

June 29, 1926.

R. BELLO

1,590,668

GAS MASK

Filed July 30, 1925

2 Sheets-Sheet 1

Fig. 1.

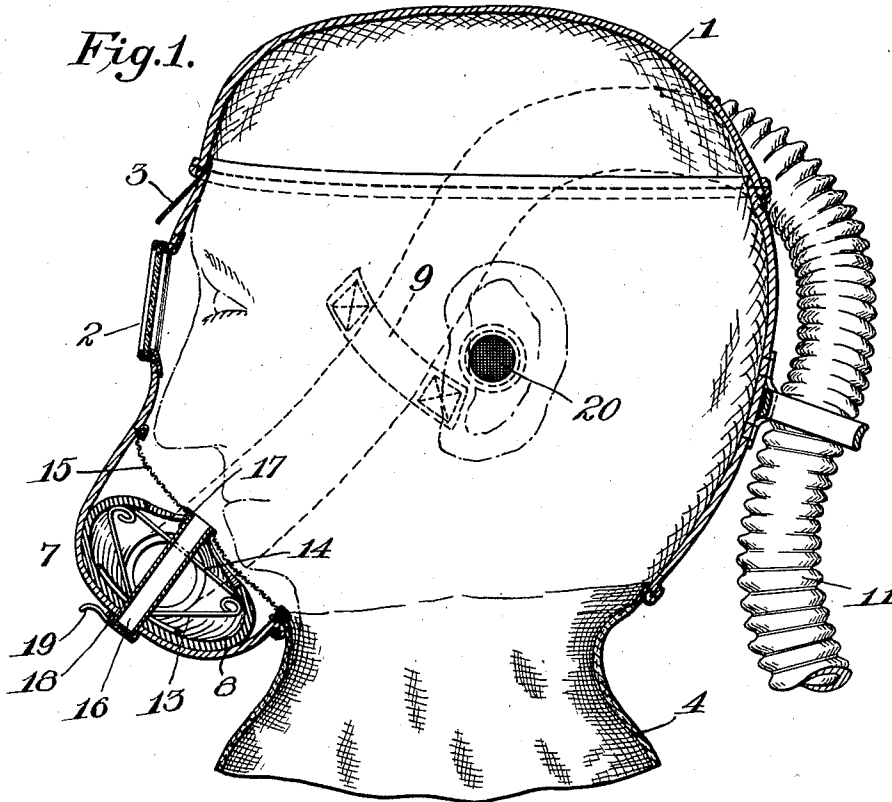


Fig. 2.

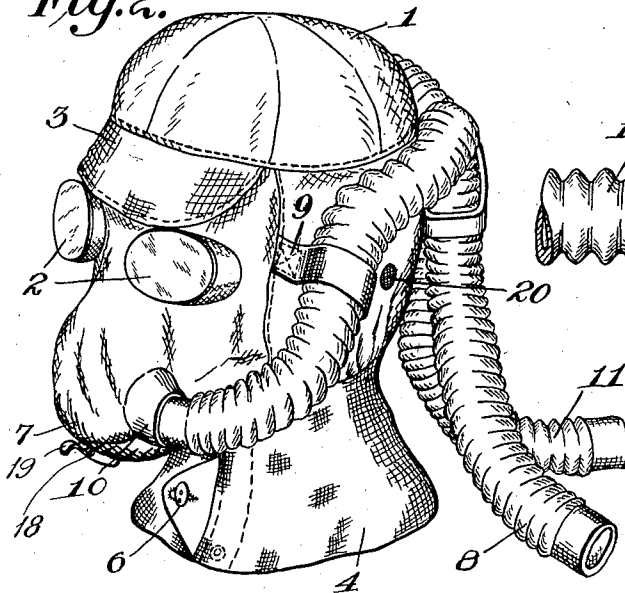
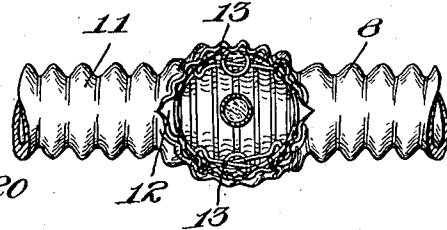


Fig. 3.



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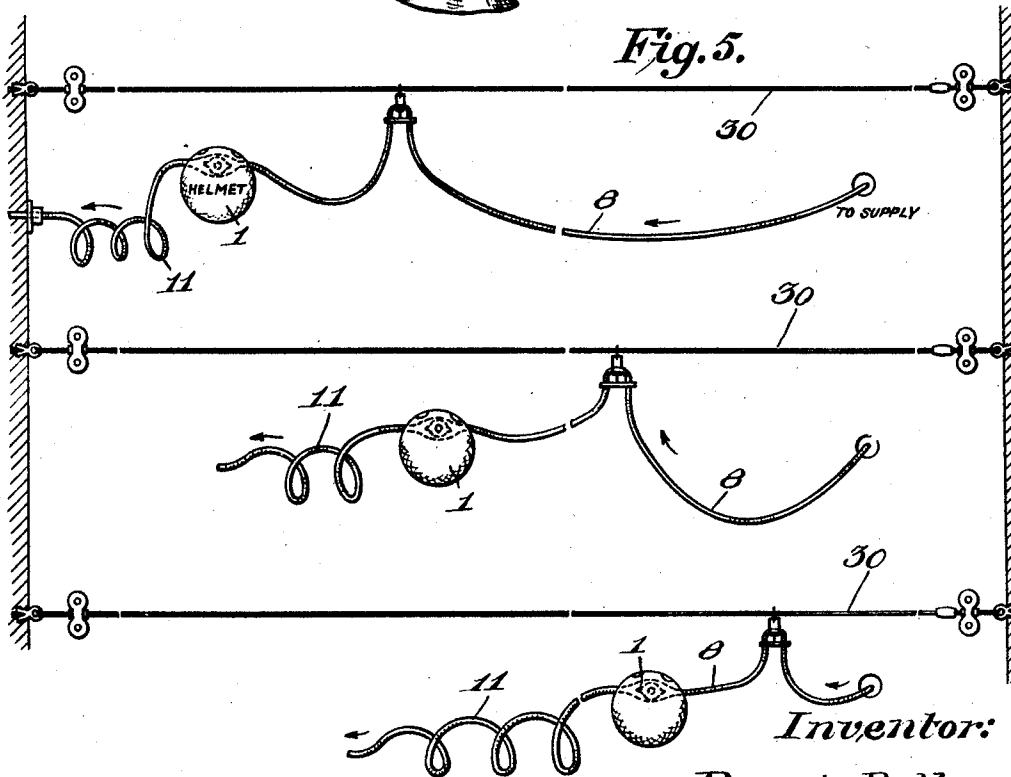
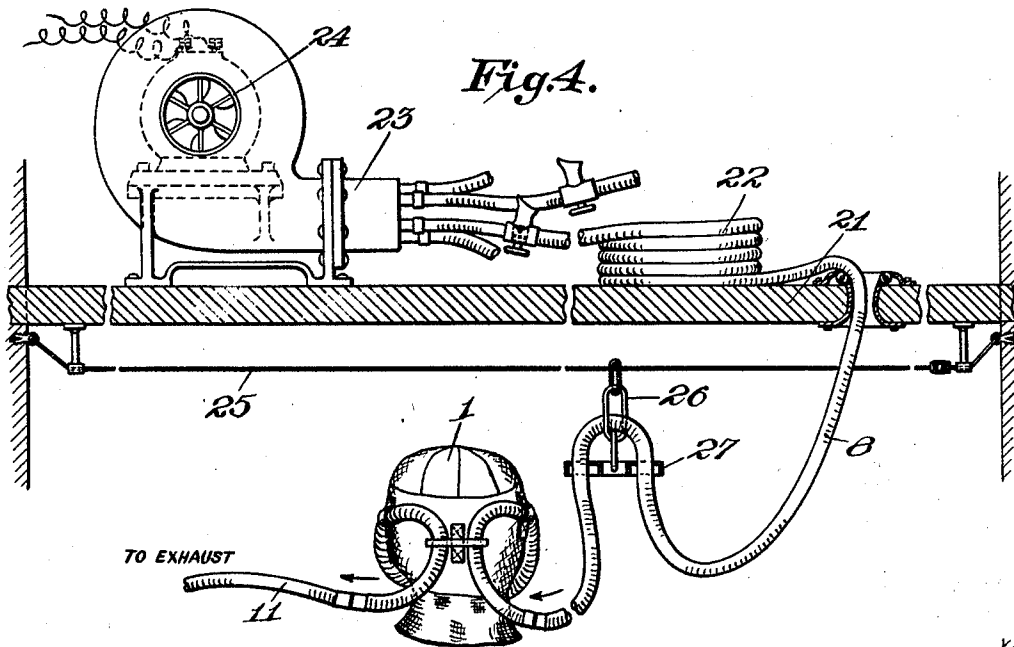
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Inventor:
Rosario Bello
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Patented June 29, 1926.

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UNITED STATES PATENT OFFICE.

ROSARIO BELLO, OF TRENTON, NEW JERSEY.

GAS MASK.

Application filed July 30, 1925. Serial No. 47,115.

My invention relates to new and useful improvements in gas masks and to the means for supplying them with air or oxygen, so that workers in ammonia plants, or workers in plants refining and distilling gasoline, or, in fact any plant where dangerous fumes are liberated, may perform their work with a great degree of safety and comfort.

As is well known to those skilled in the art, when working in plants where the air is contaminated with deadly fumes, it is necessary that some form of helmet or mask be worn so that fresh air or oxygen may be supplied to the workers, and the present invention contemplates the use of a specially constructed mask that will be very compact in nature, easily applied and relatively cheap to manufacture.

Still another object of the invention is to provide a mask or helmet as will be hereinafter more fully described, and to provide a means for supplying the workers with air or oxygen, and at the same time so arrange the pipes or hose connected with the air supply that the wearer of the mask may move from place to place on the factory floor, and not be hampered with the air supply pipe.

Still another object of the invention is to provide a means of air supply to the wearer of the gas mask, the fan being placed at a point about the wearer, and the air supply pipes or tubes arranged about the ceiling and so strung on wires or supports that the wearer may have free access to his machine or tank, and be able to walk for a distance say of fifteen or twenty feet, with no chance of becoming entangled in the air supply pipes.

Still another object of the invention is to provide a mask that comprises a leather head piece about which is secured an elastic neck band so that the head piece will be practically air tight, and to also use a piece of flexible hose that may be readily bought on the open market, and split and so arrange a portion of the same that the fresh air or oxygen may be readily pumped and supply the necessary air to the wearer of the mask.

Still another object of the invention is to provide a mask that may be manufactured at an extremely low price, due to the fact that the assembling is a relatively simple matter, as will be hereinafter more fully explained.

Still another object of the invention is to provide a screen directly in front of the air

supply to the mask so that the air may be distributed throughout the mask and to catch any impurities that might be forced through the tube. Through this screen is also provided a short metal tube, so that the saliva in the wearer's mouth may be expectorated or discharged through the tube when the occasion warrants the same.

With these and numerous objects in view, the invention consists in certain new and novel arrangements and combinations of parts as will be hereinafter more fully described and pointed out in the claims.

Referring now to the drawings showing a preferred embodiment of my invention,

Fig. 1 is view in elevation of my improved gas mask as applied to the head of a wearer, some of the parts being shown in section, for the sake of clearness.

Fig. 2 is a perspective showing the mask as applied to the wearer.

Fig. 3 is a view from the rear showing how the air hose is split and held open opposite the mouth of the wearer.

Fig. 4 is a view in elevation showing a floor in section and showing the air supply means for supplying the helmets with fresh air, and

Fig. 5 is a diagrammatic view taken from beneath showing how the several helmets may be supported along the ceiling of a factory or shop.

Referring now more specifically to the several views, and to the helmet or mask in particular, it will be seen that it consists of a leather head piece 1 having eye pieces 2 mounted therein and a small reinforcement or visor 3 directly above the eye pieces, while to the lower portion there is securely sewed or fastened a neck band 4 of elastic material with the extra flap 6 to more tightly fasten this neck band about the wearer.

Directly in front of the mask and at a position which will be opposite the mouth of the wearer, is cemented a rubber hood 7 which may also be sewed to the head piece proper 1, so that the air tube 8 passing in front of the mouth section of the mask will be held tightly in position and at the same time will be absolutely air-tight, so that there will be no leak of air from the air supply pipe where it passes in front of the mask to supply the air or oxygen to the wearer.

This air pipe 8 is the standard form of air tubing, it being capable of being stretched or compressed to a certain extent

and may be readily purchased in the open market.

As may be seen in the several figures, this air tubing 8 is fastened around the head piece, it being held on its opposite sides by the strips 9, and as before mentioned, enters the hood 7 at the point 10 and passes out of the hood on the opposite side, the exhaust portion 11 being shown clearly in Fig. 2.

This air tube 8 is preferably split as at 12 and is held in a split position by the insertion of a metal coil spring 13 which spring may also be braced as at 14 so that there is no danger of the split portion of the tube collapsing as the tube is supported to be held widely open at a point just opposite the mouth of the wearer to permit a large quantity of air to the mask.

As may be seen in Fig. 1, the mask is supplied with a metal screen 15 directly in front of the mouth of the wearer and under the rubber hood 7, so that any impurities furnished or passed through the air supply tube 8 will be screened and caught before passing to the mouth of the wearer.

Passing centrally through the air tube 8 at the split portion 12, is a small metal tube 16 having its upper end also passing through the screen 15 while the upper end of the tube 17 may be crimped over the wire mesh 15 to hold the same in position. The lower end of this tube not only passes through the outer surface of the air tube, but also through the rubber hood 7 and has a little gate 18 on the end thereof which may be operated by the handle 19, so that the wearer when his mouth becomes full of saliva, may open the little gate 18 and expectorate through the tube 16. Of course, the little gate 18 will have a spring thereon to keep the gate normally shut so that no air or fumes will pass to the mouth of the wearer.

I have shown in Figs. 1 and 2 small screen pieces 20 which may be placed opposite the ears and inasmuch as the helmet or mask tightly fits on the head of the wearer, the air which might pass through there will be in such small quantities that it will not in any way contaminate the air breathed by the wearer. These ear pieces also will relieve the air pressure on the wearer's ear drum.

As far as the specification has proceeded, it will be seen that I have produced a gas mask which may be made up of a leather head piece having a rubber hood associated therewith, which hood cements the air hose across the mouth portion of the mask and in which hood is passed the air supply tube which in turn is split at its rear portion and the split portion held in an extended manner so that the air may be forced into the mask opposite the mouth of the wearer.

Referring now more particularly to Figs.

4 and 5, I have shown one means of supplying air or oxygen to a mask or for supplying air or oxygen to a plurality of masks. In Fig. 4 there is shown the ceiling 21 through which may be passed the air tube 8 and this may be curled as at 22 and then led to a blower or fan 23 which in turn will be driven by an electric motor 24. Beneath the ceiling and in the room where the gas mask is to be used, I stretch a wire 25 with a support 26 for the air tube 8 and the operator may then walk up and down the room and the air chute 8 will be supported above his head so that it will not in any way hamper his movements or become tangled about his legs.

A stop 27 is shown on a support 26 so that the tube may be made either shorter or longer so that it will always extend above the head of the operator.

It will be noticed in Fig. 4 that I have shown the tube as broken, as in reality the support 26 will be much higher relatively to the mask than as shown in this figure.

In Fig. 5, I have shown a schematic or diagrammatic means of supporting a number of helmets by providing a plurality of wires 30, and it will be understood that this view is supposed to be taken looking towards the ceiling, the wires being stretched in the different rooms or about the ceiling of the one room so that the masks will be most accessible to the work to be performed.

Also, in Fig. 5, I have shown the exhaust pipe 11 as being longer in length than in Fig. 2, and if the fumes were ever so deadly that it might be considered well to have the exhaust pipe lead to a window, they may be made in this long manner. However, the masks and tubes in most instances will be made with simply a short portion for the exhaust, as the pumping of the fresh air into the mask will overcome the atmospheric pressure and the air in the mask will be that which comes from the blower.

From the foregoing it will be seen that I have produced a gas mask, which is exceedingly cheap to manufacture and very efficient in service, and I have also provided a means for supplying air to the mask and to so support the mask that the air supply pipe will be in no way in danger by the movement of the operator.

Many slight changes might be made without in any way departing from the spirit and scope of the invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A gas mask comprising a head piece and a neck band of elastic material secured to the lower portion of the head piece, the said head piece provided with an opening, a screen in said opening, a main air supply tube attached to the head piece and having

an opening formed in its side registering with the opening in the head piece for supplying air to the wearer of the mask, an air tight covering secured to the head piece, 5 and over the said tube at a point where the latter supplies air to the head piece, and a normally closed tube extending through the air tight covering and the said screen, so that the wearer may expectorate without 10 removing the mask, and the outer end of said air supply pipe forming the discharge passage-way for the air utilized in the head piece.

2. A gas mask comprising a head piece 15 and a neck band of elastic material secured to the lower portion of the head piece and means for tightly fastening the same about the neck of the wearer, the said head piece

provided with an opening opposite the mouth of the wearer, a screen in said opening, a main air supply tube attached to the head piece and having a reinforced opening formed in its side and the said opening registering with the opening in the head piece for supplying air to the wearer of the 25 mask, an air tight covering secured about the opening in the head piece and about the air supply tube where the latter supplies the air to the head piece, a normally closed small pipe extending through the air tight 30 covering and the said screen, and means for discharging the air utilized in the head piece.

In testimony whereof I affix my signature.

ROSARIO BELLO.