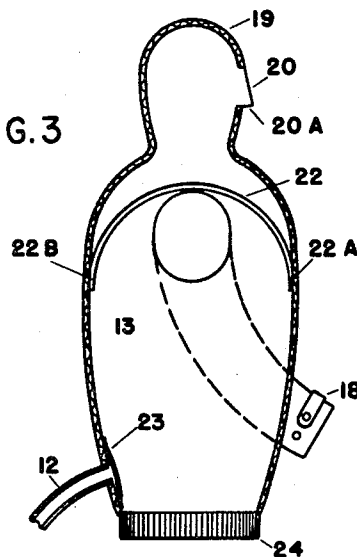
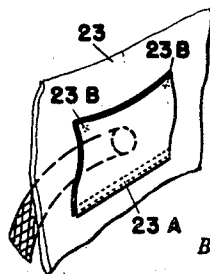


FIG. 4



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2,413,386

SUIT FOR CIRCULATING CONDITIONED AIR
ABOUT A PERSONEdward L. Schulz, Syracuse, N. Y., assignor to
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Application August 11, 1944, Serial No. 549,017

3 Claims. (Cl. 2—2)

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This invention relates to the arts of refrigeration and heating, and more particularly to the air conditioning of the human body while working under high temperature conditions or low temperature conditions.

Operators working in the cabs of overhead cranes, furnace and laundry operators, airplane pilots in jungle operations and laboratory technicians are confronted with high temperature ambient conditions which frequently prevents them from working efficiently and sometimes results in complete stoppage of work.

Under some conditions the room in which the operators must work may be air conditioned; however, there are circumstances in which air conditioning of the room or cab or space in which the operator must work cannot be physically accomplished and there are also circumstances under which air conditioning of the entire space in which the operator works is uneconomical.

It is an object of the instant invention to provide an air conditioning article of clothing for operators working under extreme temperature conditions.

It is another object of the invention to provide an air cooled jacket for operators working under high temperature conditions.

It is still another object of the instant invention to provide an air cooled combined jacket hood for operators working under high temperature conditions.

Other objects and the nature and advantages of the invention will be apparent from the following description taken in conjunction with the accompanying drawing, wherein:

Fig. 1 is a vertical cross section of a room at a high temperature in which an air cooled operator is working;

Fig. 2 is a view in elevation of a combined hood and jacket in accordance with the invention;

Fig. 3 is a vertical section taken along line 3—3 of Fig. 2; and

Fig. 4 is a fragmentary detail of the air hose inlet showing its association with a portion of the jacket.

Referring to the drawing the self-contained refrigeration apparatus 10 includes compressor, condenser, evaporator, evaporator fan and filters and is so located with respect to the operator 11 that the cold air circuit which includes passage over the evaporator of the unit 10 may flow to the operator 11 through the flexible cold air conduit 12 and may be connected to the jacket 13 at the level of the hip as shown in solid lines or alternatively the cold air hose 12 may be draped over

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flexible suspension 14 attached to the ceiling of the room 15 and connected to the jacket 13 at shoulder height. Because of high temperature operating conditions within the room 15, the operator 11 is provided with the air cooled jacket 13, so that he may carry out his work efficiently.

While but one operator is shown in the drawing, there may be more than one operator within the room 15 provided with duplicates of jacket 13 and more than one hose 12 may lead from the refrigeration unit 10 to the various operators.

While the unit 10 has been shown as being located within the room 15 it may be located outside of the room 15.

Figures 2 and 3 show a garment having a hood and jacket combination; the helmet portion of the garment may be omitted under certain circumstances and a gathered construction about the neck substituted.

As shown in Figures 2 and 3, the garment 13 comprises a body portion 16, sleeves 17 provided with adjustable wrist straps 18, a hood 19, a transparent plastic eyeshade 20 having an air outlet 20a associated therewith, a slide fastener closure 21 for the front thereof, built-in support 22 which serves to support the garment in such relation to the shoulders of the wearer that the shoulders of the garment are spaced from the shoulders of the wearer, and a cloth deflector 23 stitched to the interior of the body portion 16 at 23a and 23b, which serves to diffuse the incoming air. The built-in support 22 comprises a pair of generally U-shaped elements stitched to the body portion 16 at 22A and 22B. The length of the U-shaped elements of the support 22 are of generally less dimension than the corresponding dimension across the shoulders of the garment front to back so that the U-shaped elements support the shoulders of the garment above and away from the shoulders of the operator. The jacket 13 may be gathered at its bottom as shown at 24.

The material of the jacket 13 including the hood 19 may be a closely woven cotton poplin, the weave of which effects a control on the rate of air escaping through the material. The air may also escape at the plastic eyeshade and in fact the plastic eyeshade may be eliminated under certain circumstances and if desired. Inside the hood, may be provided fasteners 25 for holding a helmet 26 adapted to be worn by the operator, so that when the operator turns his head, vision will not be impaired since the hood and helmet will move substantially as a combined unit, and the eyeshade will remain in desired position.

When the helmet is omitted the air may escape

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at the neck through the space between the gathered margin at the neck and the neck of the wearer. As the pressure between the jacket and the body of the wearer is greater than the ambient within the high temperature room, the jacket "breathes" in the sense that air passes outwardly through the pores of the cloth.

While the waist of the jacket may fit snugly, it will at times be desirable to have it fit a little looser especially when the hose connection is near the shoulder blades, so that air will then be able to flow downwardly over the limbs of the wearer.

The hose is generally attached with friction fit to the jacket 13 so that if the wearer, such as an airplane pilot, has to disengage himself from the hose, he may do so quickly.

The cloth deflector 23 prevents direct impingement of the air leaving the hose on the body of the wearer and, in effect, it diffuses the air so that one spot on the body of the wearer is not subjected to forceful and uncomfortable impact.

The support 22 which supports the shoulders of the garment in spaced relation to the shoulders of the wearer enables circulation over the body in a manner which could not be effected if the jacket rested upon the shoulders. The construction of the support in cooperation with the garment is such that an area or space is formed for circulation about the support and over the shoulders which is highly beneficial in cooling the person.

The escape of air from the jacket 13 takes place through the sleeves, through the cloth itself, at the waist and about the eyeshade when a helmet is used, or between the gathers about the neck when the helmet is omitted.

It will be obvious to those skilled in the art that various changes may be made without departing from the spirit of the invention and therefore the invention is not limited to what is shown in the drawing and described in the specification but only as indicated in the appended claims.

What is claimed is:

1. A garment for use by an operator working in a space wherein the ambient is at an abnormal temperature which comprises a jacket, support

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members in said jacket serving to support the jacket above and away from the shoulders of the operator, port means in said jacket for receiving tempered air for diffusion about the person of the operator, a hood associated with said jacket, a transparent eye shade having an air outlet associated therewith disposed in said hood, and fasteners in said hood, said fasteners being adapted to engage a helmet worn by the operator whereby the hood and the helmet will move substantially as a combined unit to prevent impairment of vision upon movement of the head of the operator.

2. A garment for use by an operator working in a space wherein the ambient is at an abnormal temperature which comprises a jacket, support members in said jacket serving to support the jacket above and away from the shoulders of the operator, port means in said jacket for receiving tempered air for diffusion about the person of the operator, a hood associated with said jacket, and fasteners in the hood adapted to engage a helmet worn by the operator whereby the hood and the helmet will move substantially as a combined unit upon movement of the head of the operator.

3. A garment for use by an operator working in a space wherein the ambient is at an abnormal temperature which comprises a jacket, a pair of generally U shaped members adapted to pass over the shoulders of the operator, means securing said members to the front and back of the jacket at its interior, the length of each support member being less than the corresponding dimension of the jacket so that the members tend to support the jacket above and away from the shoulders of the operator, port means in said jacket for receiving tempered air for diffusion about the person of the operator, a hood associated with said jacket, and fasteners in the hood adapted to engage a helmet worn by the operator whereby the hood and the helmet will move substantially as a combined unit upon movement of the head of the operator.

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