No. 702,481. Patented June 17, 1902.

J. B. REID.

FIREMAN'S MASK.

(Application filed Sept. 28, 1901.)

(No Model.) 3 Sheets—Sheet 1.

Fig 1

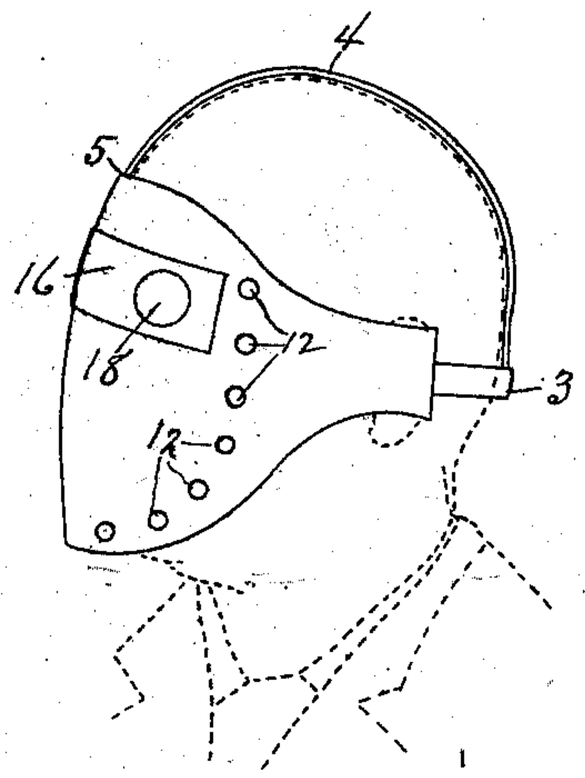
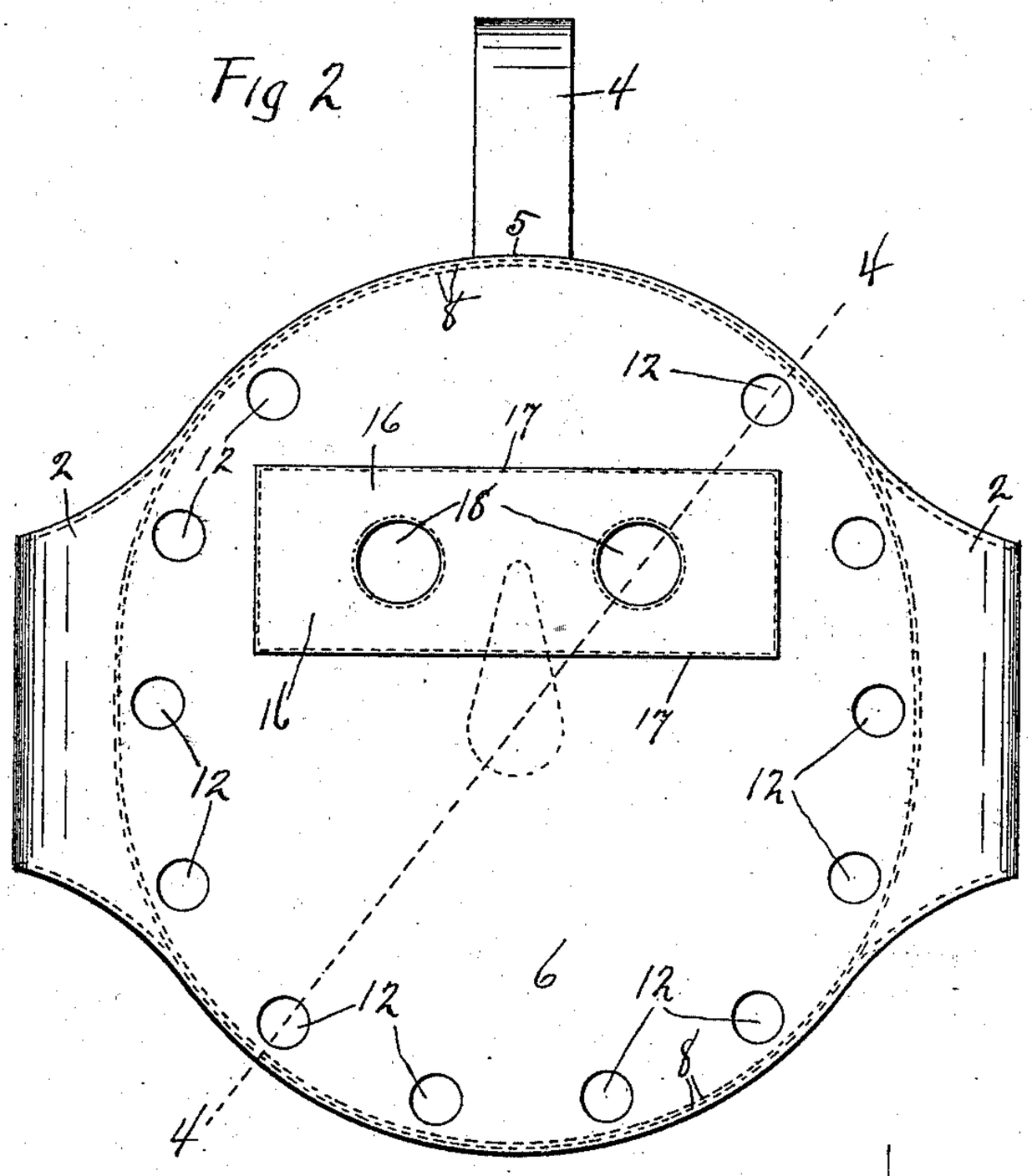


Fig 2



WITNESSES

Wm. S. Greer

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Fig 3

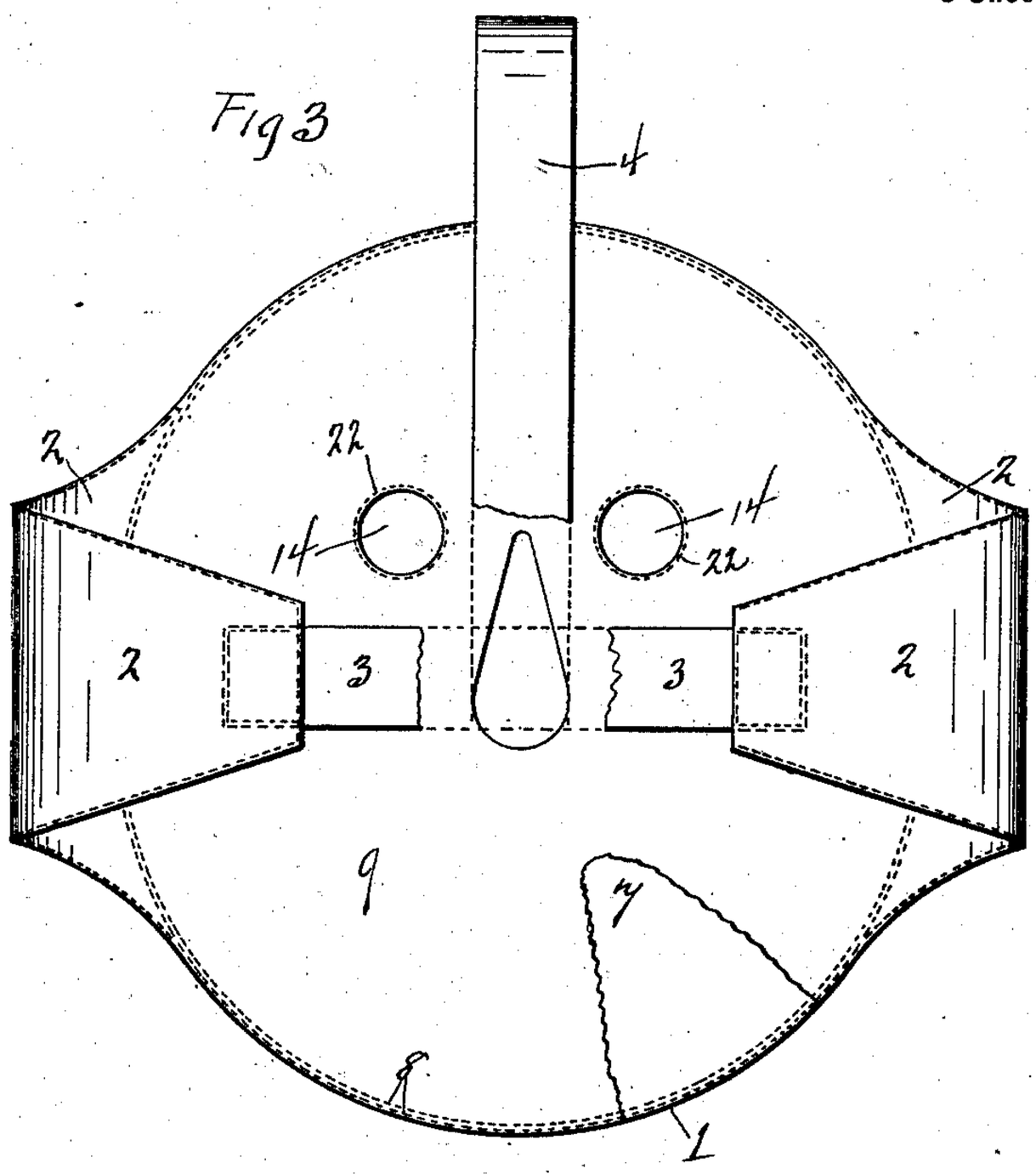

Fig 4

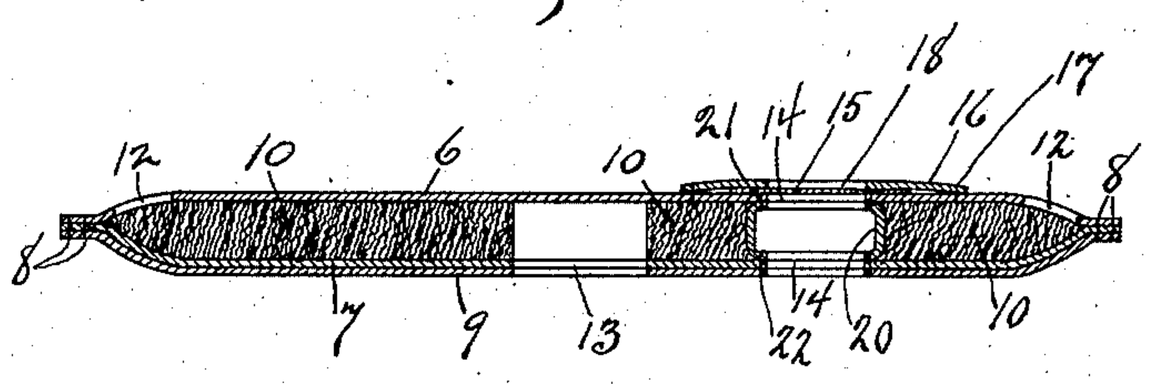

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FIG 5

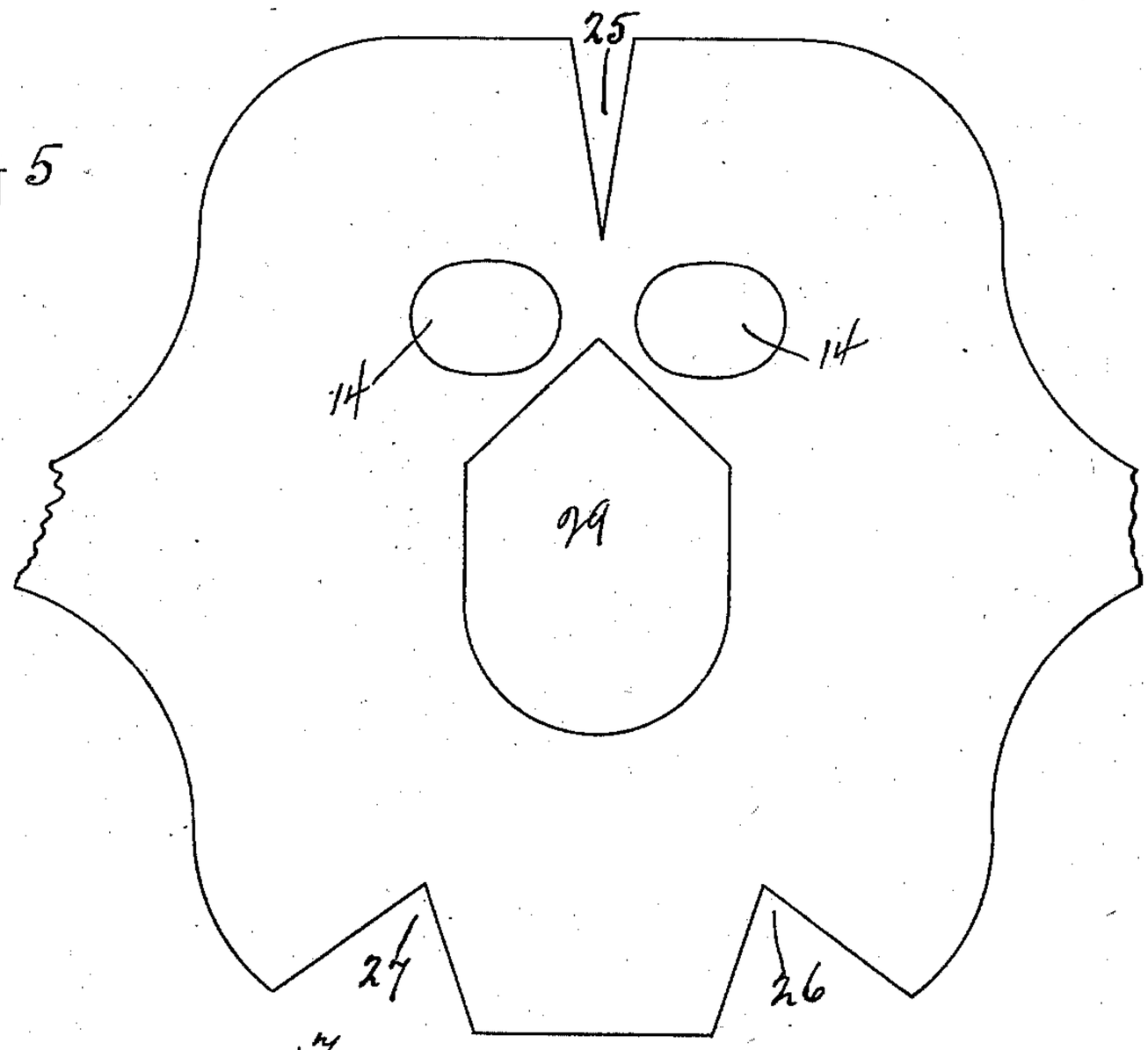


FIG 6

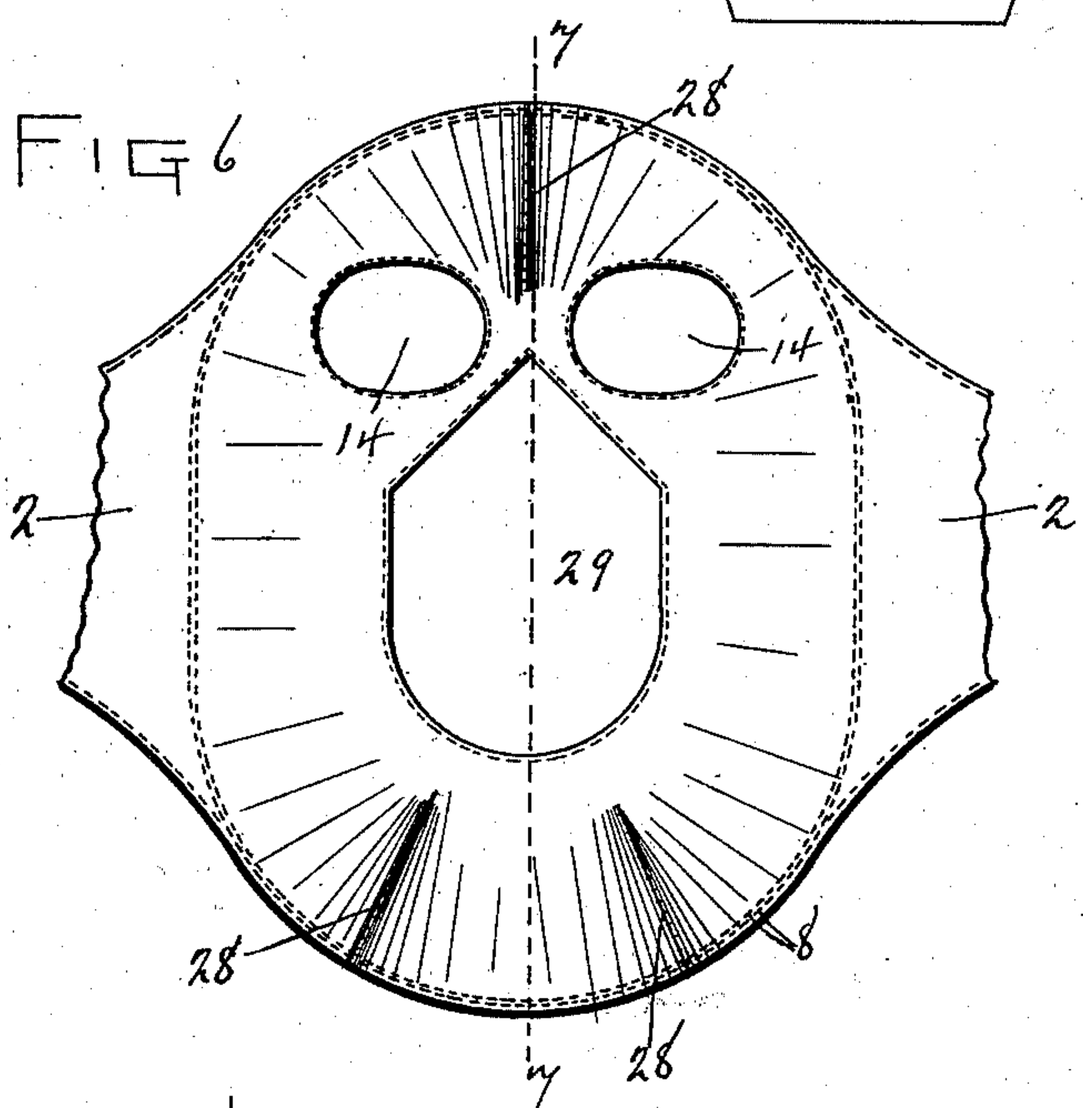
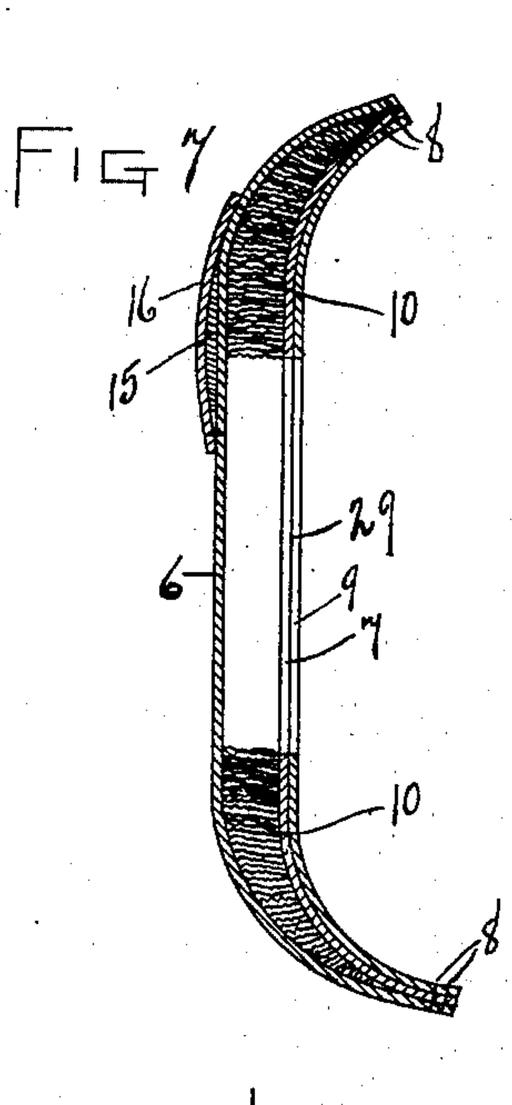


FIG 7



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES BUTLER REID, OF GLOVERSVILLE, NEW YORK, ASSIGNOR OF TWO-THIRDS TO J. LEBENHEIM & SONS, OF GLOVERSVILLE, NEW YORK, A FIRM.

FIREMAN'S MASK.

SPECIFICATION forming part of Letters Patent No. 702,481, dated June 17, 1902.

Application filed September 28, 1901. Serial No. 76,923. (No model.)

To all whom it may concern:

Be it known that I, JAMES BUTLER REID, a citizen of the United States, residing at Gloversville, county of Fulton, and State of New York, have invented certain new and useful Improvements in Fire-Masks, of which the following is a specification.

The invention relates to such improvements; and it consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings and the reference characters marked thereon, which form a part of this specification.

Similar characters refer to similar parts in the several figures.

Figure 1 of the drawings is a view in side elevation of the exterior of my improved fire-mask as the same appears in use, the head of the wearer being indicated by dotted lines, shown on a smaller scale than the other figures. Fig. 2 is a front plan view of the mask laid out flat. Fig. 3 is an inner or back plan view of the device shown in Fig. 2. Fig. 4 is a vertical section taken on the broken line 4 4 in Fig. 2. Fig. 5 is a plan view of one of the walls of the mask-inclosure laid out flat, with a portion of the attaching projections broken away, showing a modified form of construction. Fig. 6 is an inner plan view of the modified form of mask. Fig. 7 is a vertical section taken on the broken line 7 7 in Fig. 6.

The object of my invention is to protect the eyes and respiratory organs of a person in a smoky apartment.

My invention consists of an inclosure in the form of a mask adapted to be worn upon a person's face containing filtering material open to the atmosphere at or near its outer edges to admit smoke and air and near its central portion to admit the nostrils of the wearer and means for admitting visual rays to the eyes, as hereinafter more fully described, and pointed out in the claims.

In Figs. 1, 2, 3, and 4 of the drawings I have shown a mask the body part 1 of which is approximately circular in form, provided with side extensions 2, having an elastic connection 3, adapted to pass around the back of the head, as shown in Fig. 1, and with another elastic 4, connected at one end with the upper edge of the mask, as at 5, and at the other end with an elastic 3 to pass over the top of the head for the purpose of holding the mask upon the face of the wearer. The body of the mask is shown in the form of an inclosure consisting of the sheets of material 6 and 7, secured together along their edges by rows of stitching 8. When desired, the inner sheet may be covered by lining 9, formed of softer material, coming in contact with the face. The inclosure formed by the two sheets of material is approximately filled with filtering material, which may be of spongy or fibrous material or the dermal appendages of animal integument, as hair, fur, or wool. The inner sheet 7, as shown in Fig. 4, may be of sheepskin dressed with the wool 10 thereon, which serves as a filtering material. The outer sheet of material may be made of leather or other material which will not readily admit of the passage of smoke therethrough and is provided at or near its outer edges with a plurality of holes or apertures 12, connecting the filtering-chamber with the atmosphere. The inner sheet of material or wall of the inclosure is provided with a central aperture 13, adapted to receive the nostrils of the wearer, whereby smoke and air entering through the apertures 12 must pass through the filtering material to reach the central aperture 13, thereby separating the carbon from the air, permitting only such air and foreign substances as can be inhaled for a considerable interval without injurious effect to pass to the nostrils of the wearer.

As a means for protecting the eyes of the wearer from smoke and simultaneously admitting visual rays through the inclosure I provide the inclosure-walls 6 and 7 with apertures 14 and with similar apertures through the filtering material and cover the outer end of this aperture or apertures 14 with a mica sheet 15 or other transparent material which is impervious to smoke. When desired, the mica sheet may be covered by a sheet of fabric or leather 16, secured to the inclosure-wall 6 by means of stitching 17, this covering being provided with an aper-

ture 18, similar in size to the aperture in the inclosure. The eye-aperture is also closed through the filtering-chamber by means of a flexible tube 20, the outer end of which is secured to the outer wall of the inclosure, as by stitching 21, and the inner end to the inner wall, as by stitching 22, thereby wholly shutting off the eyes of the wearer from the smoky atmosphere without the mask and also from the filtering-chamber, which affords absolute protection to the eyes and permits free access of the visual rays to the eyes. When desired, the tubular connection 20 may be dispensed with, as the smoky atmosphere could not reach the eyes except through the filtering material in the inclosure.

The flexible nature of the connecting-tube permits the mask to be easily bent and the inclosure compressed to more readily fit and conform to the shape of the face of the wearer.

When desired, the mask can be made of concavo-convex form, as shown in Fig. 7. The sheets of material forming the inclosure are cut to provide the gore-openings 25, 26, and 27 in the edges of the inclosure-walls, as shown in Fig. 5. The edges of the gores are brought together and stitched to each other, as by the stitching 28, as shown in Fig. 6, thereby giving the inclosure a concavo-convex form, as shown by the cross-sectional view in Fig. 7. This form causes the mask to more tightly fit the face of the wearer at or near the edges of the inclosure. In this modified form of construction I have also shown a central aperture 29 large enough to receive both the nostrils and the mouth of the wearer, and the eye-apertures are also made slightly larger in diameter.

It is obvious that the mask-inclosure may be made of such a shape as to cover the nostrils and mouth without covering the eyes, although I prefer to provide the mask with protection for the eyes as well as the respiratory organs.

I do not desire to be limited to any kind of material for the inclosure-walls, provided the inner wall or covering, which comes in contact with the face, is of such a yielding nature as to conform to the irregularities in the contour of the face, so as to exclude smoke and air from the respiratory organs, except such as passes through the filtering material in the filtering-chamber.

The filtering material may be either integral with one or both of the inclosure-walls or it may be of a different texture. It may also be made of mineral substances, as mineral wool, or of any material which would act as a filter to separate carbon and other impurities from the atmosphere passing therethrough to the respiratory organs.

By having the apertures which admit smoke and air to the filtering material located at or near the outer edges of the mask and the aperture which admits the respiratory organs of the wearer to the filtering-chamber located centrally of the mask the admitted smoke and air are caused to travel a longer distance through the filtering material than they would if the smoke and air were admitted through a central opening opposite to and nearer the respiratory organs. By having the visual tubes pass entirely through the filtering-chamber the eyes are wholly protected from smoke, not even coming in contact with the filtered smoke.

What I claim as new, and desire to secure by Letters Patent, is—

1. A fire-mask, comprising a flexible inclosure, containing filtering material, open to the atmosphere at or near its outer edges to admit smoke and air, and near its central portion to admit the nostrils of the wearer, and having eye-apertures therethrough, closed at their outer ends to the atmosphere by a transparent covering impervious to the smoke, and means for securing the inclosure upon the face of the wearer.

2. A fire-mask, comprising a flexible inclosure, containing filtering material, open to the atmosphere at or near its outer edges to admit smoke and air and near its central portion to admit the nostrils of the wearer, and having an eye-aperture therethrough, closed to the filtering-chamber by a tube and to the atmosphere at their outer ends by a transparent covering, and means for securing the inclosure upon the face of the wearer.

3. A fire-mask, comprising a concavo-convex inclosure, containing filtering material, open to the atmosphere at or near its outer edges to admit smoke and air, and near its central portion to admit the nostrils of the wearer, means for admitting visual rays to the eyes, and means for securing the inclosure upon the face of the wearer.

4. A fire-mask inclosure, comprising two sheets of material secured together around their outer edges, containing filtering material integral with one of such sheets, open to the atmosphere at or near its outer edges to admit smoke and air, and near its central portion to admit the nostrils of the wearer, means for admitting visual rays to the eyes, and means for securing the inclosure upon the face of the wearer.

5. A fire-mask inclosure, open to the atmosphere at or near its outer edges to admit smoke and air and near its central portion to admit the nostrils of the wearer, having one of its side walls composed of animal integument dressed with its dermal appendages which project from its inner side and are adapted to approximately fill the inclosure, and means for securing the inclosure upon the face of the wearer.

In testimony whereof I have hereunto set my hand this 24th day of September, 1901.

JAMES BUTLER REID.

Witnesses:

JEROME EGELSTON,

IDA GRACE LEBENHEIM.