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C. OTERO  
SURGICAL MASK  
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2,149,067

Fig. 1.

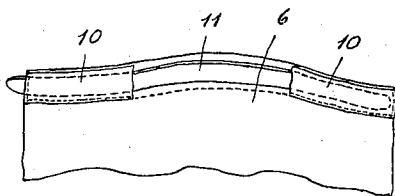
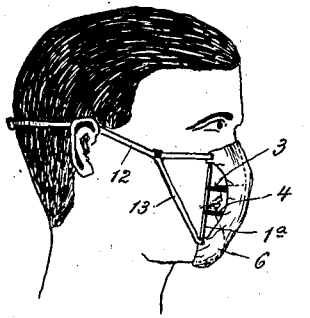


Fig. 4.

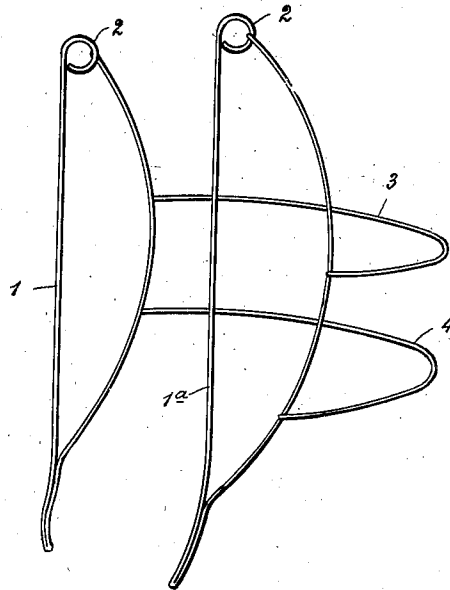


Fig. 2.

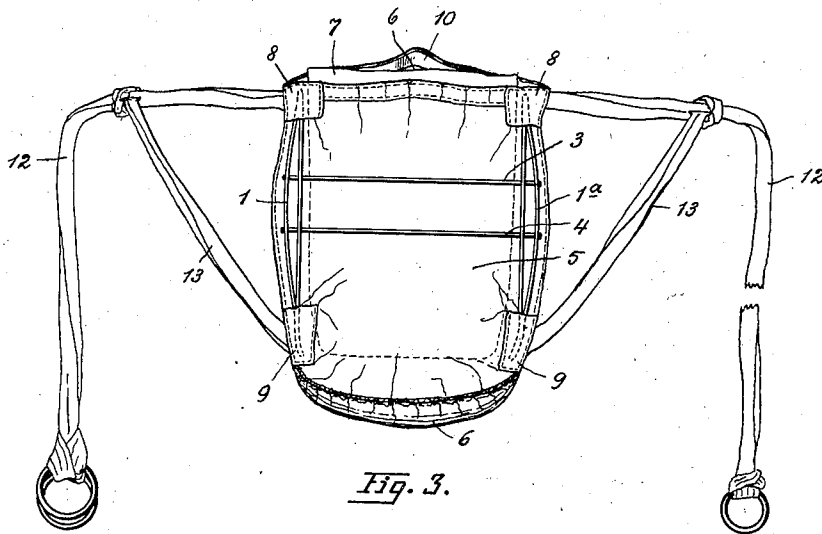


Fig. 3.

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# UNITED STATES PATENT OFFICE

2,149,067

## SURGICAL MASK

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2 Claims. (Cl. 128—139)

The invention relates to improvements in the masks or coverings for the face worn by surgeons, assistants and nurses during surgical and other treatments of patients, in order to avoid the breath and the nasal and buccal secretions from coming into contact with receptive organs and producing infections. For this purpose there have generally been used linen bandages applied over the nose and mouth, or veils hanging down the face, which appliances make breathing difficult or are easily displaced by the movements of the head.

The mask according to the invention adapts itself perfectly to the front part of the face, covers completely the mouth and nose and stays in place in whatever position the head may take. It is constructed so as to leave openings at the sides of the face for breathing and may therefore be worn without discomfort during prolonged periods of time. It is further constructed so as to permit it to be taken apart readily for washing the linen cover and sterilizing the metal frame.

In the accompanying drawing:

Figure 1 shows the mask applied to the face.

Figure 2 is a view of the metallic frame supporting the covering of the mask.

Figure 3 shows the complete mask viewed from the back or inside.

Figure 4 is a detail of the upper edge of the front cover of the mask, with the hem partially cut away and showing the strip of soft metal inserted in the hem.

As appears from the drawing, the mask comprises a metal frame, a covering stretched over said frame, and means for attaching the mask to the face.

The metal frame is preferably made of wire and comprises two side members 1 and 1<sup>a</sup>, each of which is formed of a straight wire extending downwardly, with an eye 2 at the top. This wire is bent back upon itself for a short distance at the lower extremity of the side member, and then curves outwardly and back again, its end being soldered to the eye 2. The side members 1 and 1<sup>a</sup> are connected by two parallel cross wires 3 and 4 curved outwardly so as to surround the front part of the face approximately between the tip of the nose and the mouth and soldered with their ends to the curved front parts of the side members. The lower ends of said side members are bent somewhat inwardly so as to adapt themselves to the sides of the chin when the mask is worn.

The whole front part of the metal frame is covered with fabric which at the sides only reaches

the outwardly curved front parts of the side members 1 and 1<sup>a</sup>. The lower part of this covering is puckered inwardly so as to cover the chin. The covering preferably comprises an inner cover 5 and an outer cover 6, stitched together along three sides so as to provide a pocket open at the top, into which is inserted a sheet of some impervious material such as rubber, oil cloth etc. which prevents the breath from passing through the covering. This covering is attached to the frame by means of two upper pockets 8 and two lower pockets 9 sewn to the corners of the inner cover 5, the upper pockets 8 opening downwardly and the lower pockets 9 upwardly. Into these pockets 8 and 9 are inserted the upper and lower extremities of the side members 1 and 1<sup>a</sup>, as shown in Figure 3, the fabric stretching sufficiently to enable said extremities to enter into said pockets. It will be clear that the pockets thus constructed are capable of being laundered without damage to their structure and shape and this attribute is expressed in the claims by the term "laundry-proof". The upper edge of the outer cover 6 is folded and sewn down so as to provide a hem 10 (Figure 4), into which is inserted a strip 11 of soft metal such as aluminum which, when the mask is placed on the face, is bent around the ridge of the nose so as to fit this part closely to the face. The metal strip 11 may be withdrawn from the side of the hem 10 when the covering is to be cleaned.

The mask described is attached to the face by means of two bands or ribbons 12 sewn to the sides of the covering at the upper pockets 8 and which are tied at the back of the head. For holding the lower part of the mask against the chin, two short bands 13 extend from the lower pockets 9 and are fastened to the upper bands 12. The short bands 13 may be replaced by longer bands tied together at the back of the neck.

As appears from the foregoing, the mask adapts itself perfectly to the face, bearing against the ridge of the nose and adjoining parts and covering the chin, but leaving unobstructed the nostrils and the mouth, from which the covering is kept away by the curved members 3 and 4. The side members 1 and 1<sup>a</sup>, not covered by the fabric, provide apertures for breathing, so that the mask may be worn for any length of time without discomfort. The covering is easily removed for cleaning and replaced on the wire frame, and the frame itself may be bent to any particular shape of the face.

What I claim is:—

1. A washable and sterilizable surgical mask

5 comprising a wire frame having vertical side members each having a straight back part and a curved front part, and a pair of substantially parallel horizontal outwardly curved front members, a covering made of washable fabric and including impervious material, stretched upon said frame, permanent, laundry-proof pockets provided at the back of said covering and engaging the upper and lower extremities of said side members, a strip of soft metal provided in the upper part of said covering for fitting it to the face, and means comprising bands for holding the upper and lower parts of the mask against the face.

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15 2. A washable and sterilizable surgical mask comprising a wire frame having two substantially

parallel vertical side members each having a straight back part and a curved front part, and a pair of substantially parallel horizontal outwardly curved front members secured to said curved front parts, a covering made of washable fabric and including impervious material, stretched upon said frame, permanent, laundry-proof pockets provided at the back of said covering and engaging the upper and lower extremities of said side members, a strip of soft metal provided in the upper part of said covering for fitting it to the face, and means comprising bands for holding the upper and lower parts of the mask against the face.

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