The present invention relates to a device which can be adapted to all kinds of protective respiratory apparatus generally referred to as "gas masks", for the purpose of enabling gas mask wearers, the pressure of this cap on the bottom of the receiver (breathing position). When pressure is not applied (position of rest) it is absolutely impervious against breathing, and the stronger the breathing the tighter it is, the exterior pressure 5 placing the two lips of each of the slits referred to tightly against the other.

The invention will be readily understood by the aid of the supplementary description which follows and of the attached drawing, which are, of course, given as a typical example.

Fig. 1 illustrates in plan one of the two outer discs of the valve.

Fig. 2 shows one of the internal discs of the same valve.

Fig. 3 shows, also in plan, the assembly or piling together of these two kinds of disc forming the valve proper.

Fig. 4 is a cross-sectional view of the valve through line 4—4 of Fig. 3.

Fig. 5 shows the placing of this valve in a container, attached to one of the cheeks of the respiratory apparatus.

Fig. 6 is, to a smaller scale, a view of the assembly, with the permanent closing system, the breathing tube being inserted in the mask.

Fig. 7 shows the closing system in position for use.

Fig. 8 is a perspective view of a respiratory apparatus with a device of this kind.

According to the invention, the valve of this device can consist of two rubber discs α with a central hole β (Fig. 1) and of several other discs c (three in the drawing) each with an arc shaped slit d not passing through its centre (Fig. 2).

These discs c are placed against one another, care being taken to conveniently displace their slits d so that these may be arranged symmetrically around the complete circle. In the case of the drawing, these slits are displaced at an angle of 120 degrees from one another (Fig. 3). These discs c are then placed between the two outer discs α (Fig. 4), then the assembly consisting of the five discs is placed in a container e closed by a plug f and fixed into the inner wall g of the mask by means of a washer i and a nut (Fig. 5).

As shown in Fig. 6 a tube i, whose external diameter is larger than that of the openings b of the discs α, can be passed through this valve.

It should be borne in mind, as already stated above, that this valve is absolutely gas tight, when the supply tube is inserted or not inserted in the mask.

Finally, a permanent closing system is fitted to the rubber tube j, which forms an extension of the two lips of each of these slits can only separate from one another to allow the passage of the liquid by the

In order to avoid the accidental insertion of the rubber tube in the mask before the other end of the rubber dips into the supply liquid and thus making it possible to breathe. In the harmful gas, the breathing tube is provided with a system for keeping it constantly closed.

The present invention aims equally at a more particularly interesting gastight device which, when placed at the end of the rubber tube, closes it permanently, this condition only being reached when pressure is exerted on the bottom of the vessel containing the liquid.

This gastight device consists of a rubber cushion or cap with longitudinal slits following one or several directions and arranged at the extreme bottom of a stiff plunger tube. The two lips of each of these slits can only separate from one another to allow the passage of the liquid by the
of the pipe \(i\), and which dips into the liquid to be absorbed and comprises (Figs. 6 and 7) a valve consisting of a rubber cushion or cap \(t\) slit longitudinally at one or several points \(u\).

In the case of the drawing, this cushion \(t\) is carried on a stiff mouthpiece \(v\), connected through the rubber tube \(j\) to the supply pipe \(i\), but this cushion could obviously be mounted directly on the tube \(i\).

It is easily realized that these slits \(u\) can only open if the cushion \(t\) is expanded by being held pressed against the bottom of the receptacle \(z\), its compression and resulting expansion or spreading alone being able to cause the opening of the slits in order to allow the passage of the liquid to be taken or oxygen to be breathed.

This stopper is on the other hand gastight if breathing occurs in the rest position (Fig. 6) and the stronger the breathing the tighter it becomes, the exterior pressure pressing the lips of each of the slits \(u\) against one another.

Thus, to draw in the liquid \(s\), the wearer is obliged to plunge the tube to the bottom of the receptacle. He does not then risk in any way breathing in the harmful outside air even if the receptacle \(z\) is only partially filled.

In Fig. 8, which shows the assembly of the device, it will be seen that when this supply device is not in use, that is, when the tube \(i\) is not fitted to the mask \(a\), the valve is protected against all accidental introduction of foreign matter by a press button \(p\) provided with a small rubber washer \(q\) and mounted on a flap \(r\) fixed to the mask \(a\).

It is naturally evident and is also evident from the above that neither the invention nor its parts is in any way limited to the method of application described above; on the contrary it embraces all the various uses of similar devices.

What we claim and desire to protect by Letters Patent is:

1. In a gas mask covering at least the nose and mouth of the wearer and having feeding means for feeding liquid food through said mask in the form of a feeding valve in the wall thereof and a removable feeding tube adapted to cooperate with said valve, there being a mouthpiece upon one end of said feeding tube, and said feeding valve being caused to resiliently and automatically open upon said mouthpiece being thrust into said valve through said wall and to resiliently and automatically close so as to prevent ingress of gas upon withdrawal of said mouthpiece from said valve, at least three superposed elastic membranes comprised in said valve, each being formed with individual slits piercing the respective disks and individually disposed in different directions and along different section lines upon said disks.

2. In a gas mask covering at least the nose and mouth of the wearer and having feeding means for feeding liquid food through said mask in the form of a feeding valve in the wall thereof and a removable feeding tube adapted to cooperate with said valve, there being a mouthpiece upon one end of said feeding tube, and said feeding valve being caused to resiliently and automatically open upon said mouthpiece being thrust into said valve through said wall and to resiliently and automatically close so as to prevent ingress of gas upon withdrawal of said mouthpiece from said valve, at least three superposed elastic membranes comprised in said valve, each being formed with individual slits piercing the respective disks and individually disposed in different directions and along different section lines upon said disks.