Temporary emergency cover comprising inflatable framework formulated of high temperature resistant fabric tubing which serves to support a cover formed of high temperature resistant fabric cloth embodied with additional tubing and misters to circulate and to spray water to provide further cooling protection against the high temperatures from a rapid engulfing fire.
RAPID DEPLOYMENT EMERGENCY CANOPY

BACKGROUND

[0001] 1. Field of Invention

[0002] This invention relates to the protection of last-resort of individual dedicated to extinguish fires where time is of a premium for survival of a fast-approaching fire.


[0004] It is well proven that forest and open-range fires can jump from one location to another at very high speeds, more than twice the speed at which an able human can run. Consequently, fire-fighting personnel can be trapped and isolated without warning, leaving the individual in a precarious, if not dangerous, predicament.

[0005] To minimize these circumstances, fire-fighting personnel are issued non-rigid tent-like covers composed of glass fabric and foil laminate, but requires unboxing, extending, manipulating and to get inside, to cover the individual completely, and further, to lay down on the ground.

[0006] All this operation for obvious reasons requires, in the event impending danger, a great degree of calm and training all the while trying to overcome nervousness and strong gusty winds, is not an easy task.

[0007] In other inventions U.S. Pat. No. 5,630,296 the inflatable framework while minimizes the time of the deployment and access to the shelter, still, it does not attain complete automation of said action of deployment. Furthermore, the tight confinement habitat makes it prone to the possibility of asphyxiation of the individual in question should be lose consciousness or becomes impaired.

[0008] In light of the above, it is the object of this invention to provide a simple, fast, safe and economical fire-protection device to anyone in the line of fire.

SUMMARY AND OBJECTS OF INVENTION

[0009] The inconveniences of prior art portable emergency shelters are resolved with the present invention and significant improvement in deployment time, easier handling by the operator, and the importance of additional cooling effect for greater safety margin.

[0010] It is the primary objective of this invention to shelter and to protect personnel, however, the scope of applications can be more extensive and should not be limited to ground equipment, vehicles, fixed structures, and small vessels.

[0011] Concurrently, it is an object of this invention to provide emergency shelters for personnel at the fire-fighting front.

[0012] Another meaning of this invention is to give emergency shelter by rapid deployment without previous training by the operator and by a single lever pulling of the deployment mechanism.

[0013] All the mentioned features, properties of the present invention will be shown graphically. The following detailed description taken with reference to the figures of the accompanied drawings.

BRIEF DESCRIPTION OF THE DRAWINGS:

[0014] FIG. 1 is a perspective view of a firefighter deploying the rapid deployment emergency canopy.

[0015] FIG. 2 is a perspective view showing a firefighter with the rapid deployment canopy readily deployed.

[0016] FIG. 3 is also a perspective view showing a firefighter at the action of entering inside the rapid deployment canopy.

[0017] FIG. 4 is a perspective view showing a firefighter partially covered by the rapid deployment canopy in the process of taking shelter to lay down on the ground floor.

[0018] FIG. 5 is a perspective view of a firefighter fully sheltered on the ground and in the action of coupling a pressurized canister of water to the nozzle of the water conduit.

[0019] FIG. 6 is a perspective view of a firefighter fully sheltered on the ground with the water misters delivering water mist at full capacity from said pressurized water canister.

DETAILED DESCRIPTION OF THE DRAWINGS

[0020] At the outset, it should be clearly noted that like reference numerals are intended to identify the same elements and/or structure throughout the several drawing figures, as such elements and/or structure may be further described or explained by the entire written specifications of which these detail descriptions is an integral part.

[0021] While not in use, the Rapid Deployment Emergency Canopy 10 is normally deflated, folded and contained in a backpack or other easy-to-carry case. When the firefighter or operator feels entrapped by a rapidly approaching fire, with one hand, pulls handle 12 to seek shelter.

[0022] In that form of the present invention, FIGS. 1, 2 & 3 displays the Rapid Deployment Emergency Canopy 10 in the process of unfolding to the deployment stage by operation of a pull handle 12 that is coupled to an action linkage 14 whereas performs a double action of opening the stowage container 18 and simultaneously to release the pressurized gas from the compressed gas bottles 21 firmly secured inside pockets 30. The very moment that the released gas leaves said bottle it is forced to travel throughout two fully independent pressurized passageways 20 and 22 giving form and rigidity to the Rapid Deployment Emergency Canopy 10. Fully wrapped around by an high temperature resistant fabric material 27 can be formed of ceramic, composites, carbon filaments and the like commercially available. Two umbilical straps 16 are provided to attached said Rapid Deployment Emergency Canopy 10 to aforementioned carry-on container 18 to prevent unwanted displacement of the structure 10 away from the standing operator 19 due to gusty winds or drafts. To facilitate the displacement of the operator 19 inside the structure 10 despite adverse wind conditions, two cross shelves of fabric 25 are in place at both longitudinal ends of said emergency structure 10. The operator 19 steps inside the canopy 10 through the entrance 23 by the action leg-body-leg thus grasping the Rapid Deployment Emergency Canopy 10 securely by both ends, thus initiating the safety escape maneuver to lay on the ground and to seek protection from a rapidly engulfing fire.
On FIGS. 4, 5 & 6 the operator 19 initially is poised to lay on ground during escape maneuver with the inflatable Emergency Canopy 10 fully deployed. Once the operator is safely secure on ground he then will couple a pressurized container full of water 50 to nozzle 26 affixed to flexible tube 20 hung alongside the most elevated part of the emergency canopy 10 attached thereto a plurality of interior hung misters 28 and exterior mounted spray-down sprinklers 62 allows the discharge of said cooling water 60 to evaporate thus lowering the surrounding temperature to safer levels. While in the deployed stage, the operator by means of the entrance 23 has the capacity of crawling with his elbows and knees while he is surrounded and protected by the Rapid Deployment Emergency Canopy 10 should be desire to move to a safer surrounding.

While preferred embodiments of the invention have been shown and described, it will be understood by persons skilled in this art that various changes and modifications may be made without departing from the spirit of the invention.

1. Rapid Deployment Emergency Canopy comprising:
   An inflatable framework formed from a plurality of independently inflated tubes substantially parallel in contact with each other, formed of high temperature resistant fabric and
   a cover of high temperature resistant fabric supported by said framework to cover an area of protection about a person and
   means activating to inflate to a rigid state said tubular framework whereas when inflated the loss of anyone continuous tubular framework by failure or by rupturing, the rigidity of the remaining single continuous tubular framework would be able to support the integrity of said cover.

2. The structure of claim 1 further comprising of:
   a light weight continuous generally-tubular member embodied along the most elevated portion of said emergency canopy whereas a plurality of misters on the inside and the outside of said canopy and a nozzle at one extreme end of said generally tubular member are coupled thereto.

3. Rapid Deployment Emergency Canopy as claimed in claim 1 further comprising of a container for storing and transporting said structure in a folded fashion prior to pressurization to deployment whereas when said container is actuated to the open-to-use position by a quick release means, two independent actions occur in sequence thereon, one is the opening of the carry-on container the other is to pressurize said tubular frame to form a free standing shelter at a moment when time is of a premium.

4. The structure of claim 3 wherein:
   Said container is a backpack attached to the person by conventional means of straps and belts. Said backpack container is further comprised of straps affixed to both sides of the shelter thus when inflatable frame is fully deployed it surrounds the operator from head to toe, thus is secured to the person in case of high velocity winds or drafts.

5. The structure of claim 1 further comprising:
   Of an open bottom side to permit a quick entry into an exit from said structure and two cross segments of fabric one at each end forward and aft to permit the operator to hold firmly said structure with both feet and hands when dropping himself to the ground and while laying on the ground to shelter himself from a rapidly advancing fire, and to facilitate crawling on elbows and knees to reposition himself to a safer emplacement.

6. The structure of claim 1 further comprising:
   A pressurized canister containing water. Said canister is either pre-pressurized to force said water to exit throughout the misters or by hand pump action to obtain the same effect of water spraying to cool off the person taking shelter thus lowering the temperature of the immediate surrounding air of said shelter by water evaporation effect thus adding fire protection to the fabric.

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