Nov. 26, 1940. K. SMITH 2,222,635

GAS MASK AND HELMET

Filed June 14, 1939

Fig. 1.

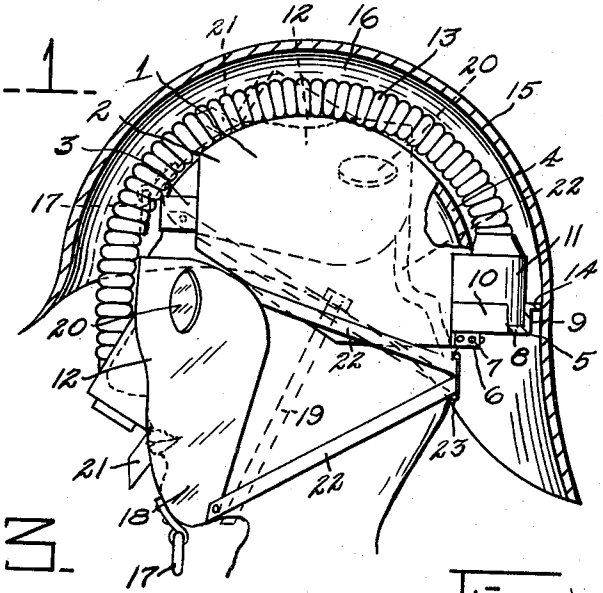


Fig. 3.

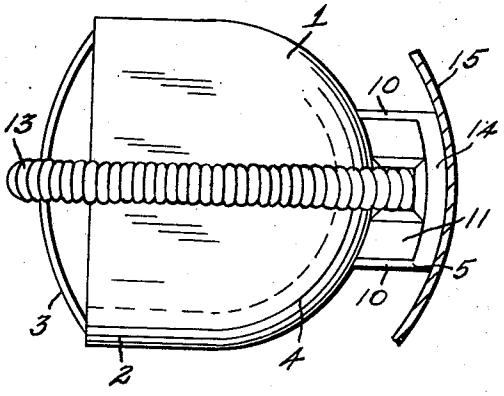
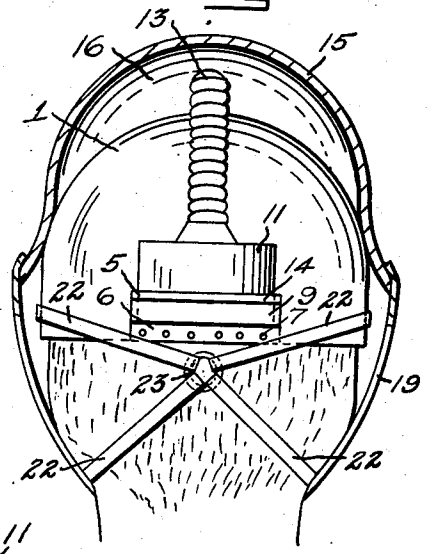


Fig. 2.



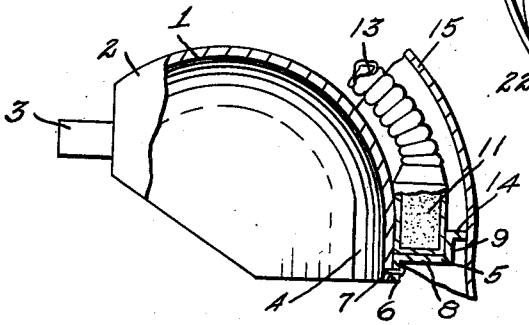


Fig. 4.

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2,222,635

GAS MASK AND HELMET

Kenneth Smith, Fort Leavenworth, Kans.

Application June 14, 1939, Serial No. 279,112

4 Claims. (Cl. 128—141)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

This invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to a combination gas mask and helmet for army use in protection against missiles and poison gas.

One of the objects of the invention is to provide a helmet having provision for housing or storing a gas mask including a hose and canister between an inner shell fitting the head and an outer dome or protecting covering.

Another object of the invention is to provide an inner shell fitting the head and adapted to support removably a conventional helmet in spaced relation, whereby a gas mask may be housed between the inner shell and the conventional helmet when not in use and quickly removed therefrom for use on the face without removing the helmet.

Heretofore, the gas mask, including a canister containing the necessary filtering material and the hose connecting the gas mask to the canister used in combination with a helmet, were exposed to gun fire when worn by soldiers and therefore were liable to be riddled by bullets or shrapnel, thus depriving a soldier of their use in case they were riddled by gun fire, and to put the gas mask on the face or to remove it therefrom required the removal of the helmet, thereby leaving the head unprotected against the gun fire.

It is therefore the aim and purpose of this invention to provide a helmet having provision for housing a gas mask, including a hose and canister containing the necessary filtering material, whereby they are protected at all times against gun fire and in which the helmet remains on the head at all times whether putting the gas mask on the face or taking it off.

With the above and other objects and advantages in view, the invention consists of certain features of construction and operation of parts which will hereinafter appear, and in which—

Fig. 1 is a vertical sectional view partly in elevation of a helmet embodying the invention showing the gas mask in operative and inoperative position upon a head;

Fig. 2 is a rear elevation partly in section thereof;

Fig. 3 is a top plan view with part of the helmet broken away;

Fig. 4 is a vertical sectional view partly in elevation of an inner shell adapted to fit the head and its cooperating parts.

In the illustrated embodiment characterizing the invention, 1 indicates an inner shell adapted to fit the head of a soldier or other person and includes a forwardly extending portion 2 substantially U-shaped in cross-section having an elastic band 3 provided on its forward end for engaging the forehead and a downwardly extending rear portion 4 adapted to fit the rear of the head.

On the outer surface and at the lower end of the downwardly extending rear portion 4 of the inner shell 1 is mounted an arcuate-shaped bracket 5 made of suitable material such as strap metal and substantially Z-shaped in cross-section, including a downwardly bent arm or flange 6 suitably secured to the inner shell by rivets 7 or the like, a horizontal outwardly extending portion 8, and a vertically extending outer wall 9. Side walls 10 may also be provided on the bracket if desired. The bracket 5 provides a support or receptacle for an arcuate-shaped canister 11 containing the necessary filtering material for a gas mask 12 which is connected to the canister by a hose 13. A horizontal rearwardly extending flange 14 is also included on the bracket 5, which acts or serves as a spacer member for detachably holding a protecting dome or outer shell 15 in spaced relation from the inner shell 1 at the rear of the head, whereby the hose 13 may move freely between the inner shell and protecting dome or outer shell. The width of the protecting dome or shell 15 is slightly less than the width of the inner shell, whereby the lower inner surface thereof at its sides is caused to come into contacting engagement with the outer surface of the inner shell at its sides, thus providing a space 16 between the inner shell and protecting dome or outer shell 1 and 15, respectively, which is of a substantially converging concavo convex or converging meniscus shape in cross-section and serves as a pocket or chamber in which the gas mask 12 may be stored when not in use on the face and to be quickly removed therefrom for use on the face in emergency.

In order to place more quickly the gas mask 12 in the pocket or chamber 16 any suitable means, such as a ring 17 which is secured to the chin portion 18 of the gas mask, may be employed. The outer shell or protecting dome 15 is detachably held against the inner shell by a chin strap 19, as in accordance with present usage.

Any suitable gas mask may be used, having the usual windows 20 and exhaling trap 21, the gas mask 12 in the present case being supported on the face by four elastic straps 22 which are connected at one end to a ring 23 at the back of the head, the other ends of two of the straps 22 being connected to the upper end at the opposite sides of the gas mask 12 and the remaining two straps being connected at their other ends to opposite sides of the chin portion 18 of the gas mask.

In using the combined gas mask and helmet, assuming that the gas mask is being used on the face and it is desired to place it in an inoperative position within the pocket or chamber 16 formed by the space between the inner shell and the protecting dome or outer shell 15, the soldier takes hold of the ring 17 on the chin part 18 of the gas mask and with an outward and upward push and with the pull of the elastic straps 22, the mask is caused to slip back up into the helmet and lie against the inner shell as indicated by the dotted outline in Fig. 1, the hose 13 folding within the rear of the space between the inner shell and protecting dome. To return the gas mask 12 to the face, a finger is inserted in the ring 17 and then with a pull on the ring the gas mask is removed from between the inner shell and protecting dome for engaging the face.

It will thus be seen that there is provided a highly novel and useful form of device which is well adapted for all the purposes indicated. Even though there has been herein described certain features of construction and operation of parts, it is nevertheless to be understood that various changes may be made therein without departing from the spirit or scope of the invention.

Having described my invention, what I claim as new and wish to secure by Letters Patent is:

1. A helmet comprising in combination an inner shell having side walls and shaped to fit the head, a bracket on the rear of said inner shell, a canister mounted on said bracket, an outer shell freely mounted on said inner shell and said bracket, said outer shell shaped to engage the side walls of the inner shell and the bracket, and forming an interspace between said inner and outer shells, a hose connected with said canister and a gas mask connected with said hose, said canister, hose and gas mask removably housed within said interspace, said interspace opened at the front of said inner and outer shells to permit withdrawal of said gas mask therefrom into wearing position and to return the gas mask thereto.

2. A helmet comprising in combination an inner shell having side walls and shaped to fit the head, an arcuate-shaped bracket on the rear of said inner shell, an arcuate-shaped canister removably mounted on said bracket, an outer shell freely mounted on said inner shell, said outer shell shaped to engage the side walls of the inner shell and the bracket and forming an interspace between said inner and outer shells, a hose connected with said canister and a gas mask connected to said hose, said canister, hose and gas mask removably housed within said interspace, said interspace opened at the front of said inner and outer shells to permit withdrawal of said gas mask therefrom into wearing position and to return the gas mask thereto.

3. A helmet comprising in combination an inner shell having side walls and adapted to fit the head, a bracket on the rear of said inner shell, a canister removably mounted on said bracket, said bracket including a horizontally extending portion and a rearwardly extending portion, said horizontally extending portion of said bracket providing a seat for said canister, an outer shell freely mounted on said inner shell, said outer shell shaped to engage the side walls of the inner shell and the rearwardly extending portion of said bracket and forming an interspace between said inner and outer shells, a hose connected with said canister, a gas mask connected to said hose and means to maintain said gas mask on the face, said canister, hose and gas mask removably mounted within said interspace, said interspace opened at the front of said inner and outer shells to permit withdrawal of said gas mask therefrom into wearing position and to return the gas mask thereto.

4. A helmet comprising in combination an inner shell having side walls and adapted to fit the head, an arcuate-shaped bracket on the rear of said inner shell, an arcuate-shaped canister removably mounted on said bracket, an outer shell freely mounted on said inner shell, said outer shell shaped to engage the side walls of said inner shell and the arcuate-shaped bracket and forming an interspace between said inner and outer shells, a hose connected with said canister, a gas mask connected with said hose, said canister, hose and gas mask housed within said interspace, means for maintaining the inner shell upon the head, means for removably holding said outer shell on the inner shell, said interspace opened at the front of said inner and outer shells to permit withdrawal of said gas mask therefrom into wearing position and means for removably maintaining the gas mask on the face.

KENNETH SMITH.