Sept. 20, 1932. F. R. M. BULMER 1,878,464

MASK

Filed July 24, 1929

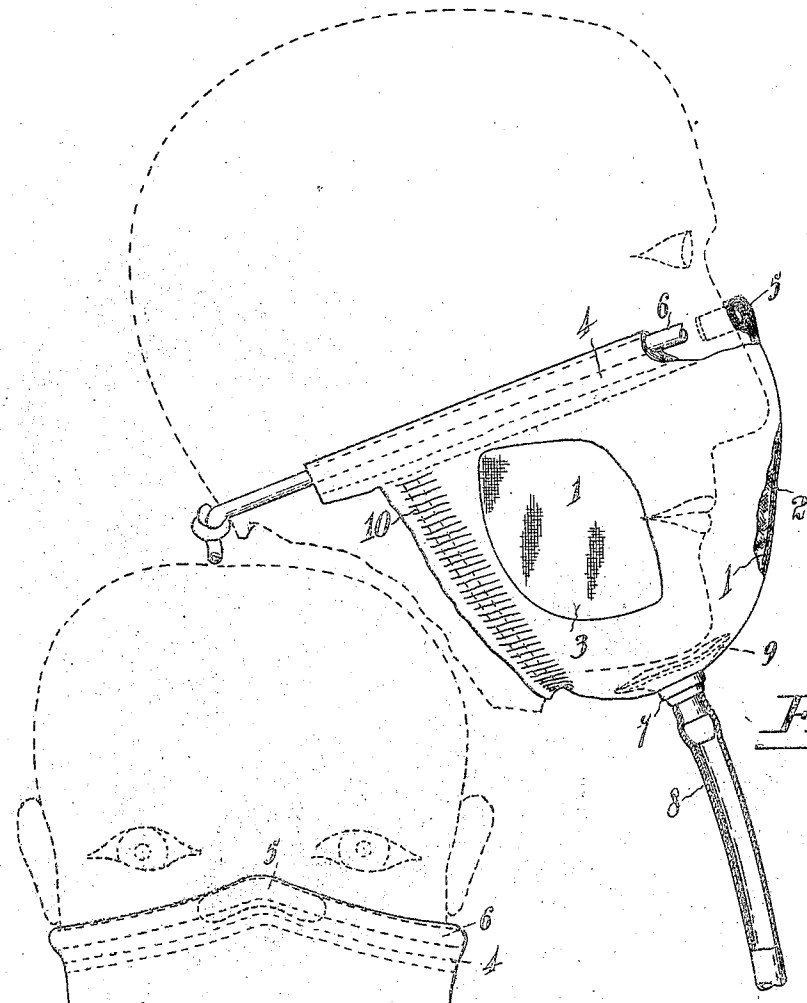


Fig. 1.

Fig. 2.

Inventor

F. R. M. Bulmer

By J. Edw. Maybee

Atty.

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UNITED STATES PATENT OFFICE

FREDERICK R. M. BULMER, OF TORONTO, ONTARIO, CANADA

MASK

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In certain trades or callings, for example, granite workers, brass finishers, workmen using poisonous gases or the like, the health of the workmen is endangered through the inhaling of granite dust, fine particles of brass, gas or other material with which the worker is operating.

My object is to devise a mask which may be positioned over the mouth and nostrils which is light and flexible in construction, which will be comfortable in use and effect on the face of the wearer, which provides an entirely separate atmosphere inside the mask for respiratory needs, which is easily and quickly applied or removed, and which allows the wearer to talk or expectorate without complete removal of the mask.

I attain my object by constructing the mask of a light flexible material and of sufficient size to hold a considerable quantity of air when in position on the face. The mask is provided with an air inlet and one or more outlets. Air is supplied to the mask from a suitable source at a rate sufficient to maintain the mask in an inflated condition, so that while the mask remains inflated the wearer may know that the mask is operating satisfactorily.

The mask is constructed in detail substantially as hereinafter described and illustrated in the accompanying drawing in which:—

Figure 1 is a side elevation, partly broken away of the mask; and

Figure 2 a front view of the same.

In the drawing like numerals of reference indicate corresponding parts in the different figures.

The body of the mask is roughly of segmento spherical form and is preferably formed of a porous fabric 1 preferably covered by oiled silk 2 or other non-porous material provided with gaps or openings 3 for the escape of air. The mask, it will be seen from the drawing is intended to cover only the nostrils and mouth leaving the eyes and upper part of the face exposed.

The upper edge of the mask is provided with a hem 4 and in this hem is placed a U shaped member 5 adapted to hold the upper edge of the mask about the nose. Also threaded through the hem is a tie cord 6 for securing the mask in position. I find best results are obtained if this tie cord be made of a piece of rubber tubing, as the fastening and unfastening is facilitated.

The rear edge of the mask has stitched therein an elastic strip 10 by means of which the rear edge of the mask is "gathered" to hold the same resiliently against the sides of the face and the under side of the chin.

A fitting 7 is provided to which a hose 8 may be attached for the supply of air. To the inner end of this fitting is connected a fabric bag 9, which being porous, allows the air to enter the mask, but acts as a diffuser so that the wearer does not receive a blast of air directly from the hose. It also acts as a filter to prevent the entrance of dirt.

The mask is secured in place as indicated in the drawing and the hose 8 connected with the air supply (not shown). Air may escape through the gaps or outlets 3 and possibly also a certain amount will escape about the edges of the mask which is a desirable feature in hot weather as it prevents chafing of the face. The air will be supplied, however, at a rate sufficient to maintain the mask in an inflated or bellied out condition, thus enabling the user to tell whether the mask is operating satisfactorily. As the air is supplied to the mask at a rate to keep it inflated, there will be no inflow of air around the edges of the mask or through the outlets 3.

The wearer may talk while the mask is in position, or if he wishes to expectorate he may grasp the mask below the chin and stretching the elastic strip 6, the lower part of the mask may be temporarily moved out of position.

It will be evident of course, that various modifications in the details of construction are possible. For example the mask may be of all non-porous material and simply provided with a restricted outlet similar to the inlet shown. The mask might also be provided with an upward extension provided with goggles for the protection of the eyes.

From the above description it will be seen that I have devised a mask which will satisfactorily attain the object of my invention as

set out in the preamble of this specification.

What I claim as my invention is:—

1. A face mask of roughly segmento spherical form comprising a body portion formed from flexible sheet material adapted to be fitted over the mouth and nostrils of the wearer and provided with an air supply connection; means for securing the upper margin of said mask snugly about the head; and resilient means for holding the rear margin of said mask snugly against the sides of the face and under side of the chin, said mask being arranged to permit only a restricted escape of air whereby the mask may be maintained in inflated condition.

2. A face mask of roughly segmento spherical form comprising a body portion formed from flexible sheet material adapted to be fitted over the mouth and nostrils of the wearer and provided with an air supply connection; a tie of flexible tubing for the upper margin of said mask for securing it snugly about the head; and means for holding the rear margin of said mask resiliently against the sides of the face and under side of the chin, said mask being arranged to permit only a restricted escape of air whereby the mask may be maintained in inflated condition.

Signed at Toronto, Ontario, this 17th day of July, 1929.

FREDERICK R. M. BULMER.