

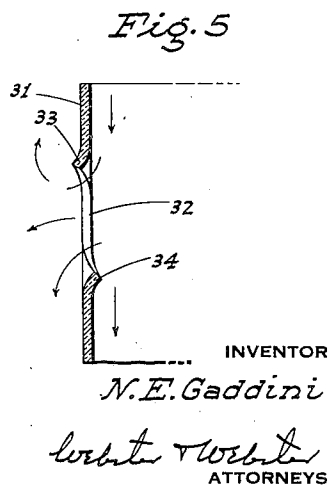
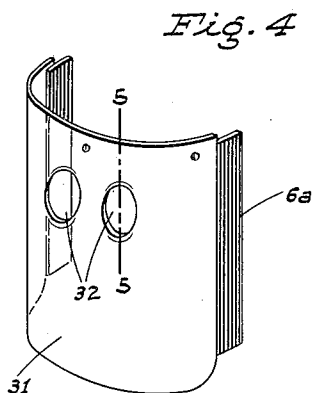
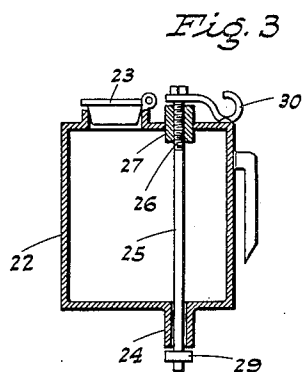
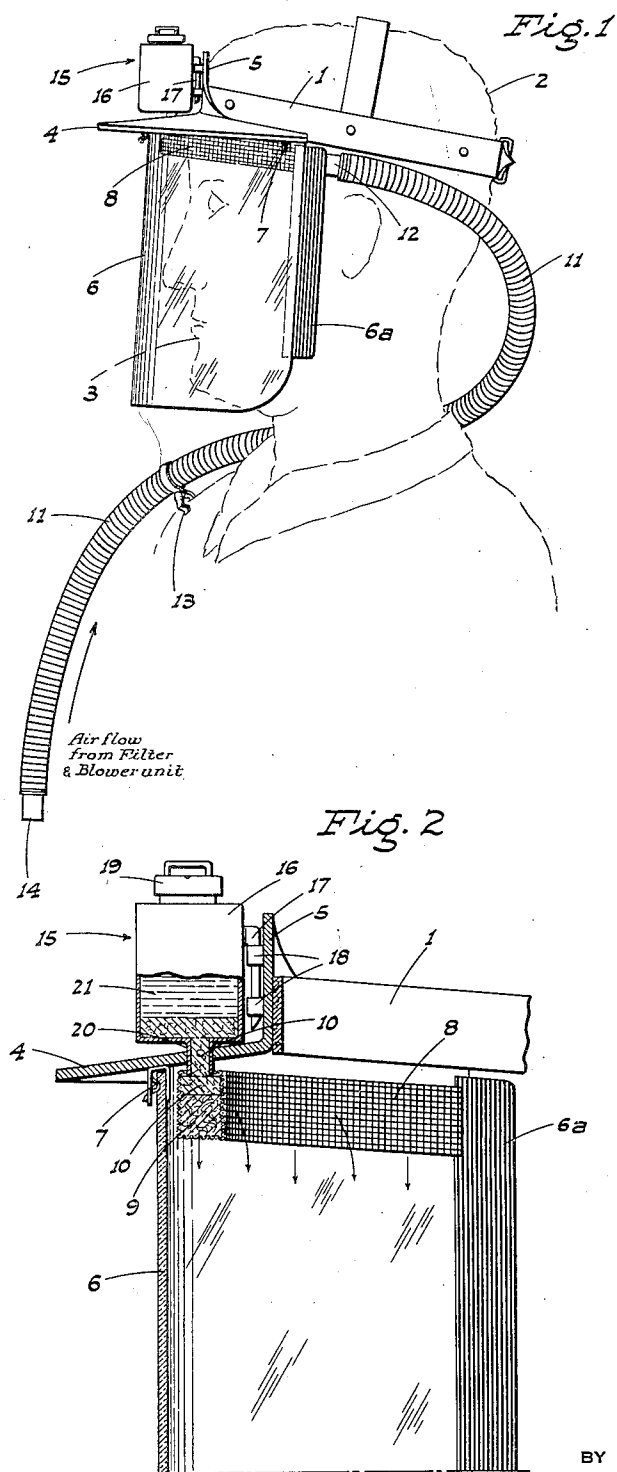
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FACE MASK

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FACE MASK

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5 Claims. (Cl. 128-142)

1

This invention is directed to, and has as an object to provide, an air conditioned face mask intended primarily for use by operators of outdoor or agricultural implements, such as tractors or harvesters, or by spray painters, etc.

Another object of the invention is to provide a face mask, as above, which is designed to prevent access of a foreign substance, such as dust or paint spray, to a person's face, this being accomplished by the application, in novel manner, of an air stream between the person's face and a transparent shield adjacent but ahead thereof.

An additional object of the invention is to provide a novel air conditioning unit in connection with the face mask, such unit being operative to cool the air before the same flows over the face of the person wearing the mask. The mask is therefore usable under hot climatic conditions.

A further object is to provide a face mask, of the type described, which includes a special adaptation of the shield for use when the foreign substance is a kind, such as paint spray, which tends to fog the shield.

A further object of the invention is to provide a simple, practical, and convenient face mask, and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

Fig. 1 is a side elevation of the face mask as in use.

Fig. 2 is a fragmentary sectional elevation of the mask.

Fig. 3 is a sectional elevation of a modified type of water tank, detached.

Fig. 4 is a perspective view of a modified form of face shield, detached.

Fig. 5 is a sectional elevation of the shield shown in Fig. 4.

Referring now more particularly to the characters of reference on the drawings, and particularly at present to Figs. 1 and 2, the face mask comprises a head band or cap 1 adapted to snugly engage about the head 2 of a person, whose face is indicated at 3.

At the front the head band 1 is fixed with a rigid, forwardly projecting visor 4 which includes an upstanding, central attachment flange 5 at its rear end. The purpose of this attachment flange will be described hereinafter.

A transparent shield 6 depends from the rigid visor 4, such shield being curved to fit about a

2

person's face 3 from side to side thereof and in substantial clearance relation. Additionally, the transparent shield 6 is of sufficient length to extend downward from the rigid visor 4 to a point at least below the chin of the wearer.

The transparent shield 6 may be of shatter-proof glass or of a transparent plastic, said shield being detachably connected to the under side of the rigid visor 4 by friction clamps 7.

At its rear side edges, and for substantially the full height thereof, the transparent shield 6 is fitted with resilient sealing or closure strips 6a, which bear against the adjacent sides of the wearer's face 3.

A semi-circular screen duct 8, matching the curvature of the transparent shield 6, is mounted within the latter at the top thereof; i. e. immediately below and suspended from the rigid visor 4. This screen duct 8 clears the forehead of the wearer, and within such duct it is fitted with a lower layer of wood shavings or excelsior 9, topped by a wick 10. The lower layer of excelsior or wood shavings permits of free air flow therethrough for the purpose which will be later described. Air is fed into said screen duct 8, for flow therethrough and downward discharge in the direction indicated by the arrows in Fig. 2, from a light-weight flexible hose 11 connected to one end of said screen duct 8 by a fitting 12.

From the fitting 12 the hose 11 extends rearwardly about the neck of the wearer and thence passes downwardly on his opposite side. A clip 13 secures the hose 11 to the garment of the mask wearer, so that the light weight of the hose does not bear on the mask, and permits of its ready movement with the wearer's head.

At the end opposite the fitting 12, the hose 11 includes one part 14 of a quick-detachable coupling, whose other part is on a hose or conduit (not shown) leading from an air filter and blower unit, which may be of any suitable type, and conveniently driven. For example, on a tractor this unit could be a pulley driven mechanism driven from the fan or generator belt.

Above the rigid visor 4, the mask includes a small water tank unit, indicated generally at 15, which has a tank 16 mounted in connection with the upstanding attachment flange 5 by means of a hook 17 on the tank engaging through vertically spaced eyes 18 on said flange. At the top the tank 16 is fitted with an air vent type filler cap 19, while at its lower end said tank includes a neck 20 projecting through the visor 4 into the screen duct 8 centrally of its ends. An extension of the wick 10 leads upwardly through the

neck 20 into the tank 16. When a quantity of water 21 is placed in the tank 16, it will bleed slowly through the wick 10 into the lower layer 9 of excelsior or wood shavings in said screen duct 8. It will thus be seen that with such lower layer 9 of loose material constantly maintained in a wet or damp condition, there will be substantial heat exchange as air from the hose 11 delivers into and passes through the screen duct 8, consequently cooling such air.

From the screen duct 8, the cooled air in substantial volume delivers downwardly between the wearer's face 3 and the transverse shield 6, passing out of the lower end of such shield. As this air flow is in substantial volume, foreign substance cannot gain access from the lower end of the shield to the wearer's face, and the wearer's face is protected effectively.

In other words, there is a comparatively low pressure but high volume supply of filtered and cooled air flow over the face, with unrestricted release of said air into the atmosphere at the lower end of the shield, to thereby prevent foreign substances, such as dust, gases, or fumes, from reaching the eyes, nose, and throat.

This passage of cooled air over the face of the mask wearer additionally prevents perspiration of the face and adds materially to the comfort of the mask wearer.

Although especially applicable to use by operators of agricultural implements, such as tractors or harvesters, the mask is equally useful in industrial work where dust fumes, gases, heat, or paint spray are hazardous and uncomfortable in the absence of protective means being employed.

The face mask is economical in construction, compact, and light weight; the design being such that it does not restrict the wearer in any way, either as to vision or movement, and—as explained—provides maximum safety and convenience.

In Fig. 3 there is illustrated a modified type of water tank unit. This tank unit, which is adapted to be mounted in the same manner as the unit 15, comprises a tank 22 having a filler cap 23 and a discharge neck 24 adapted to project through the rigid visor 4 into the screen duct 8. A valve rod or stem 25 leads upwardly through the discharge neck 24 in clearance relation, and is threaded, at its upper end, as at 26, through a nut 27 on the top of the tank. At its lower end and below the neck 24, but in cooperative relation to the latter, the valve rod 25 carries a valve head 29. It will be seen that upon rotation of the valve rod 25, with resultant axial shifting thereof by reason of the threads 26, the valve head 29 will open or close to regulate the quantity or volume of water delivered from the tank to the screen duct 8. Such rotation of the valve rod 25 is accomplished by means of a lever 30 on the upper end of said rod. By adjusting the lever 30, the wearer of the mask can control, to an effective extent, water flow from the tank 22 into the screen duct 8, as external conditions may require.

In Figs. 4 and 5, there is illustrated a modified type of shield for the mask, designed for use under those conditions where external foreign sub-

stances, such as paint spray, tend to fog said shield. Here, the shield 31 is formed with eye openings 32, the air flow escaping in part outwardly through said openings, as illustrated by the arrows in Fig. 5. Thus, the wearer has clear vision through the openings 32, but no foreign substance can pass inwardly through said openings by reason of the outflowing air. The openings 32 are struck out at the top, as at 33, and struck in at the bottom, as at 34, to assure against eddy currents which might otherwise draw foreign substance into the mask. Under certain working conditions it may be desirable to form the shield with the separate eye openings illustrated at 32.

From the foregoing description it will be readily seen that there has been produced such a device as substantially fulfills the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention, the following is claimed as new and useful, and upon which Letters Patent are desired:

1. In a face mask which includes a head gear and a curved frontal shield supported by the head gear: air distributing and conditioning means comprising a semi-circular screen duct mounted within the shield adjacent the upper edge thereof and substantially conforming to the curvature of the shield, the duct projecting inwardly of the shield to form a space between the shield and the face of the wearer of the mask, and means to admit air under pressure to the duct.

2. A device as in claim 1 including a mass of air pervious material filled into the duct.

3. A device as in claim 2 including a water reservoir mounted on the head gear, and a conduit opening communication between the reservoir and duct.

4. A device as in claim 3 including a valve in the conduit, and means outside of the reservoir for controlling the open and closed position of the valve.

5. A device as in claim 3 including a wick in the duct such wick having an extension projecting through the conduit into the reservoir.

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