

May 1, 1923.

R. MALCOM
RESPIRATOR

1,453,365

Filed Dec. 15, 1920

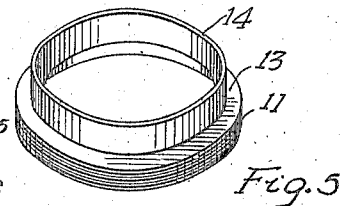
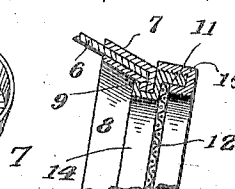
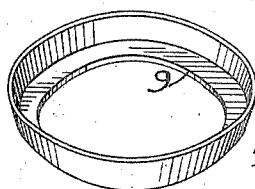
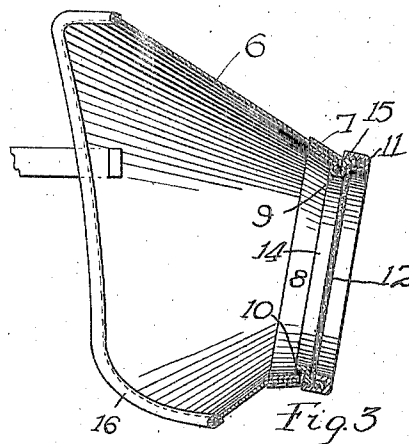
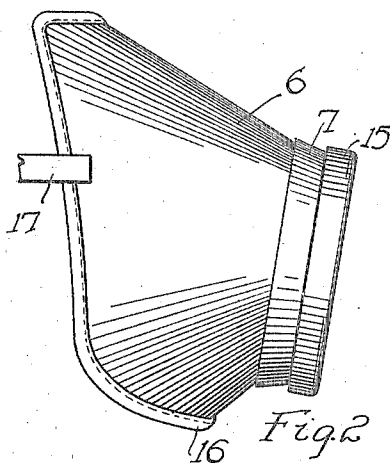
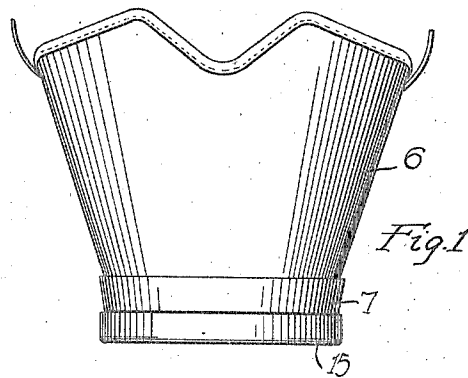


Fig. 4

Fig. 6

Fig. 5

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UNITED STATES PATENT OFFICE.

ROBERT MALCOM, OF CHICAGO, ILLINOIS.

RESPIRATOR.

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To all whom it may concern:

Be it known that I, ROBERT MALCOM, a citizen of the United States, residing at Chicago, Cook County, Illinois, have invented certain new and useful Improvements in Respirators, of which the following, taken in connection with the drawing, is a description.

My invention has for its object the production of an improved form of respirator designed to cover the nose and mouth of the wearer and prevent the inhalation of dust, smoke or other extraneous matter.

Another object is to provide a respirator which will be of simple construction, cheap to manufacture, and effective for the purpose.

The particular object of my invention is to provide a novel construction of means for securing the filter medium to the body portion of the respirator, which can be assembled in a single operation, and wherein the body portion of the respirator which may consist of leather, rubber, or any other suitable material, is held in place by frictional engagement between two concentric rings, which rings are rigidly secured by a third member which also forms a seat for the filter medium without any extra parts or fastenings being employed for the purpose.

A further object of my invention is to provide means for securing same to the head of the wearer whereby the respirator may be easily adjusted to different sized heads, and also whereby the head band may be quickly and readily changed for renewal purposes, etc.

Further objects and advantages of my invention will appear hereinafter, and in the accompanying drawings I have illustrated what I now consider the preferred form of my invention, though it is obvious certain modifications may be made without departing from the spirit thereof, and in these drawings:—

Figure 1 is a top plan view of my invention,

Figure 2 is a side elevation of same,

Figure 3 is a vertical sectional view of my invention,

Figure 4 is a perspective view of one of

the concentric rings used in this construction and :—

Figure 5 is a perspective view of the holding rim.

Referring to the drawings 6 represents what I shall term the body portion of the respirator, which may be formed of leather, rubber, or any other material suitable for the purpose.

7 and 8 are holding rings positioned concentrically with respect to each other and receive between them the material forming the body portion of the respirator, as shown in Figure 3. The body portion 6, of the respirator is held in place through frictional engagement with the concentric rings 7 and 8.

Each of the rings 7 and 8 is provided with an inwardly extending flange 9—10, respectively. The rings 7 and 8 are locked in positive engagement with each other by means of the circumferentially extending holding member, 11, which forms a seat for the filter medium, 12. The member 11 is provided with a circumferential shoulder 13, on which is seated the lowermost ring 7. The tubular portion 14, which extends upwardly through the rings 7 and 8 is bent over to positively engage the flanges 9 and 10 as shown in Figure 3. This can be accomplished in a single operation, preferably by stamping or pressing, without any extra parts or fastenings being employed for the purpose.

The filter 12 may be of any type known in the art, depending on the use to which the respirator is to be put.

The filter 12 is held in place by means of the retaining ring, 15, which is threaded to engage the member 11 as shown in Figure 3. The fore edge of this retaining ring 15 is bent inwardly and contacts with the filter 12 to hold it against the flange or shoulder 13. It will be obvious that this construction permits the filter medium to be quickly and easily removed by unscrewing the retaining ring, 15, for the purpose of exchanging same or for any other reason.

The binding 16 may be secured around the edges contacting with the face of the wearer if desired, and may be formed of rubber, felt, or any other suitable material.

In this instance I have shown the binding secured to the respirator by stitching, although it is obvious it may be done in any other manner well known in the art.

5 17 is a headband, formed preferably of elastic material, by means of which the respirator is secured to the head of the wearer, and is so fastened that it can be removed when desired.

10 I claim:—

1. A respirator comprising a body portion of flexible material adapted to be secured to the face, rings concentrically arranged with respect to each other engaging one edge of said body portion, means for engaging the inner edge of said rings and forming a shoulder, a filter member, and a retaining member engaging said means and holding said filter in place.

20 2. A respirator comprising a body portion having a circular opening at the forward end thereof, concentric rings engaging said respirator on the outside and inside of the body portion at said opening, a filter positioned in said opening, and a holding member engaging the aforesaid rings and forming a seat for the filter medium.

25 3. A respirator comprising a body portion secured by frictional engagement between two concentric rings, each of said rings having an inwardly extending flange, a retaining member having a tubular portion extending through said rings and adapted to be bent in frictional engagement with said flanges, a filter in said retaining member, means for holding said filter in place, and a removable, adjustable headband secured to said respirator.

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In testimony whereof I have signed this specification.

ROBERT MALCOM.