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BUOYANT, REGULATED-TEMPERATURE WEATHER-SUIT

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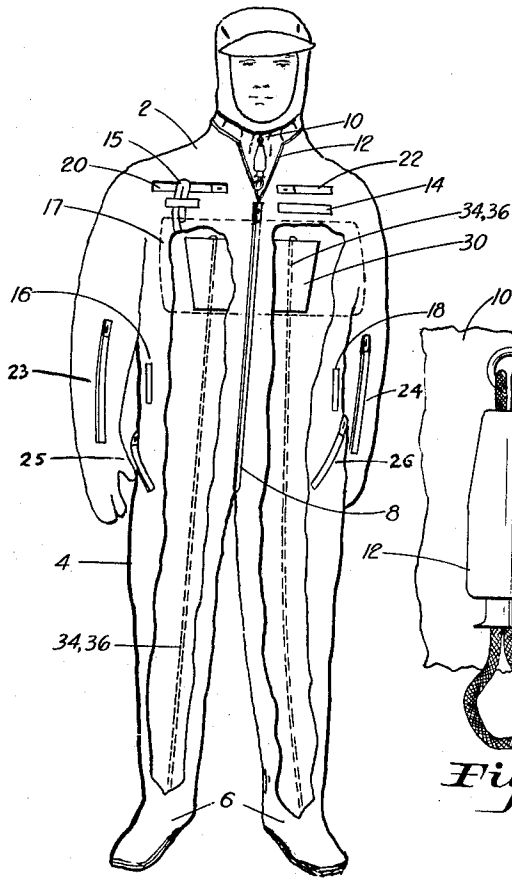


Fig. 1

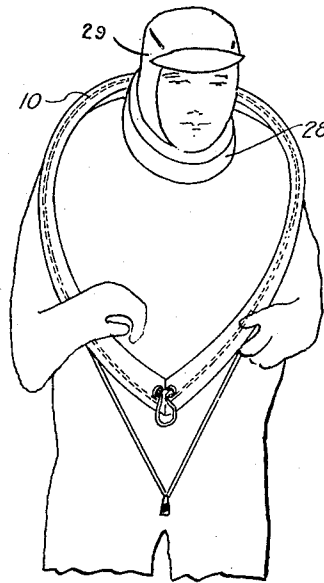


Fig. 2

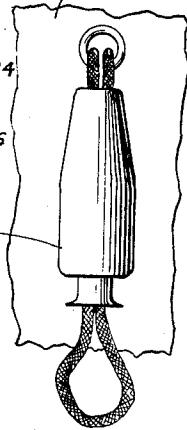


Fig. 5

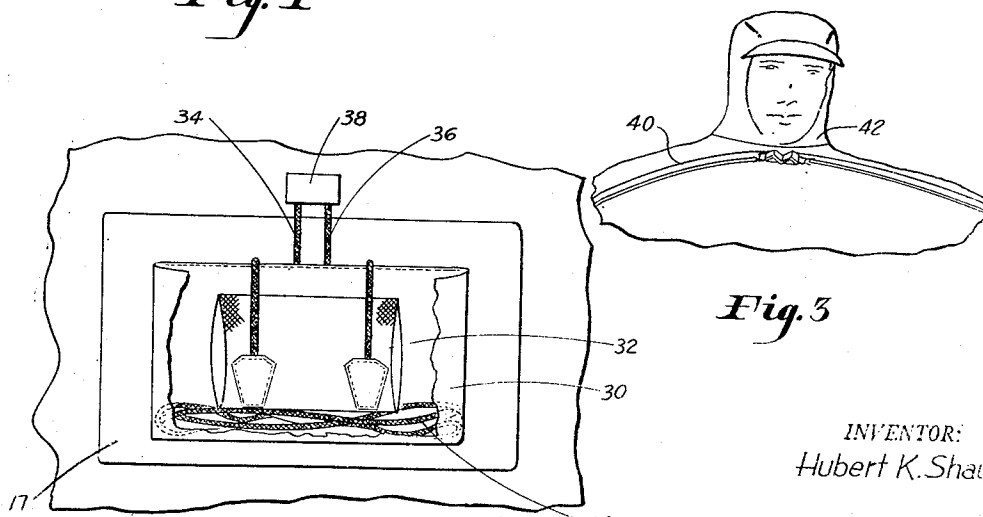


Fig. 4

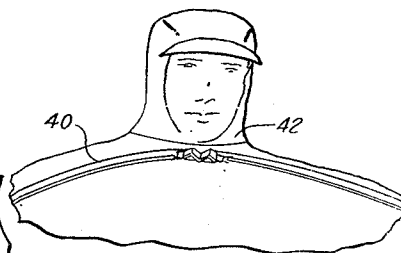


Fig. 3

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BUOYANT, REGULATED-TEMPERATURE WEATHER-SUIT

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2 Claims. (Cl. 126-204)

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This invention relates to improvements in amphibious coveralls and anti-exposure immersion-suits. Intended primarily for fishermen, yachtsmen, aviators, and the like, it is also practical for use by campers, mountain climbers, skiers, hikers, etc. If utilized as a cold-water swim-suit, the weather-suit should be provided with integral buoyancy, equivalent approximately to that of a 20-ounce kapok life-jacket, in the form of built-in buoyancy-pads. Otherwise, an approved type of buoyancy-vest or life-jacket must be worn either inside or outside the weather-suit. An air-compartment is also provided.

This invention is intended specifically for severe-weather conditions, where the loss of internal heat from the human body becomes more rapid than the body's heat-producing capacity. The primary object of the invention is to provide a light-weight source of auxiliary warmth as an integral part of a one-piece protective coverall, and to provide a simple means of transferring this heater to various locations within the coverall in order to distribute warmth where most needed.

A further object of the invention is to utilize humidity and condensation-moisture, which heretofore constituted a problem when water-impermeable coveralls were worn for relatively long periods of time. The moisture-activated chemical heating unit, attached to the weather-suit, generates warmth for several hours each time that a small quantity of water is added to it; and the vapor within the weather-suit is utilized to prolong the production of auxiliary warmth.

If a safety-equipment accessory, whether a signal whistle, a flashlight, or a heating-unit, is entirely separate or detached, it all too frequently is not on hand when an unforeseen emergency actually occurs; or it may be lost overboard from a small boat or life-raft. This is a further reason that the source of auxiliary warmth, the light-weight chemical heating-unit, is attached to the weather-suit.

Another object of the invention is to provide a snug, yet comfortable neck-closure, to minimize the loss of rising warm air during extremely cold conditions. The ring-shaped base of an elongated hood, attached to the combined entrance-opening and neck-closure, accomplishes this added purpose.

Fig. 1 is a front elevation of the weather-suit, showing the entrance closure in closed position, and indicating in broken section the suspension-

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cords connected to the heat-unit shown in suspended positions.

Fig. 2 is a front elevation showing the entrance closure in open position and extended to full circumference, and showing also the elongated hood at the back of the entrance closure.

Fig. 3 is a front elevation showing a modified type of entrance-closure, a horizontal slide-closure extending between the shoulders of the weather-suit.

Fig. 4 is a fragmentary front elevation of the interior surface of the weather-suit, indicating an inflatable compartment and storage pocket with heat-unit.

Fig. 5 is a fragmentary view of a spring-controlled clamp or line-tightener which may be used for adjusting the drawcord.

As shown in Fig. 1, the hood-topped jacket 2 is joined to the trousers-portion 4 and foot-portions 6 to form a one-piece weather-suit. Constructed of water-impermeable material, this weather-suit is equipped with a detachable heat-unit to supplement the human body's heat-supply in very cold weather. A vertical closure 8 may be provided to compress the gathered fullness in the gusset-front of the weather-suit when the drawcord closure 10 is in closed position. This supplementary closure 8 may be provided with a slide or other suitable means of fastening. An easily-adjustable cord-clamp 12 holds the drawcord securely in position, compressing the spongy, elongated base of the hood underneath the drawcord when in closed position. A strap 14 may be provided to facilitate the attachment of a waterproof flashlight, jack-knife, whistle, or similar items of equipment and to keep these readily accessible during emergencies.

An inflating-tube 15, connecting with inflatable compartment 17 may be used to furnish buoyancy unless a separate life-vest or life-jacket is used inside or outside the weather-suit.

Belt-loops 16 and 18 may be used for any type of belt, to divide the weather-suit into upper and lower portions when desirable to increase the warmth in the foot- and leg-portions. With the belt tightened at the waist and the heat-unit suspended in the foot- or leg-portions, the warmed air will remain localized instead of rising to the top of the weather-suit and concentrating there. Foot-portions may be provided with suitable inner-soles of porous or perforated material, for increased circulation of air near the feet. Watertight pockets 20 and 22, and adjustable air-vents 23, 24, 25, 26, equipped with suitable slide-closures, may also be provided.

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As shown in Fig. 2, the resilient collar 28 is an extension of the hood 29, which is joined to the weather-suit at the back of the circumferential entrance-closure 10. This hood-extension may be of any suitable sponge-like material, such as foam-latex. Attached to the interior surface of the weather-suit, or to the inflatable compartment 17, just below the drawcord closure of the entrance portion, is a built-in pocket 30, sufficiently large to contain the heat-unit 32, when not in use, plus the slack cords as well.

These suspension-cords 34 and 36 are connected at one end to the weather-suit by a reinforcement patch 38, and at the other end to the heat-unit itself. These cords are approximately 6 feet long, in order to extend to the foot-portions or any other location within the weather-suit.

Fig. 3 illustrates a modification of entrance-closure, with a horizontal slide-closure 40 and a modified type of hood 42.

I have found these improvements practical and effective. They are characterized by basic simplicity of operation. For example, if and when desired, the heater can be removed from the pocket 30 and placed in either of the foot-portions 6, with the cords 34 and 36 extending downwardly into said foot-portions. The broken lines 34, 36 extending from the pocket 30 to each foot-portion 6, as shown in Figure 1, illustrate two alternative positions in which the heat-unit 32 and attached cords 34 and 36 may be placed upon removal of said heat unit from said pocket. When it is desired to place the heater in some other location in the back or front of the suit, it is merely necessary to pull up the cords with the heater attached at the end thereof, and place in desired new position.

There are, of course, many different modifications and adaptations which may be developed within the scope of the appended claims.

I claim:

1. In a one-piece weather-suit constructed of waterproof materials and having jacket-, leg-, and foot-portions, said jacket having an entrance portion at the top, the combination of a chemical heat-unit, a pocket attached to the front of the jacket portion of the weather-suit, said pocket adapted to contain the entire heat-unit assembly when not in use, a relatively thick and firm cord, one end of which is joined to the upper portion of the weather-suit adjacent to the entrance opening of the weather-suit, said cord being sufficiently long to extend to the lowermost portions of the leg-portions, the chemical heat-unit being attached to the other end of the cord, thereby permitting the transfer of the heat-unit to the interior of the foot-portions and leg-portions.
2. In a one-piece weather-suit constructed of

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waterproof materials and having jacket-, leg-, and foot-portions, said jacket having an entrance portion at the top and a drawcord neck-closure portion, the combination of a chemical heat-unit, a pocket attached to the front of the jacket portion of the weather-suit, said pocket adapted to contain the entire heat-unit assembly when not in use, a relatively thick and firm cord, one end of which is joined to the upper portion of the weather-suit adjacent to the entrance opening of the weather-suit, said cord being sufficiently long to extend to the lowermost portions of the leg-portions, the chemical heat-unit being attached to the other end of the cord, thereby permitting the transfer of the heat-unit to the interior of the foot-portions and leg-portions; and a hood attached to the suit and having an elongated base extending into the jacket portion and adapted to extend beneath the chin, said elongated base being of spongy, compressible material, thereby permitting the drawcord neck-closure to be compressed snugly against the hood's elongated base, serving to reduce the escape of rising warm air from the weather-suit, in extremely cold temperatures.

HUBERT K. SHAW.

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