

Dec. 18, 1962

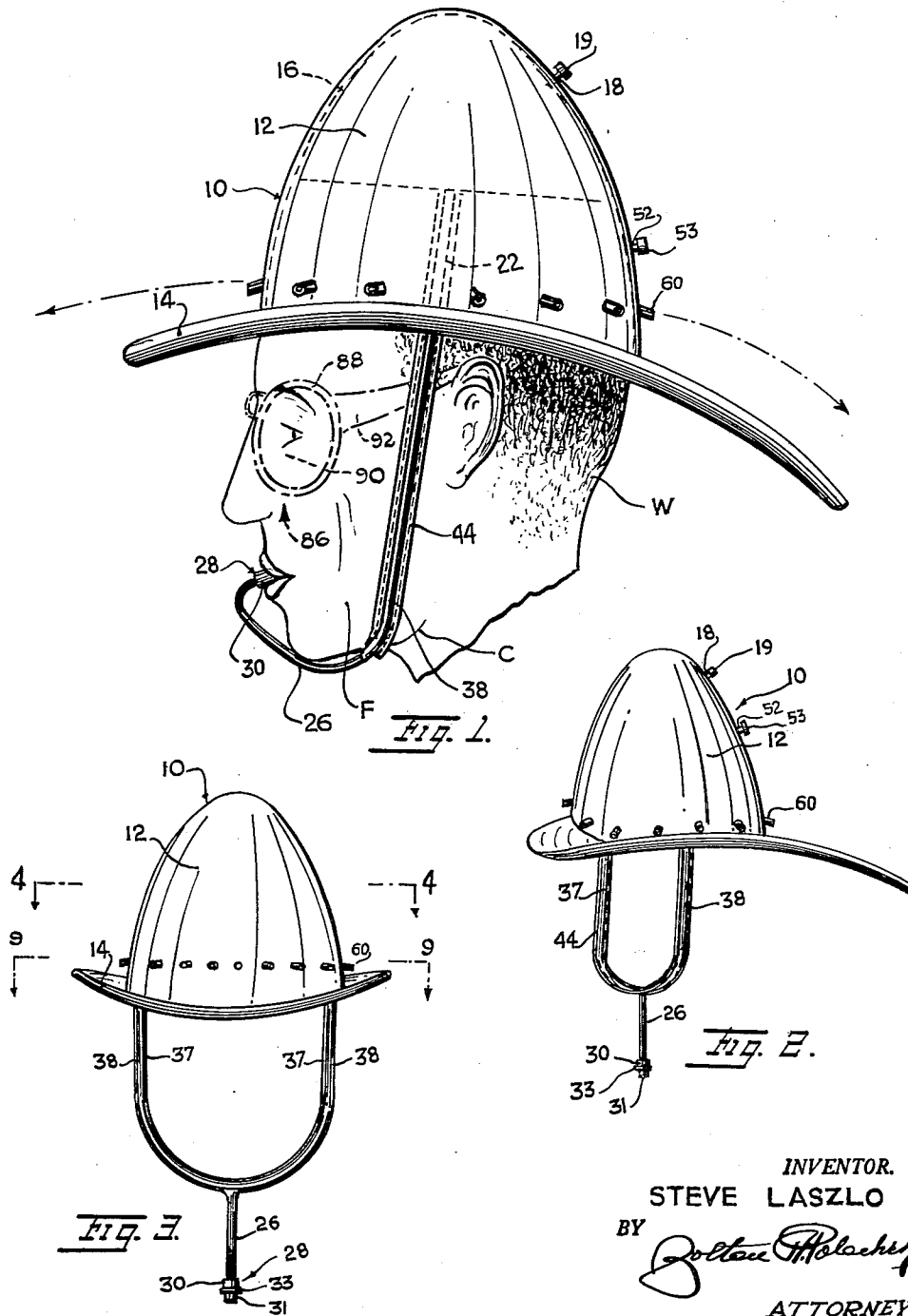
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3,068,865

AIR SUPPLY AND FIRE EXTINGUISHING HELMET

Filed March 1, 1961

4 Sheets-Sheet 1



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4 Sheets-Sheet 2

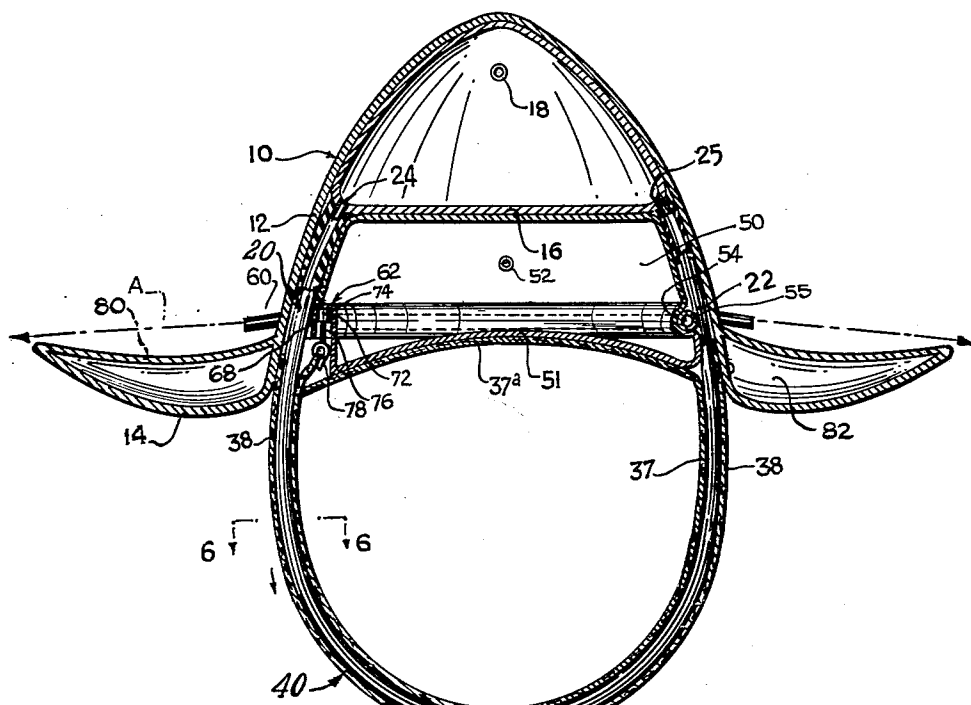


Fig. 5.

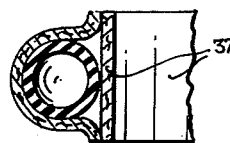


Fig. 6.

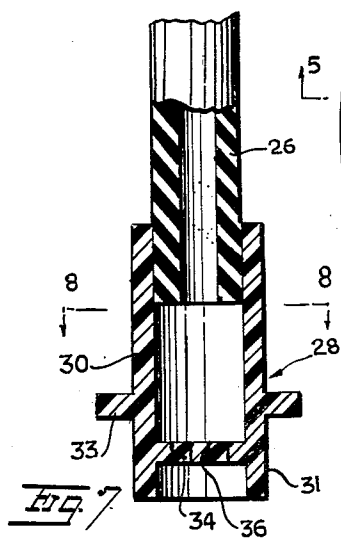


Fig. 7.

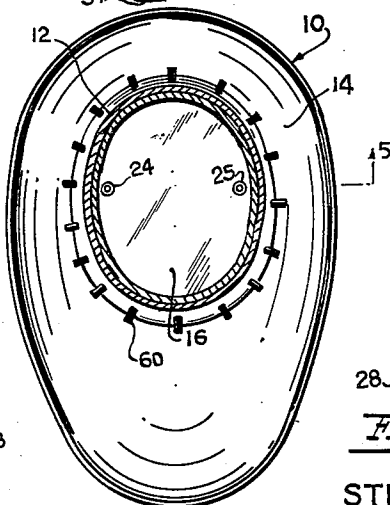


Fig. 4.

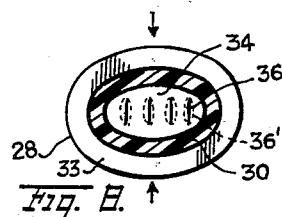


Fig. 8.

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4 Sheets-Sheet 3

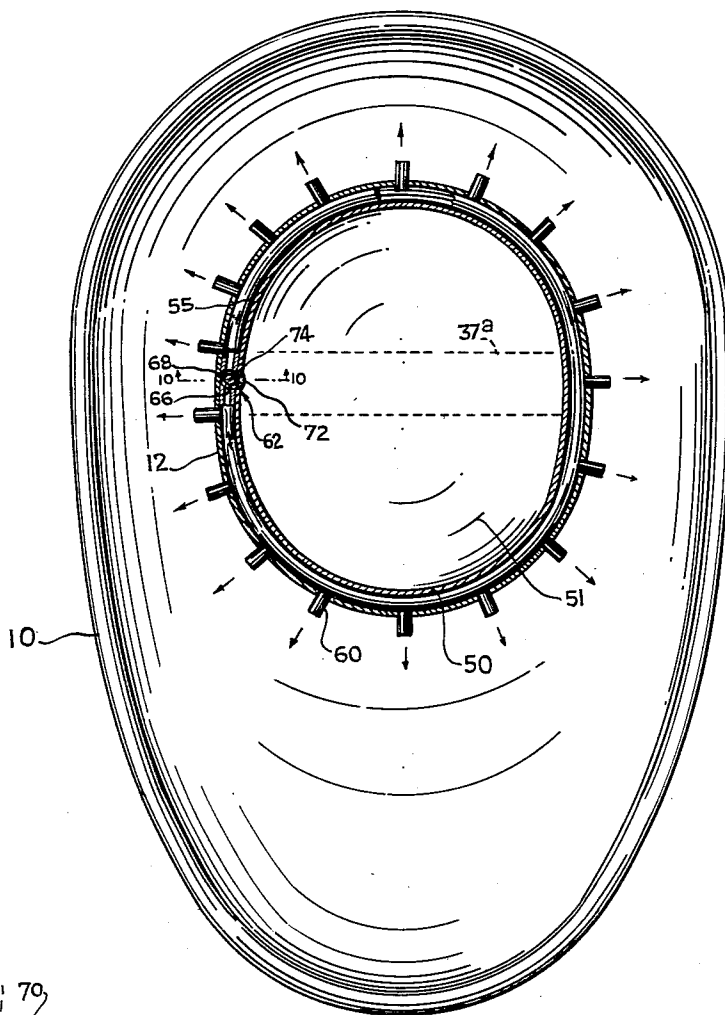


Fig. 9.

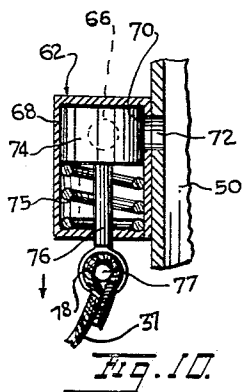


Fig. 10.

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4 Sheets-Sheet 4

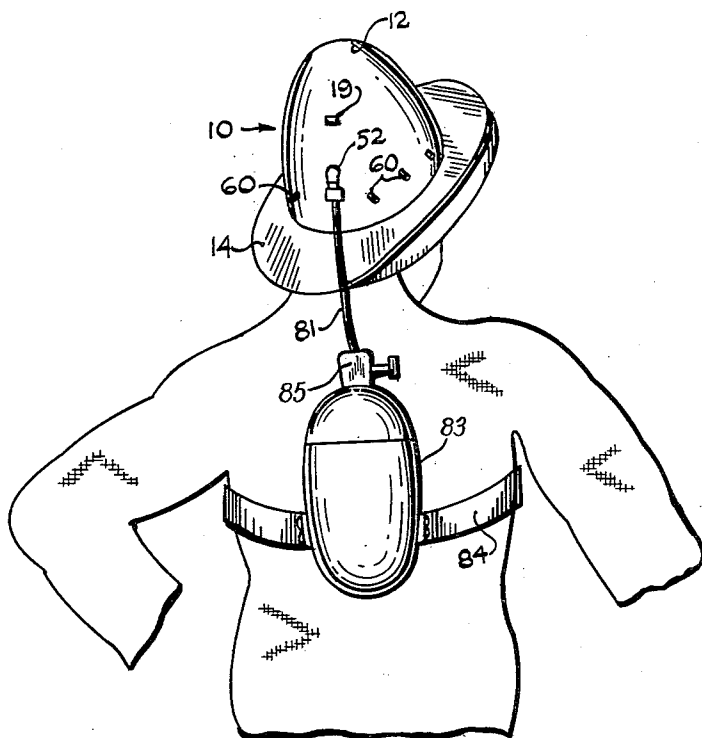


Fig. II.

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AIR SUPPLY AND FIRE EXTINGUISHING HELMET

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11 Claims. (Cl. 128—142)

This invention concerns a helmet or headpiece equipped with an emergency supply of air or oxygen for breathing by the wearer, and with an emergency supply of fire extinguishing gas adapted to be sprayed around the wearer.

According to the invention, a helmet or the like adapted for wear by a fireman, policeman, soldier, or other emergency worker is fitted with a first container of air or oxygen, and with a second container of nitrogen, carbon dioxide or non-combustible, fire extinguishing gas, a reserve supply of gas is also provided. The helmet has a chin strap including tubes extending from the first container to a nozzle adapted to be held in the wearer's mouth for releasing air or oxygen from the container. The nozzle includes a plug provided with an apertured partition. Upon pressing the nozzle between the wearer's teeth, the apertures in the partition open to release air or oxygen for breathing. The second container is fitted in the helmet or hat and is provided with a valve actuated by pulling the chin strap to release a fire extinguishing gas through a plurality of nozzles projecting all around the helmet.

The invention also contemplates a protector for the eyes from smoke and flames, and an audible signal to warn when the supply of gas is becoming exhausted.

It is therefore one object of the invention to provide a helmet headgear with a supply of emergency gas for breathing, adapted for voluntary use by the wearer of the headgear, the headgear having a chin strap including gas conducting tubes terminating in a valved mouthpiece for discharge of the gas into the mouth of the wearer.

Another object is to provide a helmet of the character described, with a plurality of radially extending nozzles connected to a container of non-combustible gas in a helmet, with valve means interposed between the nozzles and the container, the chin strap of the helmet being connected to the valve means for actuating the same and releasing the non-combustible gas to form a protective, gaseous fire shield all around the wearer of the helmet.

A further object is to provide signal means for warning that the supply of gas is becoming exhausted.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

FIG. 1 is a side elevational view of a helmet and eye protector embodying the invention.

FIG. 2 is an oblique side view on a reduced scale of the helmet.

FIG. 3 is a front elevational view of the helmet.

FIG. 4 is a horizontal sectional view on an enlarged scale taken on line 4—4 of FIG. 3.

FIG. 5 is a vertical sectional view on a further enlarged scale taken on line 5—5 of FIG. 4.

FIG. 6 is a sectional view on a still further enlarged scale taken on line 6—6 of FIG. 5.

FIG. 7 is an enlarged view of a portion of FIG. 5.

FIG. 8 is a sectional view taken on line 8—8 of FIG. 7.

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FIG. 9 is a sectional view on a further enlarged scale taken on line 9—9 of FIG. 3.

FIG. 10 is a sectional view on a still further enlarged scale taken on line 10—10 of FIG. 9.

FIG. 11 is a rear view of an auxiliary device used with this safety helmet.

Referring to the drawings, there is shown a helmet 10 such as used by firemen and other emergency workers. The helmet has an enlarged elevated crown 12 and horizontal brim 14. Within the crown is fitted a closed container 16 containing air or oxygen under pressure to be used for breathing purposes by the wearer of the helmet.

A valved nipple 18 extends through the helmet from the container for filling the container with air, oxygen or other gas under pressure. Two flexible rubber or plastic tubes 20, 22 are secured to nipples 24, 25, as best shown in FIG. 5. These tubes extend downwardly at opposite inner sides of the crown 12 and terminate in a common tube 26. On the free end of tube 26 is fitted a valved nozzle or mouthpiece 28. This nozzle has an oval cylindrical body 30 as shown in FIGS. 5, 7 and 8. A flange 33 is formed near the outer tubular end portion 31 of body 30. Within the tubular portion 31 is a transverse partition 34 having normally tightly closed slits 36; see FIGS. 7 and 8.

The lower portions of tubes 20, 22 extend below the brim 14. Each tube is enclosed in flexible leather or plastic strips 37, 38 defining a U-shaped chin strap 40 for the helmet. Members 37 are flat to abut the face F of the wearer. The chin strap fits under the chin C of the wearer W as shown in FIG. 1. Stitching 44 secures the strips 37, 38 together to form a tubular enclosure for the tubes 20, 22.

Normally the tube 26 depends below the chin C of the wearer and does not interfere with use of the helmet in any way. In an emergency, such as when the wearer is in a smoky atmosphere, the wearer will place nozzle 28 in his mouth with the flange 33 engaged between his lips. This will hold the nozzle in place, with the tubular end portion or nipple 31 located between the parted upper and lower front teeth of the wearer. When he wishes to breathe air from the container 16, the wearer will close his teeth upon the nipple 31. This will cause the partition 34 to flex and open the slits 36 to form apertures 36' as indicated in FIG. 8. The gas will be released into the mouth of the wearer for breathing. Upon opening his mouth to release the nipple 31, the slits 36 will close to seal the gas in the container. The container can easily be recharged with air, oxygen or other breathing gas through the valved nipple 18. A cap 19 can be provided on the nipple 18 as shown in FIGS. 1 and 2. The chin strap holds the helmet on the head of the wearer. It protects and supports the gas feeding tubes connected to the container 16.

Just below the container 16 is fitted another container 50 as best shown in FIGS. 5 and 9. This container holds a non-combustible gas under pressure. A one-way valve 52 extends from container 50 through the helmet. The container 50 can be refilled with gas via this valve. A cap 53 may be removably mounted on the end of the valve. The container has an annular recess or groove 54 extending all around it in which is disposed a pipe ring 55. The pipe ring 55 has a plurality of outlets to which are connected tubes or nozzles 60 which extend radially out of the helmet and are directed slightly downward. The nozzles 60 are spaced apart and arranged all around the crown of the helmet, as shown in FIGS. 1-5 and 9. A valve 62 is disposed between opposite ends of the ring 55. The ends of the ring are connected to outlets 66 in opposite sides of cylindrical valve housing 68 welded to container 50. The housing has an inlet 70 communicat-

ing with the interior of container 50 through an opening 72 in the wall of the container, as best shown in FIGS. 9 and 10. A piston 74 is movably mounted in the valve housing and is biased by spring 75 therein to close the openings 66 and 70. A shaft 76 extends downwardly from the piston through the lower end of the valve housing and carries pintle 77 engaging a loop 78 formed at one end of strip 37. The other end 37^a of strip 37 is extended laterally under the curved underside 51 of container 50. It may serve as a buffer or pad between the metal bottom of the container 50 and the top of the wearer's head.

The horizontal brim 14 is curved and is preferably provided with a cover 80 thereby converting the brim into a chamber 82 for holding a reserve supply of oxygen adapted to be released upon actuation of suitable valve means.

An audible signal in the form of a whistle or the like may be provided to be actuated by the supply of oxygen when the pressure reaches a predetermined low point.

The chin strap has sufficient elasticity so that the wearer can pull on the strap manually to cause the piston 74 to be retracted downwardly from its normally closed position in housing 68. This will clear the inlet and outlets of the pipe ring and permit the non-combustible gas such as carbon dioxide, to be discharged through the nozzles 60 as indicated by arrows A. The discharged gas will form a non-combustible gaseous curtain or shield all around the wearer of the helmet to protect him from flames in his vicinity. At the same time the wearer is not cut off from air for breathing since the helmet includes the emergency air supply in container 16 which will be released to the wearer at will upon actuation of the valve 28.

The invention can be applied to other forms of hats and helmets. It also provides for the protection of the eyes from contact with smoke and flames in the form of eye spectacles 86 comprising eyeglass frame 88 with eyeglasses 90 and templets 92 for supporting the spectacles on the ears of the wearer.

In FIG. 11 auxiliary tank 83 is secured to the body by belt supports 84 and is shown connected to the valve 52 by means of a suitable tubing 81 to supply non-combustible gas under pressure to be used as fire extinguisher. When the pressure in the tank 83 is low, a whistle or other signal 85 will be actuated.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. In an article of headgear having a crown, a closed container for a gas fitted in the crown, outlets in the container at opposite sides of the crown, a pair of tubes connected to said outlets, said tubes terminating in a common outlet tube, a valved nozzle attached to the end of said outlet tube, and members constituting a U-shaped chin strap for the headgear enclosing portions of said tubes extending outside of the crown, said nozzle including a flexible cylindrical body, an annular flange extending radially outwardly of said body, said body having a tubular portion extending beyond said flange, and a partition in said body extending across said tubular portion, said partition having slits normally closed to hold the gas in the container, said tubular portion being flexible to open the slits and form apertures for releasing the gas from the container into the mouth of the wearer.

2. In an article of headgear having a crown, a closed container for a gas fitted in the crown, outlets in the container at opposite sides of the crown, a pair of tubes connected to said outlets, said tubes terminating in a common outlet tube, a valved nozzle attached to the end of said outlet tube, and members constituting a U-shaped chin strap

for the headgear enclosing portions of said tubes extending outside of the crown, said nozzle including a flexible cylindrical body, an annular flange extending radially outwardly of said body, said body having a tubular portion extending beyond said flange, and a partition in said body extending across said tubular portion, said partition having slits normally closed to hold the gas in the container, said tubular portion being flexible to open the slits and form apertures for releasing the gas from the container into the mouth of the wearer, there being a valved nipple extending through the crown from the container for filling the container with said gas under pressure.

3. In an article of headgear having a crown, a closed container for a gas fitted in the crown, outlets in the container at opposite sides of the crown, a pair of tubes connected to said outlets, said tubes terminating in a common outlet tube, a valved nozzle attached to the end of said outlet tube, and members constituting a U-shaped chin strap for the headgear enclosing portions of said tubes extending outside of the crown, said nozzle including a flexible cylindrical body, an annular flange extending radially outwardly of said body, said body having a tubular portion extending beyond said flange, and a partition in said body extending across said tubular portion, said partition having slits normally closed to hold the gas in the container, said tubular portion being flexible to open the slits and form apertures for releasing the gas from the container into the mouth of the wearer, there being a valved nipple extending through the crown from the container for filling the container with said gas under pressure, said members being flexible strips stitched together.

4. In an article of headgear having a crown, a closed container for a gas fitted in the crown, outlets in the container at opposite sides of the crown, a pair of tubes connected to said outlets, said tubes terminating in a common outlet tube, a valved nozzle attached to the end of said outlet tube, and members constituting a U-shaped chin strap for the headgear enclosing portions of said tubes extending outside of the crown, said nozzle including a flexible cylindrical body, an annular flange extending radially outwardly of said body, said body having a tubular portion extending beyond said flange, and a partition in said body extending across said tubular portion, said partition having slits normally closed to hold the gas in the container, said tubular portion being flexible to open the slits and form apertures for releasing the gas from the container into the mouth of the wearer, there being a valved nipple extending through the crown from the container for filling the container with said gas under pressure, said members being flexible strips stitched together, one of said strips at each inner side of each tube being substantially flat for fitting close to the face of the wearer.

5. An emergency headgear, comprising a crown, a container of compressed gas in the crown, outlets in the container at opposite sides of the crown, a U-shaped chin strap secured to sides of the headgear, and tubes enclosed by said chin strap, said tubes being connected to said outlets, and terminating at a valved mouthpiece for releasing said gas into the mouth of the wearer of the headgear, said valved mouthpiece having a flexible slitted portion adapted to be compressed for opening the slits to form apertures, said apertures closing when the said slitted portion is unflexed.

6. An emergency headgear, comprising a crown, a container of compressed gas in the crown, outlets in the container at opposite sides of the crown, a U-shaped chin strap secured to sides of the headgear, and tubes enclosed by said chin strap, said tubes being connected to said outlets, and terminating at a valved mouthpiece for releasing said gas into the mouth of the wearer of the headgear, said valved mouthpiece having a flexible slitted portion adapted to be compressed for opening the slits to form apertures, said apertures closing when the said slitted

portion is unflexed, and valved means connected to the container for filling the container with said gas.

7. An emergency headgear, comprising a crown, a container of compressed gas in the crown, outlets in the container at opposite sides of the crown, a U-shaped chin strap secured to sides of the headgear, and tubes enclosed by said chin strap, said tubes being connected to said outlets, and terminating at a valved mouthpiece for releasing said gas into the mouth of the wearer of the headgear, said valved mouthpiece having a flexible slitted portion adapted to be compressed for opening the slits to form apertures, said apertures closing when the said slitted portion is unflexed, and valved means connected to the container for filling the container with said gas, said crown being elongated and tapered in form, said container fitting into the closed end of the crown.

8. In an article of headgear having a crown, a closed container for non-combustible gas fitted in the crown, a pipe ring extending around the container inside the crown, a valve having an inlet communicating with the interior of the container, said pipe ring having opposite ends connected to outlets of said valve, a plurality of nozzles extending outwardly all around the crown, one end of said nozzles communicating with the interior of the ring, and means for actuating the valve to discharge said gas and form a gaseous fireproof curtain around the wearer of the headgear.

9. In an article of headgear having a crown, a closed container for a breathable gas fitted in the crown, outlets in the container at opposite sides of the crown, a pair of tubes connected to said outlets, said tubes terminating in a common outlet tube, a valved nozzle attached to the end of said outlet tube, a chin strap enclosing portions of the tubes extending outside of the crown, a second container of non-combustible gas fitted in the crown, a plurality of nozzles extending out of said crown all around the same, valve means operatively connecting the nozzles and the second container, said chin strap having a portion connected to said valve means for actuating same when the strap is pulled.

10. In an article of headgear having a crown, a closed container for a gas fitted in the crown, outlets in the container at opposite sides of the crown, a pair of tubes connected to said outlets, said tubes terminating in a common outlet tube, a valved nozzle attached to the end of said outlet tube, and members constituting a U-shaped chin strap for the headgear enclosing portions of said tubes extending outside of the crown, said nozzle including a flexible cylindrical body, an annular flange extending radially outwardly of said body, said body having a tubular portion extending beyond said flange, and a partition in said body extending across said tubular portion, said partition having slots normally closed to hold the gas in the container, said tubular portion being flexi-

ble to open the slits and form apertures for releasing the gas from the container into the mouth of the wearer, there being a valved nipple extending through the crown from the container for filling the container with said gas under pressure, another container for non-combustible gas fitted in the crown adjacent the first named container, a plurality of nozzles extending out of said crown all around the same, valve means operatively connecting the nozzles and the second container, said chin strap having a portion connected to said valve means for actuating the same when the strap is pulled.

11. In an article of headgear having a crown, a closed container for a gas fitted in the crown, outlets in the container at opposite sides of the crown, a pair of tubes connected to said outlets, said tubes terminating in a common outlet tube, a valved nozzle attached to the end of said outlet tube, and members constituting a U-shaped chin strap for the headgear enclosing portions of said tubes extending outside of the crown, said nozzle including a flexible cylindrical body, an annular flange extending radially outwardly of said body, said body having a tubular portion extending beyond said flange, and a partition in said body extending across said tubular portion, said partition having slits normally closed to hold the gas in the container, said tubular portion being flexible to open the slits and form apertures for releasing the gas from the container into the mouth of the wearer, a valved nipple extending through the crown from the container for filling the container with said gas under pressure, another container for non-combustible gas fitted in the crown, a pipe ring extending around the container inside the crown, a valve housing having an inlet communicating with the interior of the container, an outlet in said valve housing, said pipe ring having an inlet connected to said housing outlet, a plurality of nozzles connected to sides of the pipe ring and extending radially all around the crown, and valve means in said housing for opening and closing the inlet and outlet thereof, said chin strap having a portion connected to said valve means whereby pulling on the chin strap actuates said valve means and discharges said non-combustible gas to form a gaseous fireproof curtain all around the wearer of the headgear, while the first-named container supplies gas for breathing by said wearer.

References Cited in the file of this patent

UNITED STATES PATENTS

407,527	Hilchen	July 23, 1889
2,354,840	Seletz	Aug. 1, 1944
2,560,215	Christensen	July 10, 1951
2,908,272	Motsinger	Oct. 13, 1959

FOREIGN PATENTS

262,945	Great Britain	Dec. 23, 1926
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