July 10, 1962 N. POTASH 3,043,299

HEAD HARNESS TAB FOR GAS MASK

Filed May 6, 1958

Fig. 1

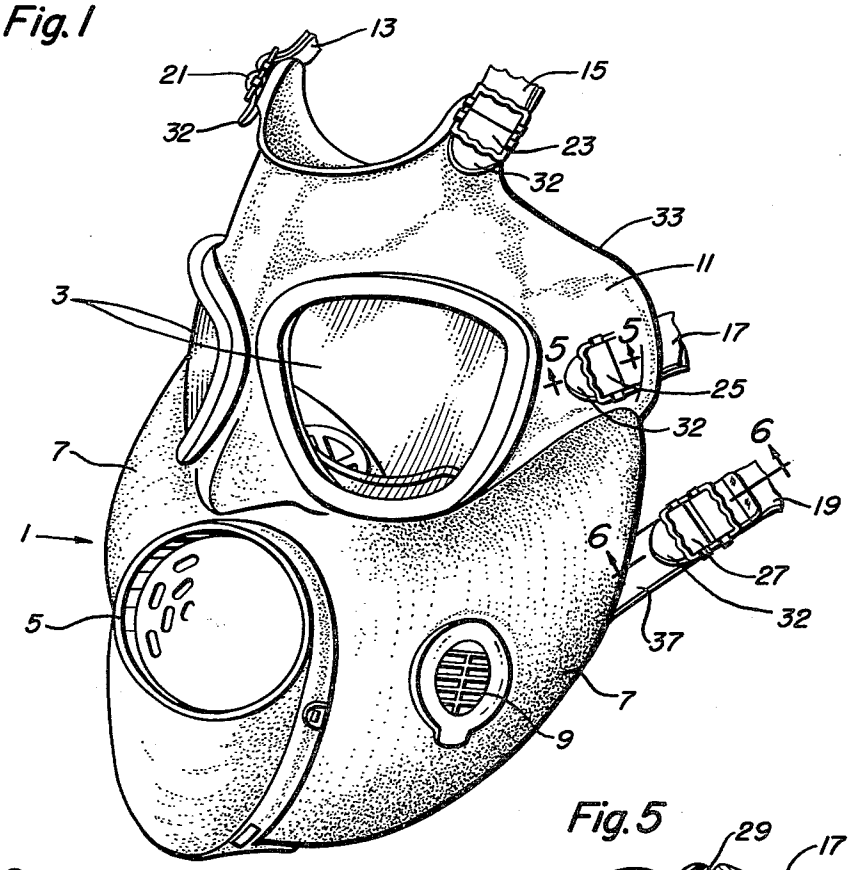


Fig. 2

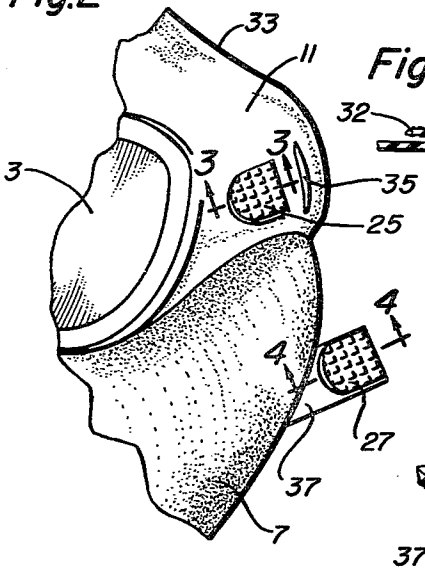


Fig. 3



Fig. 4



Fig. 5

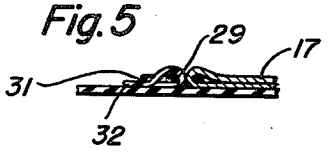


Fig. 6

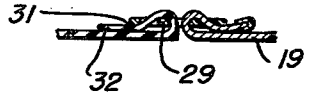
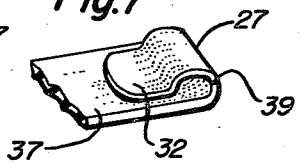


Fig. 7



INVENTOR
Norman Potash
George E. Kirchner
ATTORNEY

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HEAD HARNESS TAB FOR GAS MASK

Norman Potash, 3314 Devonshire Drive, Baltimore, Md.

Filed May 6, 1958, Ser. No. 733,459
1 Claim. (Cl. 128—141)
(Granted under Title 35, U.S. Code (1952), sec. 266)

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

This invention relates to means for fastening a head harness to gas masks. It may also be used for fastening straps to other objects formed of flexible, resilient material.

In the drawings:

FIG. 1 is a perspective view of a gas mask including several fastenings embodying my invention.

FIG. 2 is a fragmentary view of a portion of the mask of FIG. 1, showing several tabs according to my invention without the attached straps and buckles.

FIG. 3 is a section taken on the line 3—3, FIG. 2.

FIG. 4 is a section taken on the line 4—4, FIG. 2.

FIG. 5 is a section taken on the line 5—5, FIG. 1.

FIG. 6 is a section taken on the line 6—6, FIG. 1.

FIG. 7 is a perspective view of the tab of FIG. 4, slightly modified.

Gas masks of the usual type intended for military use have a facepiece in which the faceblank is formed of molded, soft resilient rubber. The facepiece is held in place by means of head harness formed of elastic fabric straps.

It has been the usual practice to attach these straps to the facepiece by means of metallic rivets. This method of fastening is not, however, entirely satisfactory. Due to the high heat conductivity of the metal, the wearer frequently suffers frostbite at the points of contact when the mask is worn in very cold climates. Moreover, the stiffening of the facepiece lessens the sealing action of the mask periphery. Masks intended for use with the modern highly toxic gases must be exceptionally tight. Fastenings have been devised in which hooks or other fastening means are molded within the rubber. This, however, complicates molding operations, and, moreover, retains the disadvantage of stiffening the material.

I overcome these disadvantages and at the same time reduce the expense of manufacturing by providing the facepiece with attaching tabs in the form of hooks which are molded integrally with the faceblank and formed of the same soft, resilient rubber. The head harness straps are attached to these tabs by means of conventional slide buckles. I find it to be essential that the tab be molded in the hook form. If it is simply a straight rubber strap it will not be held by the buckle.

My structure considerably simplifies the manufacturing process, since it completely eliminates the riveting step and also the complications involved in molding metallic elements in the rubber. It does not stiffen the facepiece and so improves the seal of the mask with the face. It eliminates the frostbite problem caused by the high thermal conductivity of metal.

The invention is illustrated in connection with a gas mask of the type shown and claimed in the application

of Brumfield and Shanty Serial No. 733,460, filed May 6, 1958, now Patent No. 2,910,979. The mask comprises a facepiece having a faceblank 1 of molded, soft, resilient rubber. Mounted in the faceblank 1 are conventional lenses 3 and a fixture 5 which comprises a voice transmitter and an outlet valve. Below lenses 3, the faceblank is formed into pockets 7 which contain air purifying units (not shown). Air is admitted to these air purifying units by air inlets 9.

The faceblank 1 includes a face-fitting marginal portion 11 formed of a single thickness of the soft, resilient rubber. This marginal portion, of course, extends to the rear of and below the pockets 7, as well as above.

The mask is held in place by means of a head harness formed of a number of elastic fabric straps, of which four, indicated at 13, 15, 17, and 19, are shown. It will be understood that straps 17 and 19 are duplicated on the other side of the mask. These straps are secured to marginal portion 11 by the tabs which constitute the novel portion of my invention. Each of the tabs, 21, 23, 25, and 27 is molded integral with faceblank 1 of the same soft, resilient rubber. The form of these tabs is shown most clearly in FIGS. 3–7. Each is a soft resilient hook which is relatively wide and thin. It is molded in the form of a reverse curve, so as to fit around the slider 29 and under the frame 31 of a conventional slide buckle, as shown in FIGS. 1, 5, and 6. Each hook has its free end 32 directed inwardly from the periphery 33 of marginal portion 11. The hooks are so formed that free end 32 has a normal position substantially parallel to the outer surface of marginal portion 11. The position of the tabs is so chosen as to give the best fit at each point. Thus, tabs 21 and 23 form short straps at the periphery 33. Tabs 25 are positioned inwardly from the periphery of the facepiece, being formed on the surface of marginal portion 11, as shown in FIGS. 2 and 3. Head harness straps 17 pass thru a slot 35 in the faceblank. Tabs 27 are formed as the ends of relatively long straps 37 which are integral with and joined to marginal portion 11 behind pockets 7. Tabs 13, 15, and 27 are preferably formed with the top of the hook narrower than the base or strap portion, as shown in FIG. 7, forming shoulder 39. The strap is somewhat wider than frame 31 of the buckle.

It will be observed that the basic characteristic of my tab is that it is molded to essentially the form that it occupies when secured in the slide buckle of the head harness strap. I find that when the slider 29 is tightened in the normal manner, the tab is held firmly, even when the surface is smooth. If desired, however, a pebbled or waffle surface may be employed as shown in FIGS. 2, 3 and 4 to further increase the resistance to movement. Shoulder 39 prevents loosening when the tab is in the form of a protruding strap. The slide 29 can be peened to the frame of the buckle to provide a permanent attachment of the buckle to the faceblank.

If it is desirable to have a head harness strap adjustable, a double slide buckle may be used, as shown in connection with strap 19.

While my tab exhibits outstanding advantages when used on a gas mask, it may be used in any combination in which it is desired to attach a strap to a sheet of soft, resilient rubber.

Also, while I have described one modification in detail, it is evident that various changes can be made. I therefore wish my invention to be limited solely the scope of the appended claim.

I claim:

A facepiece for gas mask comprising a faceblank formed of molded, soft resilient rubber and having a marginal portion, said marginal portion being in the form of a sheet so formed as to closely fit the face of a wearer, a plurality of wide, thin, soft, molded resilient rubber hooks on the outer surface of said marginal portion, said hooks being integral with said faceblank and each of said hooks having a free end extending inwardly from said marginal portion, spaced from and generally parallel to the outer surface of said marginal portion.

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