Oct. 15, 1957 W. B. REED 2,809,374

AVIATORS' HELMETS

Filed Nov. 7, 1952 3 Sheets-Sheet 1

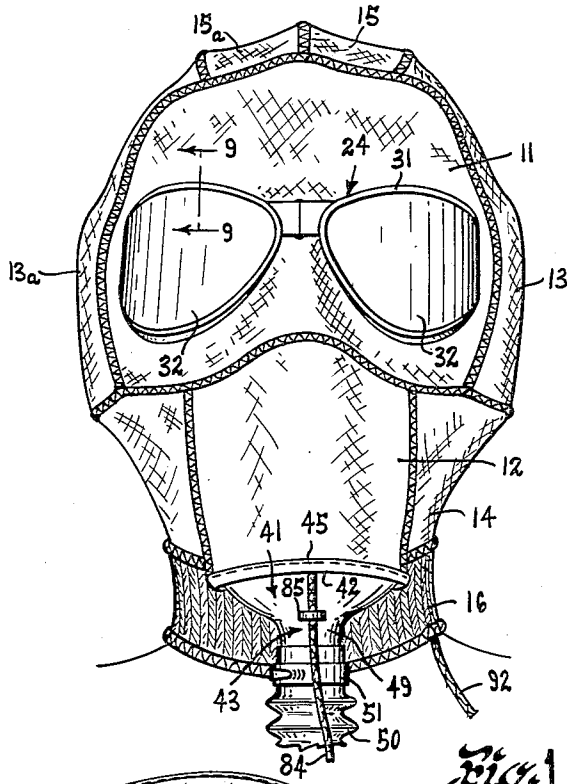


Fig. 1

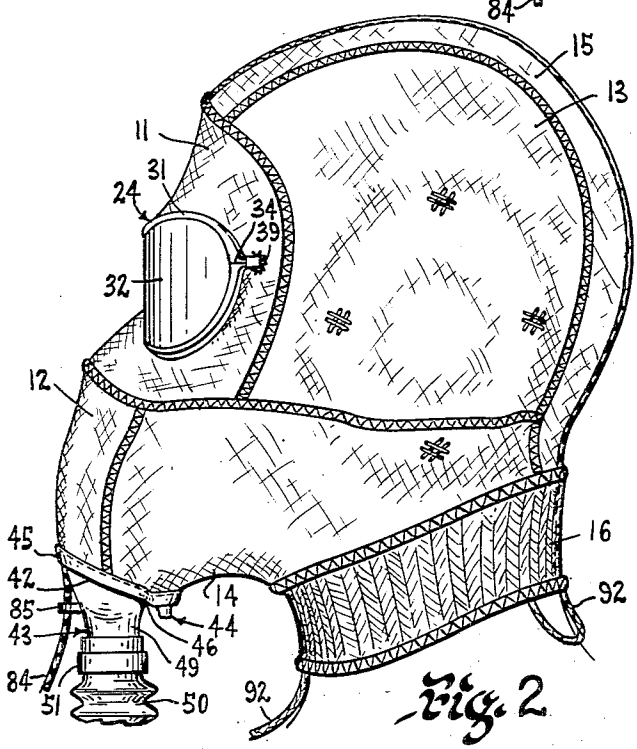


Fig. 2

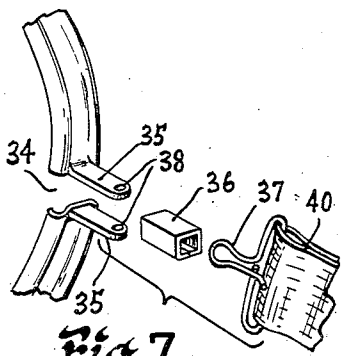


Fig. 7

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AVIATORS' HELMETS

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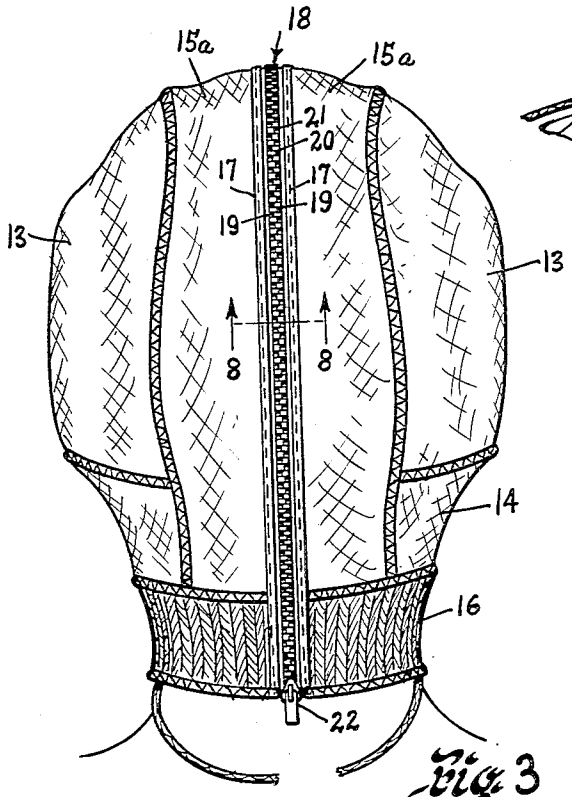


Fig. 3

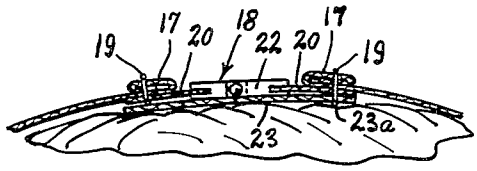


Fig. 8

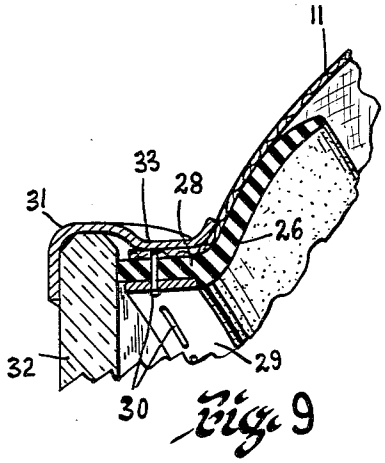


Fig. 9

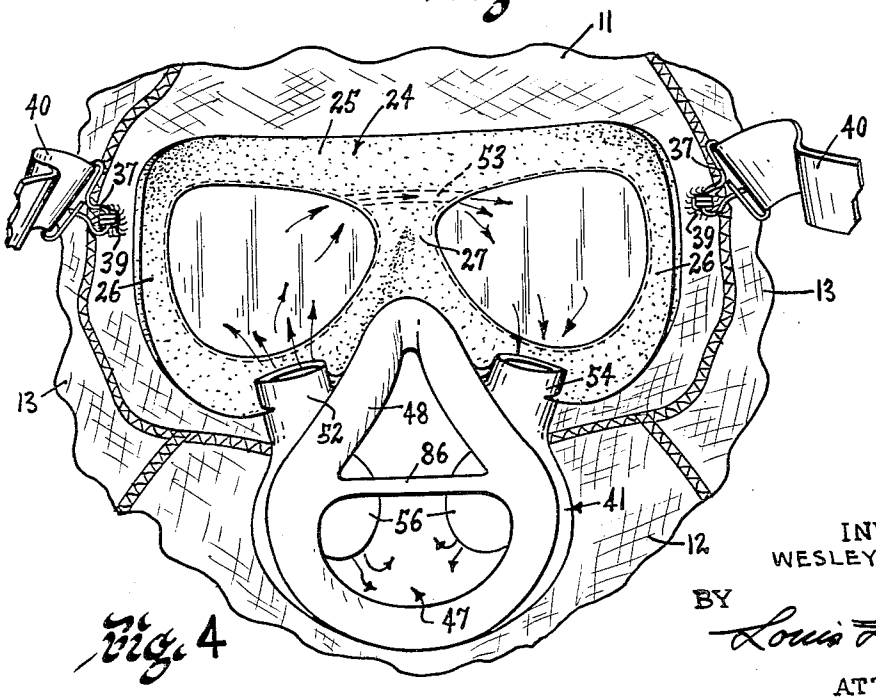


Fig. 4

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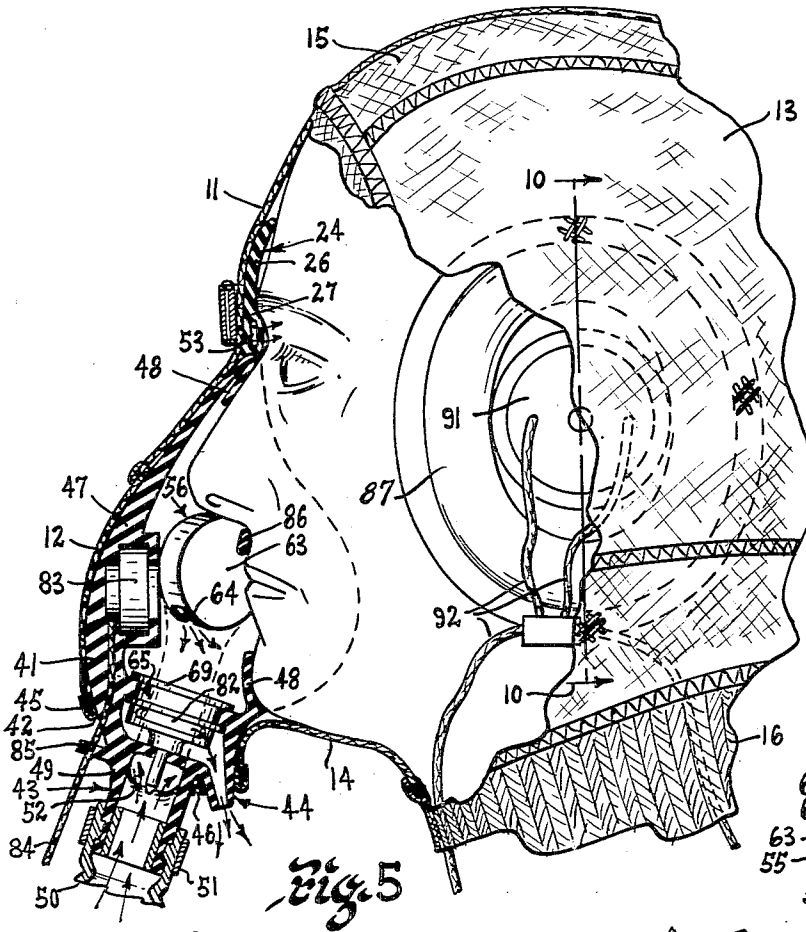


Fig. 5

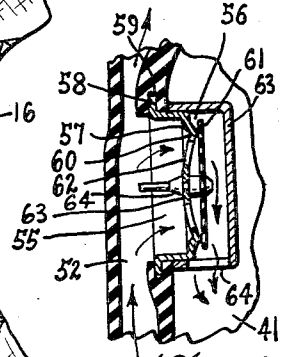


Fig. 12

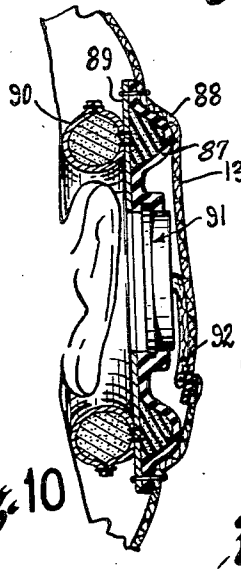


Fig. 10

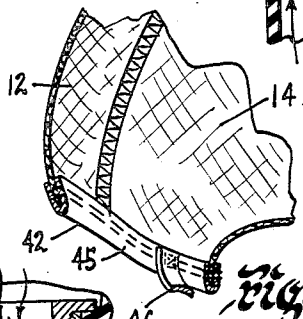


Fig. 6

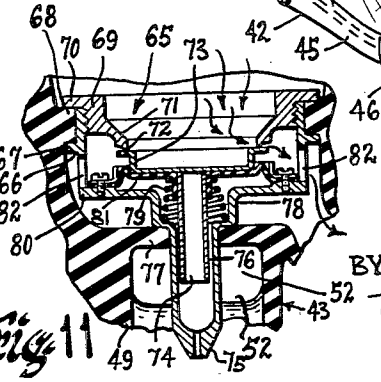


Fig. 11

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AVIATORS' HELMETS

Wesley B. Reed, North Woodstock, Conn., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts

Application November 7, 1952, Serial No. 319,394

5 Claims. (Cl. 2—6)

This invention relates to improvements in aviators' helmets and has particular reference to helmets of the type adapted to enclose the entire head of an individual.

One of the primary objects of this invention is to provide an aviator's helmet which is relatively light in weight, comfortable to wear, and efficient in its use.

Another object is to provide a helmet which is shaped to fit completely over the head of a wearer and is formed as a composite structure comprising a plurality of flexible panels of fabric materials, some of which panels are elastic, enabling the helmet to be automatically adjusted to an individual's head, and other panels of which are substantially non-elastic to enable the composite parts of the device to be efficiently retained in desired positional relation on the wearer's head.

Another object is to provide a helmet of the above character wherein selected portions of the composite structure are shaped to efficiently and comfortably support additional utility equipment such as an oxygen mask, goggles and earphones in respective positions of use.

Another object is to provide a helmet having improved means for securely supporting a goggle frame whereby lenses may be easily and quickly inserted or interchanged in said goggle frame without removal of the frame from the helmet.

Another object is to provide a helmet of the above character which is relatively simple in construction and which can be easily and quickly applied to or removed from the head of a wearer.

Other objects and advantages of the invention will become apparent from the following description taken in connection with the accompanying drawings, in which:

Fig. 1 is a front elevational view of a helmet embodying the invention;

Fig. 2 is a side elevational view of the helmet shown in Fig. 1;

Fig. 3 is a rear elevational view of the helmet shown in Fig. 1;

Fig. 4 is a fragmentary rear elevational view of the facial portion of the helmet showing the goggles and oxygen mask attached thereto;

Fig. 5 is a fragmentary sectional view of the helmet illustrating particularly the method of supporting the oxygen mask and earphones;

Fig. 6 is a fragmentary sectional view of the lower end of the mask-supporting portion of the helmet;

Fig. 7 is an exploded view illustrating the means for securing the lens retaining rims;

Fig. 8 is an enlarged sectional view taken substantially on line 8—8 of Fig. 3;

Fig. 9 is an enlarged sectional view taken substantially on line 9—9 of Fig. 1 looking in the direction of the arrows;

Fig. 10 is a vertical sectional view taken on line 10—10 of Fig. 5 looking in the direction of the arrows;

Fig. 11 is an enlarged vertical sectional view through approximately the center of the exhalation valve; and

Fig. 12 is an enlarged vertical sectional view through one of the inhalation valves.

Referring more particularly to the drawings wherein like characters of reference designate like parts throughout the several views, the helmet embodying the invention is comprised of a plurality of elastic and non-elastic panels which are stitched together to form the structure illustrated in Figs. 1, 2 and 3. The helmet is provided with an elastic panel 11 which is adapted to be located over the forehead, eyes and upper portions of the cheeks and nose of the wearer, a non-elastic panel 12 which is attached to the lower edge of the panel 11 and which extends downwardly therefrom, a pair of non-elastic panels 13 and 13*a* which are attached to the side edges of the panel 11 and which are adapted to cover the temples, ears and adjacent portions of the sides of the wearer's head, and an elastic panel 14 which is adapted to extend beneath the chin of the wearer and having its forward edges attached to the side edges of the panel 12 and having portions adapted to be superimposed over the sides of the wearer's chin, lower cheeks and sides of the upper neck, the panel 14 being attached at its upper edges to the respective panels 13 and 13*a* as well as to a portion of the lower edge of the panel 11. One end of each of a pair of elongated elastic panels 15 and 15*a* is attached in side by side relation to the upper edge of the panel 11, extending rearwardly and downwardly therefrom, and are attached at their sides to the respective upper and rear edges of the panels 13 and 13*a*, thus being adapted to extend along the top and back of a wearer's head. The panels 15 and 15*a* extend downwardly along the back of the wearer's neck and are attached to the respective ends of the elastic panel 14 and to the adjacent upper edge of an elastic neckband 16 which is attached also to the lower edge of the panel 14, whereby it may snugly encircle the neck of a wearer.

The non-elastic panels 12 and 13—13*a* are preferably formed of knitted nylon which is, like all knitted fabric, easily deformable and capable of slight stretching. However, the so-called elastic panels 11, 14, 15 and 15*a* are formed of a material which may be stretched and deformed to a relatively great extent in comparison with the non-elastic panels, such as rubber or a combination of knitted nylon and latex. The neckband 16 is formed with elastic threads and is "ribbed" knit to provide a still greater degree of elasticity. The elongated panels 15 and 15*a* of the helmet have their adjacent edges hemmed as indicated at 17 in Figs. 3 and 8 and have attached to the hems 17, as by stitching or the like 19, a conventional zipper fastener 18. The zipper fastener is comprised of the conventional pair of fabric strips 20 having their adjacent edges provided with the closure tabs 21 (Figs. 3) which are adapted to be joined by a slidable closure member 22. A liner strip 23 (Fig. 8) is connected at one side as by stitching 23*a* to one of the hems 17 and is adapted to overlie the wearer's head beneath the zipper thereby preventing the wearer's hair from becoming entangled in the zipper.

All of the panels 11, 12, 13, 14, 15 and 15*a* are stitched together as described preferably by use of "flat lock" seams which form a very secure structure wherein the joined edges lie relatively flat.

The helmet is constructed in the above-described manner embodying separate elastic and substantially non-elastic panels since it is desirable that a standardized size and shape be made which will readily be adaptable for wear by individuals having various sizes and shapes of heads. The elastic panels will, due to their inherent elastic characteristics, readily conform to the heads of the wearers while the substantially non-elastic panels will support utility apparatus such as oxygen masks and ear-

phones to be worn therewith. The neckband **16** is provided with exceptional elasticity since in the event that an emergency arises wherein a wearer must quickly rid himself of a helmet, he can grasp it at the top of the head and pull it off without unfastening the zipper. In such a case, the elastic panel **14** and neckband **16** will readily stretch to such an extent that the helmet may be readily removed. The entire composite construction is such, however, that under all normal conceivable conditions of use, the helmet will remain in desired wearing position.

Another beneficial feature of such a construction is that there is practically no place where an air stream can readily gain access to the interior of the helmet and accidentally tear the helmet off the wearer's head.

In the elastic front panel **11**, there are provided two spaced eye openings over which goggles **24** are mounted. The goggles **24** comprise a supporting member or mask **25** formed of rubber or other similar resilient material shaped to fit over the eyes of the wearer and having a pair of spaced eye-encircling portions **26** which are connected by a bridge portion **27** (Figs. 4, 5 and 9). The mask **25** is positioned on the inner side of the helmet portion **11** with annular flanges **28** on the eye-encircling portions **26** extending through the openings in the helmet portion **11**, as shown in Fig. 9. An annular stiffener **29** formed of relatively rigid material such as plastic, metal, or the like is disposed upon the inner side of each flange **28**, and the superimposed flange-like portion of the panel **11** adjacent the opening is secured thereto through the flange **28** as by stitches, staples, rivets, or the like **30**.

Mounted over the eye openings are rim members **31** which are shaped to encircle and receive a pair of lenses **32**, the rim members **31** having portions **33** which extend rearwardly into overlying relation with the stiffener **29** and portions of the mask and helmet secured thereto. The rim members **31** completely encircle the respective lenses **32** and are split in the temporal regions as at **34** (Figs. 2 and 7). Each end of the rim member at the split is provided with an outwardly extending tongue or lug **35**. When securing a lens **32** in position, the lens **32** is mounted in the rim member **31** and the split **34** closed by bringing the tongues **35** together. This causes the rim member **31** to assume a tightly fitted relation with the contour edge of the lens. A hollow slidable locking member **36** is then mounted over the tongues **35** and a clip **37** is inserted through aligned openings **38** adjacent the ends of the tongues **35** to prevent withdrawal of the locking member **36**, thus retaining the parts in desired assembled relation.

The tongues **35** and locking member **36** are adapted to extend through restricted openings **39** provided therefor in the panel **11** and the clips **37** are thus accessible only from the interior. The clips **37** are carried by the ends of a headband **40** which is adapted to extend around the head of the wearer.

To change a lens, it is necessary to remove the clip **37**, withdraw the tongues **35** through openings **39**, and remove the locking member **36** to allow the ends of the rim member **31** to separate through the inherent resiliency of the material thereof. After a lens has been replaced, the parts of the device may be easily reassembled as described.

The oxygen mask **41** may be of conventional design and is adapted to be carried in the lower front of the helmet by the non-elastic panel **12** and adjacent portions of the elastic panel **14**. The lower edges of the panels **12** and **14** are so constructed that an opening **42** is provided through which the inlet valve-supporting portion **43** of the mask **41** extends as well as does the outlet vent portion **44** (Figs. 2 and 5). The edges of the opening **42** are reinforced by a strip **45** of reinforcing material such as a strong fabric, leather, plastic or the like which is doubled over along its edge (Figs. 5 and 6) and stitched, cemented or otherwise relatively permanently secured thereto. Supporting means is provided by a narrow strip **46** of the reinforcing material, which strip **46** is attached at its ends to the strip **45** at opposed sides of the opening **42** and which is adapted to extend beneath the mask **41** between the inlet valve-supporting portion **43** and outlet portion **44** to aid in supporting the mask comfortably and securely in position of use.

The oxygen mask **41** also comprises a cupped face piece **47** which is adapted to fit over the nose and mouth of the wearer beneath the helmet. The face piece **47** is preferably provided with flexible edge portions **48** for intimate comfortable engagement in air-sealing relation with the face of the wearer, as shown in Figs. 4 and 5. The inlet valve-supporting portion **43** is formed in the lower end of the face piece **47** and comprises a tubular member **49** through which air enters from an air hose **50** which is securely connected to the tubular member **49** as by a conventional ring-like connector **51**. From the tubular member **49** the air passes directly through a duct **52** (Figs. 4 and 11) into the goggles **24**, ventilating first one lens **32** and then passing through a duct **53** in the bridge portion **27** of the goggles to the other lens **32**. The air then passes from the goggles through a duct **54** back into the tubular member **49**. Thus, air is continually circulated over the inner surface of the lenses **32**, preventing them from fogging or misting. Openings **55** (Fig. 12) are provided for permitting air also to pass from the ducts **52** and **54** into the interior of the mask **41**, inhalation valves **56** being provided to permit the air to flow only in a direction into the mask **41**. An annular member **57** (Fig. 12) is provided with a flanged portion **58** extending thereabout, said flanged portion **58** being disposed in an annular groove **59** formed in the mask about the opening **55**. The member **57** is provided with an annular raised seat **60** which is adapted to be contacted by a resilient flutter valve **61**, the flutter valve **61** being disc-like in shape and adapted to overlie the central opening **62** in the annular member **57**. The member **57** is provided with a plurality of spoke-like elements extending across the opening **62** therein to a central hub portion **63** to which the flutter valve **61** is attached as by connecting member **64**. Thus, it will be apparent that inhalation by the wearer of the mask will draw air inwardly from the ducts **52** and **54** through the openings **55** and **62**, and causing the resilient flutter valve **61** to be forced inwardly away from the raised annular seat **60**, permitting the air to pass into the interior of the mask **41**. Exhalation by the wearer will, however, urge the exhaled air against the outer surface of the flutter valve **61** urging it in a direction toward the valve seat **60**, causing the flutter valve **61** thus to seal the opening **62** and thus prevent the air from passing back into the ducts **52** and **54**.

A relatively rigid cover **63** is adapted to be mounted over the inner side of each inhalation valve **56** for protection of the valve parts, the cover **63** being provided in one side thereof with an aperture **64** through which the air is permitted to pass. The directions of flow of air throughout the device are indicated by arrows.

An exhalation valve **65** (Figs. 5 and 11) is located in the inlet valve-supporting portion **43** of the mask **41** and comprises an inner cylindrical member **66** which is secured to the inner portion of the mask **41** adjacent the supporting portion **43**, the cylindrical member **66** being provided with an annular flange **67** which is adapted to rest against the lower surface of an annular ledge **68** formed on the inner surface of the mask **41**. The cylindrical member **66** is provided with an inner threaded portion to which is adapted to be threadedly secured an annular member **69** which is provided with an annular flange **70** which is adapted to be disposed against the upper surface of the annular ledge **68**, thus serving to retain the exhalation valve in desired position in the mask. The annular member **69** is provided with an inwardly extending annular portion **71** which is provided on its lower surface with an annular knife edge valve seat **72** which is adapted to be engaged by a valve member **73** carried

at one end of a reciprocal member 74 which is disposed within an elongated tubular valve-supporting member 75 extending into the interior of the supporting portion 43 through an opening 76 formed in the lower portion 77 of the mask 41. The tubular valve-supporting member 75 is enlarged as indicated at 78 and has positioned therein a coil spring 79 which is adapted to urge the valve member 73 in a direction toward the valve seat 72. The member 75 is further provided at its upper end with an annular flange-like portion 80 which is formed integrally with the lower end of the cylindrical member 66 and to which is connected a resilient sealing member 81. The sides of the cylindrical member 66 are provided with a plurality of openings 82 and thus air is permitted to leave the mask, upon exhalation by the wearer and consequent movement of the valve member 73 away from the valve seat 72, through the space therebetween and through the openings 82 out through the exhalation vent 44 (Figs. 5 and 11) as indicated by the arrows.

A recess located in the interior of mask 41 adjacent the location of the mouth of a wearer contains a microphone 83 which is connected to a suitable audio system by wiring 84 which passes through the face piece 47 and emerges adjacent the upper end of the tubular member 49. The tubular member 49 carries an apertured tongue 85 through which the wiring 84 passes to lessen the chance of the wiring 84 from pulling out of the microphone 83 when becoming twisted or entangled.

The face piece 47 is provided with a resilient cross member 86 which is adapted to engage the face of the wearer between the nose and upper lip (Figs. 4 and 5). This aids in retaining the face piece 47 in its cupped shape when being worn, thus also serving to maintain the microphone in desired spaced relation with the mouth of the wearer.

Sewed or otherwise securely connected to the inner surface of each non-elastic panel 13 of the helmet is an annular trough-shaped member 87 of resilient material (Figs. 5 and 10). The trough-like portion of the member 87 is filled with a soft padding 88 which is retained in place by an annular cover 89 to which is secured an annular padded ring or doughnut 90 which is adapted to be located against the side of the wearer's head in encircling relation with the ear. In the central opening of each of the annular trough-shaped members is securely located an earphone 91. The earphones 91 are connected together and to said audio system by wiring 92 which passes out of the helmet beneath the neckband 16.

It will be apparent that a helmet constructed as described with portions of elastic and non-elastic material will readily adapt itself when donned to the shape and size of the wearer's head, with the elastic portions easily shaping themselves to the specific configuration of the head and the non-elastic portions retaining the parts of the composite structure in desired positional relations.

From the foregoing description, it will be apparent that all of the objects and advantages of the invention have been accomplished. While the novel features of the invention have been shown and described and are pointed out in the annexed claims, it is to be understood that various omissions, substitutions and changes in the construction and arrangement of parts may be made by those skilled in the art without departing from the spirit of the invention. Therefore, it is to be understood that all matter shown or described is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. A helmet comprising a plurality of panels of cloth-like material connected at the meeting edges thereof to form a composite structure shaped to enclose and have a relatively intimate fit with the head of the wearer, said panels consisting of an upper elastic front panel having a portion shaped substantially to and to overlie the forehead, perforated portions shaped to fit about the eyes and to overlie the nose and upper front portions of the cheeks

of the wearer, a non-elastic lower front panel secured to the lower edge of the upper front panel and being shaped to overlie the lower front oral region of the face, non-elastic side panels having their forward edges shaped to and secured to the side edges of the upper front panel and being shaped to fit the sides of the head in overlying relation with the aural regions and having their upper and rear edges spaced relative to each other and shaped to the general shape of the upper and rear sides of the head, elongated elastic panels shaped to extend along the top and back of the head, each of said elongated elastic panels having its forward edge shaped to and secured to the adjacent upper edge of the upper front panel and having its side edges shaped to and secured to the respective spaced upper and rear edges of the side panels, an elastic lower panel shaped to overlie and fit with the lower portions of the cheeks and to extend beneath the chin, said lower panel having portions of its forward edges shaped to and secured to the respective side edges of the lower front panel and having its upper edges shaped to and secured to the adjacent lower edge portions of the upper front panel and to the lower edges of the non-elastic side panels, and an elastic neckband shaped to encircle the neck and having its upper edge secured to the remaining free lower edge of the elastic lower panel and the lower rear edges of the elongated elastic panels, said perforations in said portions shaped to fit about the eyes having viewing means secured therein and the meeting edges of said elongated elastic panels shaped to extend along the top and back of the head having means for detachably connecting said meeting edges together.

2. A helmet comprising a plurality of panels of cloth-like material connected at the meeting edges thereof to form a composite structure shaped to enclose and have a relatively intimate fit with the head of the wearer, said panels consisting of an upper elastic front panel having a portion shaped substantially to and to overlie the forehead, apertured portions shaped to fit about the eyes and to overlie the nose and upper front portions of the cheeks of the wearer and eye-protective means mounted in said apertures, a non-elastic lower front panel secured to the lower edge of the upper front panel and being shaped to overlie the lower front oral region of the face and to receive and support an oxygen mask in position of use, non-elastic side panels having their forward edges shaped to and secured to the side edges of the upper front panel and being shaped to fit the sides of the head in overlying relation with the aural regions and having their upper and rear edges spaced relative to each other and shaped to the general shape of the upper and rear sides of the head, elongated elastic panels shaped to extend along the top and back of the head, each of said elongated elastic panels having its forward edge shaped to and secured to the adjacent upper edge of the upper front panel and having its side edges shaped to and secured to the respective spaced upper and rear edges of the side panels, and elastic lower panel shaped to overlie and fit with the lower portions of the cheeks and to extend beneath the chain, said lower panel having portions of its forward edges shaped to and secured to the respective side edges of the lower front panel and its upper edges shaped to and secured to the lower edges of the non-elastic side panels and the adjacent lower edge portions of the upper front panel, said elastic lower panel being so contoured and elasticized as to cause the oxygen mask carried by said lower front panel to be urged against the face of the wearer, the lower front panel and the outer forward edge of said elastic lower panel being in predetermined spaced relation to form an opening through which portions of said oxygen mask are adapted to extend, and an elastic neckband shaped to encircle the neck and having its upper edge secured to the remaining free lower edge of the elastic lower panel and the lower rear edges of the elongated elastic panels, the meeting edges of said elongated elastic panels shaped to extend along

the top and back of the head having means for detachably connecting said meeting edges together.

3. A helmet comprising a plurality of panels of cloth-like material connected at the meeting edges thereof to form a composite structure shaped to enclose and have a relatively intimate fit with the head of the wearer and to support an eye-protective device in position of use, said panels consisting of an upper elastic front panel having a portion shaped substantially to and to overlie the forehead, apertured portions shaped to fit about the eyes and to overlie the nose and upper front portions of the cheeks of the wearer, a resilient supporting member shaped to engage the face of the wearer having eye openings therein in substantial alignment with the apertures in said upper front panel and further having flange portions surrounding said apertures and connected with the portions of the upper front panel encircling said apertures, lens means covering said eye openings and apertures, and rim members shaped to encircle and receive the peripheral edges of the lens means and having flange portions shaped to overlie the flanges on said supporting member and the portions of the upper front panel encircling said apertures to which the flanges are connected, each of said rim members being split to form two ends and having removable securing means for maintaining said ends in close superimposed relation to clamp said rim members onto said flanges and onto the connected portions of the upper front panel, a non-elastic lower front panel secured to the lower edge of the upper front panel and being shaped to overlie the lower front oral region of the face, non-elastic side panels having their forward edges shaped to and secured to the side edges of the upper front panel and being shaped to fit the sides of the head in overlying relation with the aural regions and having their upper and rear edges spaced relative to each other and shaped to the general shape of the upper and rear sides of the head, elongated elastic panels shaped to extend along the top and back of the head, each of said elongated elastic panels having its forward edge shaped to and secured to the adjacent upper edge of the upper front panel and having its side edges shaped to and secured to the respective spaced upper and rear edges of the side panels, an elastic lower panel shaped to overlie and fit with the lower portions of the cheeks and to extend beneath the chin, said lower panel having portions of its forward edges shaped to and secured to the respective side edges of the lower front panel and its upper edges shaped to and secured to the lower edges of the non-elastic side panels and the adjacent lower edge portions of the upper front panel and an elastic neckband shaped to encircle the neck and having its upper edge secured to the remaining free lower edge of the elastic lower panel and the lower rear edges of the elongated elastic panels, said portions shaped to fit about the eyes having viewing means secured thereto and the meeting edges of said elongated elastic panels shaped to extend along the top and back of the head having means for detachably connecting said meeting edges together.

4. A helmet comprising a plurality of panels of cloth-like material connected at the meeting edges thereof to form a composite structure shaped to enclose and have a relatively intimate fit with the head of the wearer, said panels consisting of an upper elastic front panel having a portion shaped substantially to and to overlie the forehead and apertured portions shaped to fit about the eyes and to overlie the nose and upper front portions of the cheeks of the wearer, said upper elastic front panel having an outwardly extending flange portion surrounding each of said apertures, a relatively rigid stiffener encircling and secured to each of said flange portions in superimposed relation therewith for imparting size and shape control to said apertures, a face-engaging mask on the inner side of said front panel having eye openings therein, said mask having outwardly directed flange portions each secured to a respective adjacent stiffener, lens means

mounted over each of said apertures and rim members shaped to encircle and receive the peripheral edges of each of said lens means and having a peripheral flange portion thereon for overlying its adjacent stiffener and respective flanges of the mask and upper front panel, said rim members each being split whereby the ends thereof adjoining the split may be brought together to clamp said flange portion of the rim members in position about said flanges of the face mask and upper front panel, overlying tongue members on said ends of the rim members adjacent said split, removable securing means for maintaining said tongue members and ends in close relation, and a headband attached to said tongue members and lying inwardly of the helmet about the head of the wearer to aid in retaining the lens means in desired position of use, a non-elastic lower front panel secured to the lower edge of the upper front panel and being shaped to overlie the lower front oral region of the face, non-elastic side panels having their forward edges shaped to and secured to the side edges of the upper front panel and being shaped to fit the sides of the head in overlying relation with the aural regions and having their upper and rear edges spaced relative to each other and shaped to the general shape of the upper and rear sides of the head, elongated elastic panels shaped to extend along the top and back of the head, each of said elongated elastic panels having its forward edge shaped to and secured to the adjacent upper edge of the upper front panel and having its side edges shaped to and secured to the respective spaced upper and rear edges of the side panels, an elastic lower panel shaped to overlie and fit with the lower portions of the checks and to extend beneath the chin, said lower panel having portions of its forward edges shaped to and secured to the respective side edges of the lower front panel and its upper edges shaped to and secured to the lower edges of the non-elastic side panels and the adjacent lower edge portions of the upper front panel and an elastic neckband shaped to encircle the neck and having its upper edge secured to the remaining free lower edge of the elastic lower panel and the lower rear edges of the elongated elastic panels, and the meeting edges of said elongated elastic panels shaped to extend along the top and back of the head having means for detachably connecting said meeting edges together.

5. A helmet comprising a plurality of panels of cloth-like material connected at the meeting edges thereof to form a composite structure shaped to enclose and have a relatively intimate fit with the head of the wearer, said panels consisting of an upper elastic front panel having a portion shaped substantially to and to overlie the forehead, apertured portions shaped to fit about the eyes and to overlie the nose and upper front portions of the cheeks of the wearer, a non-elastic lower front panel shaped to support an oxygen mask inwardly of the helmet in position of use, said lower front panel being secured to the lower edge of the upper front panel and shaped to overlie the lower front oral region of the face, non-elastic side panels shaped to fit the sides of the head in overlying relation with the aural regions and having receiving means for supporting earphones inwardly of the helmet in position of use, the forward edges of said side panels being shaped to and secured to the side edges of the upper front panel and having their upper and rear edges spaced relative to each other and shaped to the general shape of the upper and rear sides of the head, elongated elastic panels shaped to extend along the top and back of the head, each of said elongated elastic panels having its forward edge shaped to and secured to the adjacent upper edge of the upper front panel and having its side edges shaped to and secured to the respective spaced upper and rear edges of the side panels, an elastic lower panel shaped to overlie and fit with the lower portions of the cheeks and to extend beneath the chin, said lower panel having portions of its forward edges shaped to and secured to the respective side edges of the

lower front panel and its upper edges shaped to and secured to the lower edges of the non-elastic side panels and the adjacent lower edge portions of the upper front panel and an elastic neckband shaped to encircle the neck and having its upper edge secured to the remaining free lower edge of the elastic lower panel and the lower rear edges of the elongated elastic panels and having its opposed ends joined adjacent the joinder of said elongated panels, closure means extending along the adjoining edges of said elongated panels and neckband by which said edges may be separated for removably locating the helmet in desired position on the wearer's head, said apertured portions shaped to fit about the eyes having viewing means secured over the apertures therein and a headband attached to said viewing means and lying inwardly of the helmet about the wearer's head to aid in retaining said viewing means in desired position relative to the wearer's eyes.

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