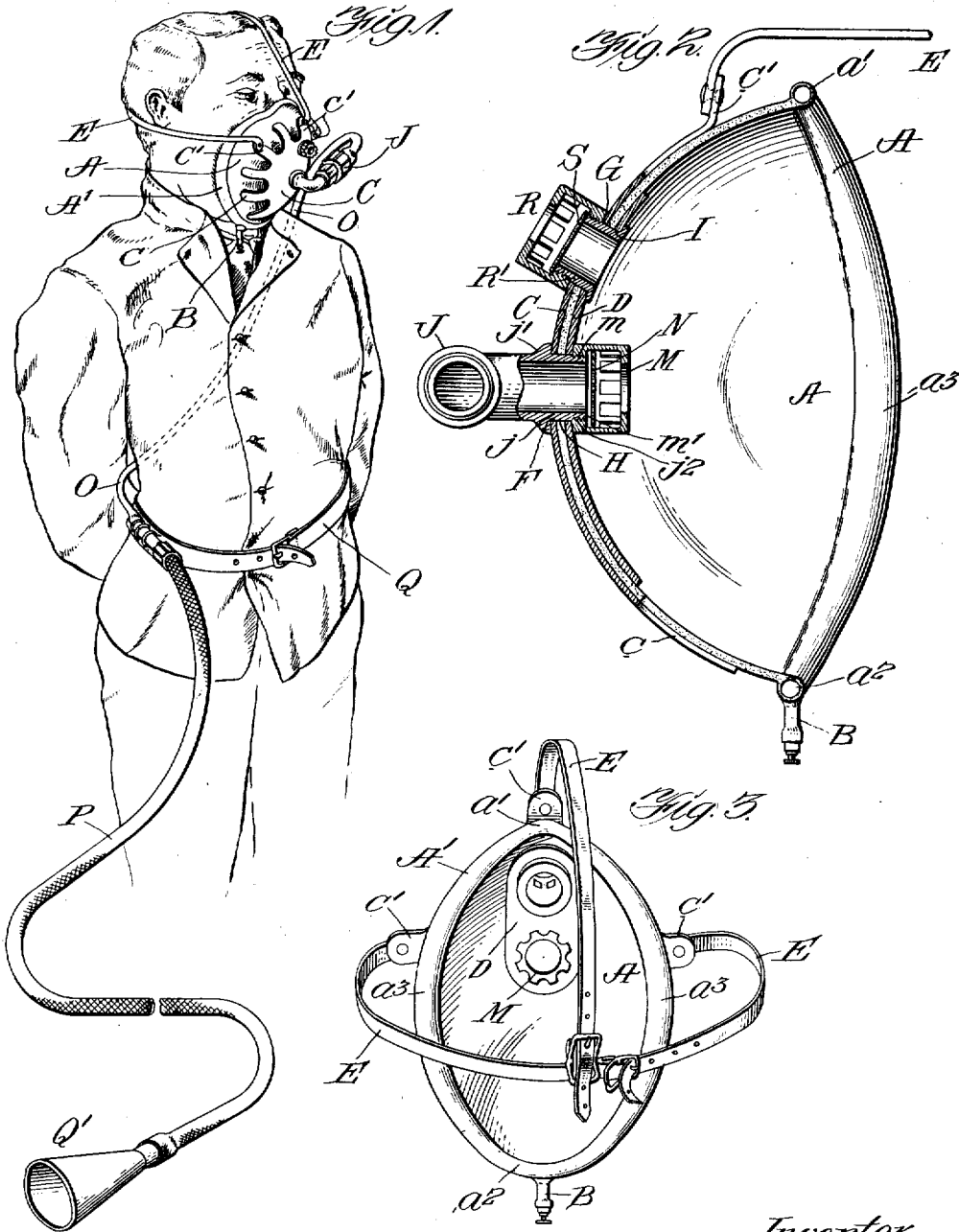


G. F. GOODNOW.
 RESPIRATION MASK.
 APPLICATION FILED MAR. 12, 1908.

902,961.

Patented Nov. 3, 1908.



Witnesses:
Paul J. Gathmann
 M. S. Adams.

Inventor
 George F. Goodnow
 By his Attorneys:
Paulson & Night

UNITED STATES PATENT OFFICE.

GEORGE F. GOODNOW, OF WAUKEGAN, ILLINOIS.

RESPIRATION-MASK.

No. 902,961.

Specification of Letters Patent.

Patented Nov. 3, 1908.

Application filed March 12, 1908. Serial No. 420,688.

To all whom it may concern:

Be it known that I, GEORGE F. GOODNOW, a citizen of the United States, residing in Waukegan, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Respiration-Masks, of which the following is a specification.

Those working in or about gas-works are often exposed to escaping gas and many cases of asphyxiation have occurred.

The primary object of my invention is to provide means whereby a workman may safely enter gas-works or work in places where gas escapes while breathing air supplied from some distant point. For this purpose I have provided a mask of improved construction which fits over the mouth and nose of the wearer and which is supplied with fresh, pure air through a valve-controlled tube while the exhaled air is permitted to pass from the mask through a valved port.

My improved mask, while especially intended for workmen in gas-works, is also suitable for use by firemen and others who are exposed to noxious gases or vapors of various kinds.

In the accompanying drawings Figure 1 is a perspective view of my improved respiration mask and shows also how it is worn. Fig. 2 is a view of the mask on an enlarged scale in vertical central section. Fig. 3 is a perspective view of the mask viewed from the rear.

The body-portion A of the mask is preferably made of flexible sheet rubber, that is of substantially hemispherical form, being of such size as to cover the mouth and nose of the wearer and it has a beaded edge-portion A' which is hollow and inflatable. The beaded portion is formed with a part a' adapted to fit snugly the bridge of the nose, while the lower portion a² fits under the chin and the sides a³ fit closely the cheeks. Preferably the portions a³ are somewhat larger in area than the portion a'. The hollow beaded edge may be inflated or deflated by the valved branch-pipe B.

A front-plate C is applied to the outside of the front of the mask and a back-plate D is applied centrally to the rear of the front portion thereof. The plate C is formed with radially extending arms c, c', some of which c lie flat against the mask while others c' are bent outwards to provide means for attaching the straps E which secure the

mask to the head of the wearer. The arms c serve to keep the body of the mask in shape and to hold it firmly in place on the face. The front-plate has two apertures F and G and the back-plate has two registering apertures H and I. The mask has corresponding apertures between these openings. A coupling J is secured to the mask at the apertures F, H and through this coupling air is admitted to the mask. As shown, the coupling is L-shaped and has a portion j which passes through the body of the mask and through the apertures F, H, and it is shouldered at j' to fit snugly against the front-plate and threaded at j² to receive the threaded part m of the valve-casing M.

The valve-casing is open at its inner end and at the sides and has a valve-seat m' to receive the disk-valve N which is preferably of mica. The arrangement is such that air can be drawn in through the coupling but cannot be forced outwards therethrough. The coupling J is connected to a light, flexible hose O which passes over to the back of the wearer and down to the waist where it is connected to a stouter hose P which should be of considerable length in order to pass out to the fresh, pure air. The inner end of the hose is supported on a belt Q applied to the wearer and at the outer end of the hose there is a funnel-shaped receiver Q' through which air can readily enter, especially when the receiver is turned against the wind.

A valve-casing R is attached to the mask by means of a coupling R' which extends through the mask and through the apertures G and I and this valve-casing has a disk-valve S which prevents the entrance of air, gas or smoke but which opens to permit the exhalations from the wearer of the mask to pass out.

Experience has demonstrated that a mask constructed in accordance with my invention may be made so light as not to be burdensome or interfere with the work of one who wears it. Fresh air can be drawn through the mouth and nostrils and vitiated air can be expelled as in the ordinary process of respiration. The construction is such that when the mask is applied to the face an air-tight fit therewith is insured and the weight of the main supply hose is borne by the waist instead of by the head of the wearer, the latter supporting only the

weight of the mask and a comparatively short, light length of hose which is also partially supported by the belt. The construction is such that the mask can be conveniently manufactured and assembled and when assembled all leakage is entirely prevented.

It will be observed that the couplings for the valve-casings are clamped against the front and rear plates which compress between them the rubber mask proper, thus insuring a packed joint. The arms of the front-plate serve to keep the body of the mask in shape as well as to provide means for attaching the securing straps at proper places to hold the mask firmly in place.

I claim as my invention:

A respiration-mask comprising a body-portion, a front-plate having radially extending arms bearing against the front of the mask and some of which are bent outwardly, straps attached to the bent arms for securing the mask to the face of the wearer, a back-plate within the mask and valved entrance and exit couplings applied to said plates.

In testimony whereof, I have hereunto subscribed my name.

GEORGE F. GOODNOW.

Witnesses:

ANNA NICHOLS GOODNOW,
CHARLES H. KING.