

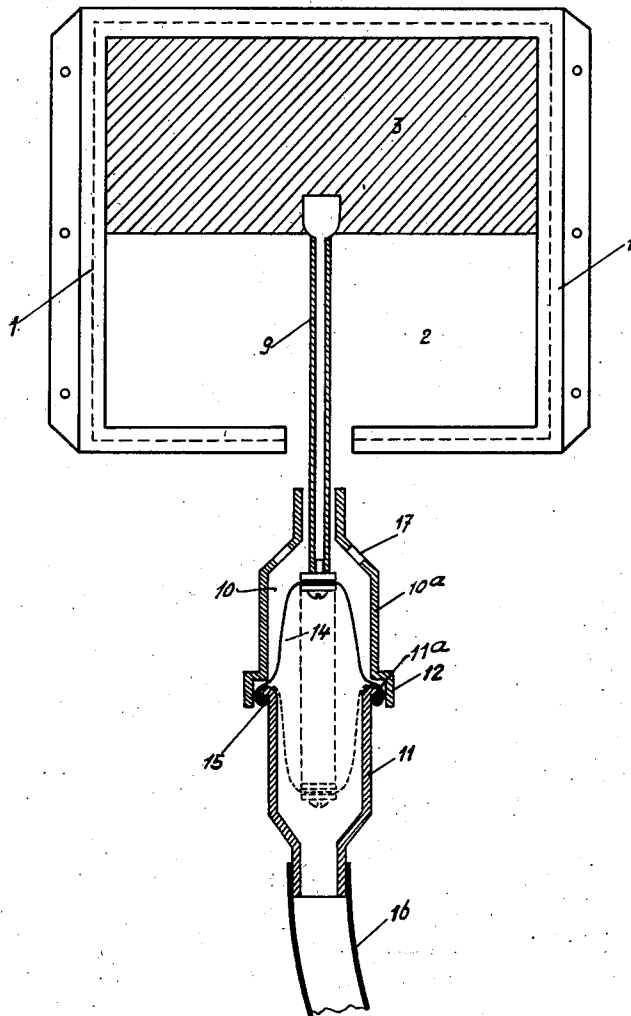
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H. GOODE, SR

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PROTECTIVE FACE SHIELD FOR MASKS

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Inventor
Hendrik. Goode Sr.
by *J. J. G. G. G.*
Atty.

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PROTECTIVE FACE SHIELD FOR MASKS

Hendrik Goode, Sr., Rotterdam, Netherlands

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1 Claim. (Cl. 2—8)

This invention relates to a mask or shield for protecting the face and eyes of workmen engaged in dangerous operations, as for instance electric welding.

It has heretofore been proposed to provide such protecting masks with a peep hole or inspection aperture adapted to be closed by a protective pane which is hinged in front of the said aperture and is turned in forward and upward direction by a pair of bellows through the intermediary of a lever system, when the workman blows into an air duct connected to the pair of bellows, in order to uncover the sight aperture. Under some circumstances the hinged protective pane, which projects from the front wall of the mask, may be of great inconvenience during welding. Moreover the known devices present the disadvantage that the air pressure effects the movements of the protective pane with the aid of levers, which not only involves a more complicated construction, but also causes a considerable retardation in the closing movement of the protective pane. This means a great drawback, when the mask is used in electric welding operations, since it is of the utmost importance to watch the parts to be welded together with unprotected eyes as long as possible, i. e. until formation of the electric arc.

One of the primary objects of this invention is to obviate the above mentioned drawbacks of the known devices and to obtain a protecting mask of very simple construction and easy in use.

A further object of this invention is to obtain a very fast and sudden displacement of any desired stroke-length of the protective pane only with a small difference in pressure. A still further object is to avoid the necessity to keep the air duct of the blowing device closed, either by the tongue of the workman, or by a special non-return valve, when the protective pane is in its uppermost or normal position, in order to prevent the lowering of said pane.

In the drawing:

The figure represents a front view, partially in section, of my improved mask.

Referring to the drawing, 1 indicates a guide frame fixed to a mask (not shown) and 3 a pane operatively mounted in the frame and supported on the upper end of a tube 9, the lower end of which fits in the upper end of a chamber 10, the latter being formed of two sections 10^a and 11. The upper edge of the lower section is provided with an outwardly extending flange 11^a, while the lower end of said section is reduced and open to communicate with a flexible tube 16. The

upper section 10^a is provided at its lower end with an outwardly extended flange 12 to cooperate with the flange 11^a on the upper end of section 11, for a purpose to be described. The upper end of section 10^a is reduced and is open for the reception of the tube 9 and is also provided with vent openings 17.

Within the chamber 10 and secured to the tube 9 is a diaphragm 14. The edge of the diaphragm is reinforced as at 15 and fits around the flange 11^a of lower chamber section 11. The flange 12 of the upper chamber section 10^a fits over the edge of the diaphragm and clamps the diaphragm over the flange 12. Suitable means are provided to secure the two sections 10^a and 11 and the diaphragm in clamping relation.

The diaphragm is of elongated form when in normal position and is of such thickness to sustain the weight of the pane and supporting tube in the extended upward position.

When it is desired to lower the protective pane to its active lowermost position, the workman sucks at the free end of the flexible tube 16. Consequently the air pressure in the lower section 11 of the diaphragm chamber is reduced and pulls the diaphragm down. The latter is passed beyond its centre position and quickly reaches its lowermost position, indicated in dotted lines in the figure shown in the drawing. The stroke-length of the diaphragm defines the displacement of the protective pane 3. To prevent a reduction of air pressure in the space above the diaphragm 14, which would counteract the movement of the diaphragm, the apertures 17 are provided in the walls of the upper part 10 of the chamber.

To return the protective pane to its inactive position, the workman blows into the tube 16. The diaphragm is then forced in its uppermost position. The wearer of the mask need not necessarily close the end of the tube 16 with his tongue, since the diaphragm 14 is so made to carry the weight of the tube 9 and the glass 3.

The device just described is of very simple construction. No pressure losses can arise. Opening and shutting of the sight aperture 2 are effected immediately, which is of great importance in electric welding. The shape of the diaphragm assures a large stroke-length. Since the diaphragm chamber is made in two parts, the diaphragm, if necessary, may be easily removed and replaced by another one.

What I claim is:

A protecting face shield for masks, including a protective pane slidably arranged along an aper-

ture in the mask proper and directly coupled to an elastic diaphragm mounted within a chamber and taking in unstrained condition a position on the one side or the other of a centre position and thereby presenting in section an oblong bell 5 shape, said diaphragm being able to carry the protective pane in the said extreme positions which define the stroke-length of the movements of the protective pane, one side of the diaphragm chamber being adapted to be coupled to a blowing duct.

HENDRIK GOODE, Sr.