

Rescuing Helmet Having Illuminating Device

Field of the Invention

The present invention relates to a rescuing helmet having illuminating device of the type which includes a heat resistant helmet body, a fastening strap, a controlling unit and compressed air tank. This rescuing helmet is suitable for use in a fire accident. The controlling unit is provided with a metered throttle to regularly controlled the air stream supplied to the helmet body. The light can be also simultaneously triggered on by the light triggering portion disposed within the controlling unit. The user can be supplied with prolonged time of air stream and light for escaping from the fire yard.

Description of Prior Art

The existing rescuing mask for fire accident is directly enveloped onto the head of the user. The mouth portion of he rescuing mask is provided with an activated charcoal to filter out the toxic gas. However, when an fire accident is happened, the oxygen level in the fire yard is comparatively lower and even the filtered air is inhaled, the user can not be supplied with sufficient air/oxygen. When the oxygen supply is reduced, the chance of getting saved is also lowered. As a result, there is still a room for improving the existing rescuing device.

Summary of the Invention

It is the objective of this invention to provide a rescuing helmet which is compact and easy to use within the fire yard.

It is still the objective of this invention to provide a rescuing helmet wherein the toxic gas within the fire yard can be completely isolated.

It is still the objective of this invention to provide a rescuing helmet

wherein it is easy to make and the cost is low while it provides a prolonged period of air supply and light such that the chance of being saved is increased.

In order to achieve the objective set forth, the metering throttle can be simply switched on by depressing the switching portion of the controlling device. The fresh and compressed air can be readily supplied to the helmet body which is heat resistant. The rescuing helmet is also provided with a light with which the rescuing path can be readily spotted. The helmet body is made from heat resistant material which can be readily used by the adult and children. By the provision of the rescuing helmet, the toxic gas can be completely isolated and the user can be readily saved.

Brief Description of Drawings

In order that the present invention may more readily be understood the following description is given, merely by way of example with reference to the accompanying drawings, in which:

Figure 1 is a schematic illustration showing the application of the rescuing helmet made according to the present invention;

Figure 2 is a cross sectional view of the controlling device;

Figure 3 is an exploded perspective view of the metering throttle;

Figure 4 is a cross sectional view of the metering throttle;

Figure 5 is a schematic illustration of the metering throttle showing the operation thereof;

Figure 6 is a cross sectional view of the metering throttle showing the post stage thereof;

Figure 7 is a plan view of the other embodiment of the rescuing helmet; and

Figure 8 is still a plan view of the third embodiment of the rescuing

helmet.

Detailed Description of Preferred Embodiment

Referring to Figure 1, the rescuing helmet generally includes a heat resistant helmet body 1, a fastening strap 2, a controlling unit 3 and compressed air tank 4. Detailed Description of be given as follow.

The heat resistant helmet body 1 is provided with an air conduct 11 for connecting a hose 12 thereof. The lower peripheral of the helmet body 1 is provided with a resilient strap 4. The lower portion of the resilient strap 13 is provided with a fastening strap 2. The other end of the fastening strap 2 is connected with an air tank 4. Referring to Figure 2, the top outlet of the air tank 4 is provided with a controlling unit 3. The controlling unit 3 includes a metering throttle 31, a cover 32 and a light triggering device 33. Referring to Figures 3 and 4, the metering throttle 31 is configured with a main barrel 312 having a first receiving chamber 3121 at top. The receiving chamber 3121 is disposed with an actuating spring 313, an actuator 314. The outer peripheral of the main barrel 312 is provided with an air supplying duct 3123 which is aligned with an orifice 318. The main barrel 312 is provided with a switching portion 311 atop. The actuator 314 is provided with an annular groove 3142 in which a rubber ring 3143 is disposed and which is pressed against to the inner wall of the first receiving chamber 3121.

The main barrel 31 is further provided with a second receiving chamber 3122 which is located under the actuating portion 3141 of the actuator 314 and which is slantly disposed. The second receiving chamber 3122 is provided with an actuating rod 315 and a discharging valve 316 is disposed thereunder. The lower end of the discharging valve 316 is passed through an opening of a washer 317 and which is further extended into the nozzle 41 of the air tank 4. The

lower end of the discharging valve 316 is finally pressed against onto an upper portion of the pressing tab 42.

Furthermore, the discharging portion of the air tank 4 is provided with a cover 32 in which a light triggering portion 33 is mounted. The switching portion 311 of the metering throttle 31 is projected over the cover 32 such that the user may press to switch on the air supply.

Referring to Figures 2 and 5, when the switching portion 311 is depressed by the user, the actuating plate 331 of the light triggering device 33 will be pressed such that the positive terminal of the light 333 is triggered and the power from the battery 332 is supplied to the light 333. On the other hand, the actuating rod 315 which under the actuating portion 3141 is inclined and pushed toward the discharging valve 316, the pressing tab 42 and the spring 43. Then the compressed air within the air tank 4 is released from the side gap of the pressing tab 42 and then enters into the orifice 3161 of the discharging valve 316. The air stream then enters into the first receiving chamber 3121 via the second receiving chamber 3122 and is built up in the space under the actuator 314. The built-up air stream will push the actuator 314 as the pressure increases thereof. However, part of the air pressure is sustained by the actuating spring 313 and not all the downward spring force is released. By this arrangement, the air stream is released from the orifice 318 to the air supplying duct 3123 in a metered manner. Then the released fresh air will be supplied to the heat resistant helmet body 1 via the hose 12.

Referring to Figure 6, when the amount of the compressed air is lowered to a preset level, the upward pressure exerted onto the actuator 314 is also lowered such that the actuating spring 313 is pushed downward and applies an downward force to the actuator 314. By this arrangement, the inclining angle of the actuator 314 within the actuating portion 3141 is increased such that a further

distance of the pressing tab 42 is displaced by the discharging valve 316. By this arrangement, the amount of the air stream released is still kept in a constant manner. As a result, the air stream supplied to the helmet body 1 is kept same always.

Still referring to Figure 1 and which is a schematic illustration of the application of the rescuing helmet. In case a fire accident is encountered, the user may simply wear on the helmet body 1 and dispose the air tank 4 in front of the chest with the fastening strap 2. Then the user may simply depress the switching portion 311 of the metering throttle 31. Then the helmet body 1 is immediately supplied with a constant air stream. On the other hand, when the switching portion 311 is depressed, the light triggering portion 33 is also triggered such that the light 333 is also lit on. By this arrangement, the user may see clearly to find the way out the accident. On the other hand, as the air tank 4 and the battery may last for a certain of period, the chance of getting survived is also increased.

Referring to Figure 7 and which is a plan view of the other embodiment of the rescuing embodiment made according to the present invention. The air tank 4 can be an oxygen container 5 and the light 333 of the triggering portion 33 can be disposed at side of the oxygen container 5. The top of the oxygen container 5 is extended with a hanging strap 51 which can be used to hang the oxygen container 5 onto the wall. By this arrangement, the oxygen container 5 is readily accessible when needed, i.e. the user can be immediately supplied with fresh air.

Referring to Figure 8, another embodiment of the rescuing helmet is shown. It can be readily seen that there are two air tanks 4 are disposed within the oxygen container which is specially suitable for sky building. As the amount of the air is increased, the chance of being rescued during a fire accident

happened to the sky building is also increased. In use, the switch 52 can be rotated such that a pressing tab 53 is directly pressed against the switching portion 311 to switch on the air supply.

From the forgoing description, it can be readily appreciated that the rescuing helmet features a simple, compact configuration which can be readily manufactured with lowered cost. While particular embodiment of the present invention has been illustrated and described, it would be obvious to those skilled in the art that various other changes and modifications can be made without departing from the spirit and scope of the invention. It is therefore intended to cover in the appended claims all such changes and modifications that are within the scope of the present invention.

**Claims:**

1. A rescuing helmet having illuminating device of the type which includes a heat resistant helmet body, a fastening strap, a controlling unit and compressed air tank;

said heat resistant helmet body being provided with an air conduct for connecting a hose thereof, the lower peripheral of said helmet body being provided with a resilient strap and the lower portion of said resilient strap being provided with a fastening strap, the other end of said fastening strap being connected with an air tank, the top outlet of said air tank being provided with a controlling unit which is configured with a metering throttle, a cover and a light triggering device, said metering throttle being provided with an air supplying duct to supply the fresh air to said helmet body via a hose; characterized in that

said metering throttle is configured with a main barrel having a first receiving chamber at top and which is disposed with an actuating spring and an actuator, the outer peripheral of said main barrel being provided with an air supplying duct which is aligned with an orifice which is located at the wall of the main barrel, said main barrel being provided with a switching portion atop, said actuator being provided with an annular groove in which a rubber ring is disposed and which is pressed against to the inner wall of said first receiving chamber, said main barrel being further provided with a second receiving chamber which is located under said actuating portion of the actuator and which is slantly disposed, the lower portion of said actuating rod being extended into said second receiving chamber and further pressing against a discharging valve disposed thereunder, the lower end of said discharging valve being passed through an opening of a washer and which is further extended into a nozzle of said air tank, wherein said main barrel is screwed onto the nozzle of said air tank and a cover is used to enclose it;



wherein when those components are assembled in order, said helmet body can be simply worn on the head of the user and then depress said switching portion of said metering throttle such that a constant air stream of fresh air is supplied to said helmet body, meanwhile, said light triggering portion is also triggered such to switch on said light for illuminating, by this arrangement, the user is provided with fresh air and light in a prolonged period.

2. A rescuing helmet having illuminating device as recited in claim 1, wherein said air tank can be readily replaced with an oxygen container, a hanging strap being disposed at side of said oxygen container for carrying said oxygen container on neck portion of the user.