

R. MONRO.
GAS MASK.

APPLICATION FILED APR. 30, 1919.

1,395,759.

Patented Nov. 1, 1921.

Fig. 1

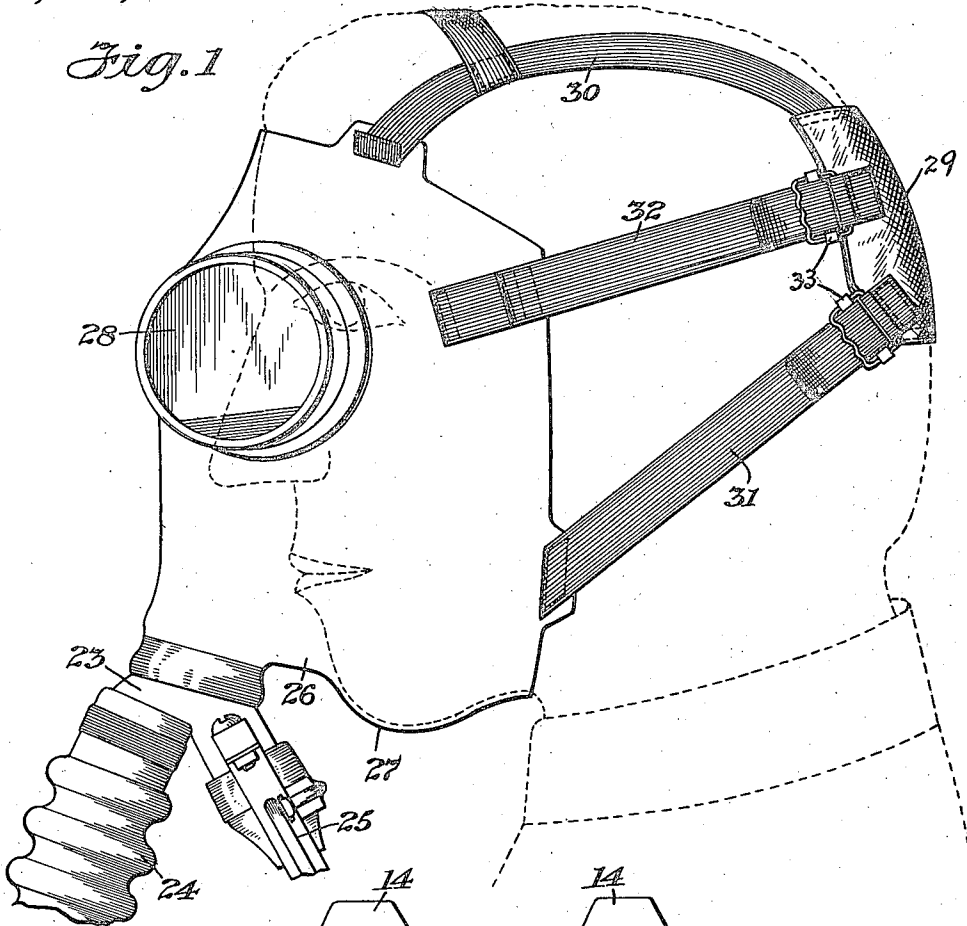


Fig. 2

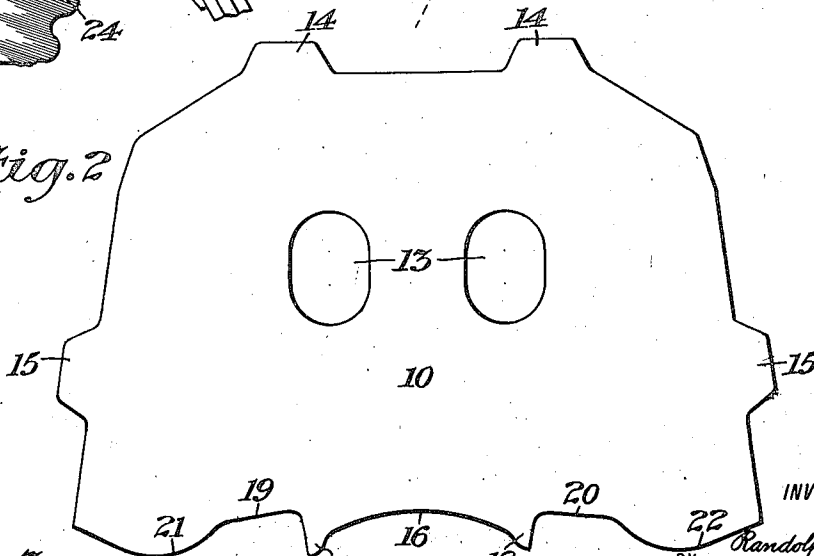
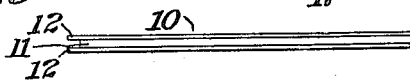


Fig. 3



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GAS-MASK.

1,395,759.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RANDOLPH MONRO, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented an Improvement in Gas-Masks, of which the following is a specification.

In the development of gas masks, the construction in the earlier masks produced was such that the material of which the hood of the mask was made was flexible and consequently collapsible; that is, the hood of the mask would collapse each time the wearer inhaled and would be distended each time the wearer exhaled. Subsequently in order to prevent the collapsing of the mask in use, the hoods thereof were molded from non-collapsible material, and later, due to the difficulty in the manufacture of such masks, gas masks were formed from relatively stiff impermeable material, so shaped as to fit the face of the wearer and in such a manner as to be substantially non-collapsible. In this type of mask however, it was customary to include in the hood a chin piece for contacting with the chin of the wearer in order to properly maintain the mask in place for use. Now the object of the present invention is the provision of a mask of the latter type in which the chin piece is eliminated and the bottom or lower portion of the hood of the mask is so constructed as to fit the chin of the wearer when in use. To this end in carrying out the invention, the hood of the mask is preferably made of a layer of relatively stiff impermeable material and layers of flexible material superimposed and secured upon the lay of relatively stiff material and with the material thus formed blanks are cut therefrom with gores made in the bottom or lower edge of the blank in such a manner as hereinafter described to provide not only for an opening for the hose or flutter valve connection or both these connections and to conform to the chin of the wearer, the construction being such that between the cavity provided for the chin and the opening for the connection of the fitting, whether it be a hose or a flutter valve or both, there is an outstanding portion so as to cause the hood to assume the proper relationship to the face of the wearer.

In gas masks made of sheets of relatively stiff material and sheets of flexible material, I am aware that heretofore a blank has been

cut from a sheet of relatively stiff impermeable material superimposed upon a sheet of flexible material such as stockinet, but in masks so formed, it has been necessary to tape the joint between the relatively thick and stiff material and the relatively flexible and thin material. In carrying out the present invention, although the same is equally applicable to other forms of masks, I found that the taping of the joints between the different materials may be obviated by placing the relatively stiff impermeable material between two larger sheets of the flexible material.

In the drawing:

Figure 1 is a side elevation of a gas mask made in accordance with my present invention.

Fig. 2 is a plan of the blank from which this gas mask is formed, and

Fig. 3 is a partial cross section taken through the blank illustrating the layers of material from which the blank is formed.

Referring to the drawing, the hood of the gas mask made in accordance with my present invention comprises a body member indicated at 10 which is made up from a blank composed of a sheet of rubberized fabric such as rubberized duck or sail cloth, although any suitable impermeable fabric which is sufficiently stiff to answer the purpose will do. The sheet of rubberized fabric is indicated at 11 and the sheet from which the blank is made is composed of this rubberized fabric 11 placed between two larger sheets of relatively flexible material, such as stockinet as indicated at 12 in Fig. 3. It will be understood that the sheet of rubberized fabric 11 is smaller than the sheets of stockinet and that the parts are suitably cemented, stitched or otherwise secured to one another. As hereinbefore stated, I prefer to place the sheet of rubberized fabric between sheets of stockinet in order to obviate the necessity of taping the joint between the sheet of rubberized fabric and the sheet of stockinet, although as will be understood, in some instances, it may be preferable to employ but one piece of the stockinet and tape the joint between the same and the rubberized fabric.

After the sheet is thus made, the same is suitably stamped up by a die or otherwise to include the openings 13 for eye piece members, the tabs 14 at the top for attachment to

the harness tapes and the tabs 15 at the sides also for the attachment of the harness tapes. At the bottom of the blank, the same is formed with a central circular gore 16 having projections 17 and 18 at the extremities thereof and relatively straight inclined edge portions 19 and 20 adjacent the projections 17 and 18 and curved edge portions 21 and 22 continuing from the straight edge portions 19 and 20 respectively.

In the formation of the hood from the blank thus stamped out, the edges 19 and 20 and 21 and 22 may be zigzagged or otherwise and are fitted and secured to each other so as to form a gas-tight joint in any suitable manner. In thus connecting the edges 19 and 20 and 21 and 22, the curved gore section 16 at the center provides an opening for the attachment or fitting 23 to which the hose tube 24 and the flutter valve 25 are connected in any suitable manner. As indicated at 26 in Fig. 1, the straight edge portions 19 and 20 provide an outstanding section 26, while the curved edge portions 21 and 22 of the blank provide a chin rest 27 in which in use, the chin of the wearer fits so as to make a gas-tight joint. Of course it will be understood that the hose tube and flutter valve may be connected as herein shown and described which is the preferable form in order to provide suitable drainage from the mask, although these parts may be otherwise connected without departing from the nature and spirit of this invention.

The gas mask also includes eye pieces 28 suitably set in and connected to the edges defining the eye openings 13 and a harness

for securing the hood in place which may comprise a pad 29, top straps 30, bottom straps 31 and intermediate straps 32 together with buckles 33 which may be associated with predetermined straps in order to properly adjust the hood of the mask to place on the head of the wearer.

I claim as my invention:

1. In a gas mask, a hood made from a unitary blank of flexible material having symmetrical oppositely disposed parts in its lower edge united by a single joint to completely shape the blank into the hood, whereby there is provided in the hood a chin section and a central front portion extending above the chin section and outstanding materially from the body of the hood so as not to contact with the nose and mouth of the wearer, there being a tubular opening in the lower part of the said central front portion of the mask.

2. In a gas mask, a hood made from a unitary blank of flexible material having oppositely disposed symmetrical parts in its lower edge adapted to be connected by a single joint to completely form the hood, whereby there is provided in the hood a chin section; a portion extending forward of the chin section with a tubular opening therein, and a front central section extending above the chin section and standing materially away from the body of the hood so as not to contact with the mouth and nose of the wearer.

Signed by me this 21st day of April, 1919.

RANDOLPH MONRO.