Dec. 9, 1941. G. KEMP 2,265,529

SURGICAL MASK

Filed May 29, 1939

Fig. 1.

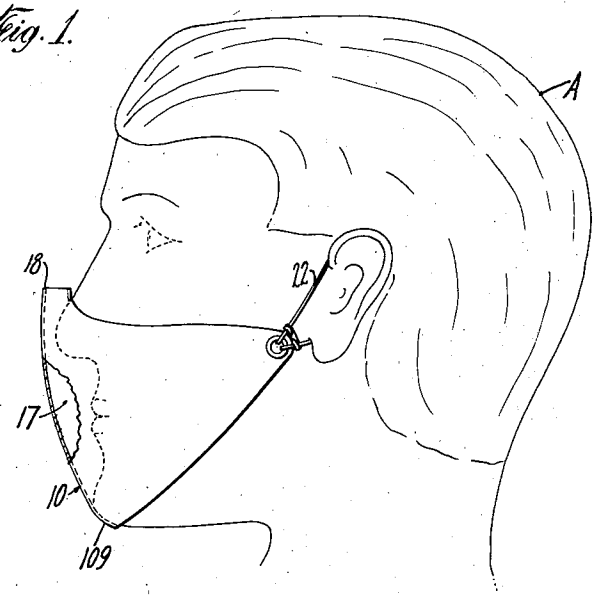

Fig. 2.

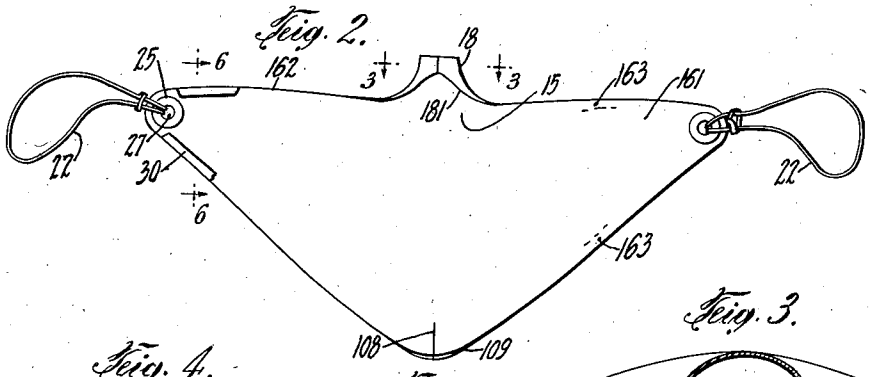

Fig. 3.

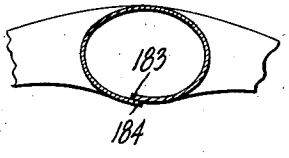

Fig. 4.

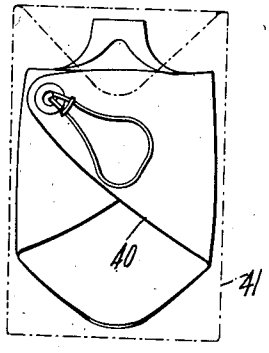

Fig. 5.



Fig. 6.



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SURGICAL MASK

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Application May 29, 1939, Serial No. 276,290

2 Claims. (Cl. 128—139)

This invention relates to surgical masks or shields which are intended for use by nurses, physicians and the like.

The primary object of the invention is to provide an inexpensive mask which may be worn to prevent contamination of the operating or working field by nose or throat discharges of either the patient or the doctor and to prevent the mask wearer from blowing his breath in the other person's face or from inhaling the air exhaled by the non-wearer.

Further objects are to provide a mask which is of economical construction, cheap enough to be destroyed after being once used; to provide a mask which does not interfere with the wearer's comfort, breathing, vision, or eye glasses and which mask will hold back therein perspiration of the wearer; to provide a mask of material impregnable with medicants if desired; to provide a mask from a flat economical material which when completely formed may be completely packed substantially flat and wrapped and sealed in a flat envelope; to provide a mask having a breathing passage directed away from the patient; and to provide a mask shaped to fit snug to the face in a comfortable manner.

These and other objects and construction are hereinafter described and shown in preferred forms.

In the drawing,

Fig. 1 is a view showing a mask constructed in accordance with the invention and applied to the head of a wearer and showing the mask partly in section.

Fig. 2 is an elevational view of the rear of the mask.

Fig. 3 is a section taken on line 3—3 of Fig. 2.

Fig. 4 is an elevational view of the mask in folded condition.

Fig. 5 is a side view of the mask of Fig. 4.

Fig. 6 is a section taken on line 6—6 of Fig. 2.

Referring now to the drawing in detail, A, represents the head of a wearer to which is shown applied a mask 10, constructed in accordance with the invention. The mask 10 is formed from any suitable flexible material for the purpose preferably imperforate paper or the like which may be waterproofed. It is formed to intimately fit the cheek and chin area of a human and includes a respirator section 15, comprising a triangular shaped plate 16 having wings 161, 162, which plate is curveable longitudinally throughout its length and when worn forms centrally thereof a pocket 17. The marginal edge and end portion 163, of the plate, adaptably contacts with the cheeks and chin and overlies the nose and mouth as shown. The mask has formed preferably integral therewith, a tubular extension 18, which is in communication with the pocket 17, and adapted to extend preferably upwardly above the lower portion of the nose of the wearer. Said tube has a seat 181, for the nose, the seat edge and marginal portion being arranged to snugly fit the contour of the nose. The lower portion of the mask 169, may be arranged to extend inwardly under the chin.

In one embodiment there may be added along the inner marginal edge and skin contacting portion of the mask, a strip 30, of suitable material such as soft sponge rubber or the like to assure a tight fit of mask at all portions of the face intended to be contacted, to, in effect, better seal the mask to the face so that air may pass only through the tubular member. Such soft material obviously adjusts itself to varying irregularities of facial contour. It may be economically fastened to the mask with suitable cement. Likewise an edging of soft absorbent material may be provided along the outer marginal edge to absorb perspiration or the like contacting it to prevent the perspiration contacting the nonwearer.

To better maintain the mask in place on the face of the wearer the mask is provided with preferably elastic bands or fastening loops 22, or the like, preferably fastened at one of each of their ends to the mask as shown and being removably fastenable to the ears of the wearer by means of said loop as shown, the inherent property of the rubber facilitating said fastening. Other fastening means such as an elastic strap, permanently fastened at each end thereof to the respective wings of the mask, and being adjustably mountable around the head of the wearer may be provided. String tie means may be provided. Reinforcement 25, may be provided around the apertures 27, which may be provided for said fastening means. It is to be noted that when the elastics are under tension i. e. when looped around the ears the periphery of the mask tends to form a pneumatic seal with the face.

In manufacturing the mask I prefer to stamp the mask out of sheets of paper or the like and in said stamping operation to allow sufficient tube-end material 183, to form the tube by separately preferably shaping the material for the tube tubularly, and forming a glued lap joint 184. The chin portion is preferably slotted 108, to provide means for separately shaping the paper to form said chin portion by drawing together the mar-

ginal portions adjacent the slot and glueing same together. In some models it has been expedient to build the mask to fit under the point of the chin whereas in others the mask is arranged to fit the chin between the lower lip and chin point in which latter model it is at times unnecessary to slit the paper, as is clear to one skilled in the art. The wings of the mask may be arranged to fold inwardly towards each other as at **40**, Fig. 4, for economy in packing the article, to provide a substantially flat article. Other fold means may be adopted for instance the article may be folded along a crease line running from the tube to the chin vertically. It might be mentioned for clarity that the tube will collapse into a flat position. A suitable packaging envelope wrapper **41**, or the like (Fig. 4), may seal the folded article.

The paper may be treated with medicants and one or both of its sides covered with waterproofing **43**. The parts **30** and **25** may be added immediately following the stamping operation.

From the foregoing it will be seen that I have provided a mask efficient in operation, simple in construction, yet insuring free and easy breathing at all times to the wearer with no danger of infection from or to the operating field. It is also such as to permit of its destruction after one-time usage. Nor is the vision of the wearer interfered with when wearing my mask.

It is intended that the foregoing be illustrative rather than limiting and that parts may be used without others.

I claim:

1. The combination in a one-time-use nurse's mask formed from a blank comprising a flat piece of flexible fibrous material and having an integral upper vent in connection with a formed chamber about the nostrils and also having a lower chin portion, of an upper projecting tab along the centerline of the blank having right and left extending ends, said ends being brought together and joined to lap one upon the other to form the vent, said vent having an integral inner bridge portion having a lower arcuate edge for intimately engaging the nose below the wearer's eyes, the top of the vent being in alignment vertically with the nose and being between and below the eyes, a lower slit extension on the centerline of the blank having adjacent edges along the slit, said edges being lap-joined together to form the lower chin portion conforming in shape with the wearer's chin and to underlie the point of said chin, said mask having opposite side pieces having a periphery in connection with the chin and vent portions and so formed that in the operative position of the mask on the face said periphery overlies soft portions of the cheeks and chin for substantial areas coextensive with the parts of the face contacted, an elastic loop piece for each side piece removably fastened to only one point of each thereof for removably looping an ear to tensionably seal the mask with the chin, cheeks and nose of the face, said mask, vent and chin portion being foldable for flat packaging thereof.

2. The device of claim 1 including a strip of resilient material along the periphery of the inner side of the side pieces and chin portions to facilitate said tension seal.

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