Nov. 5, 1946. C. WRIGHT 2,410,593

RESPIRATORY SPRAY HOOD

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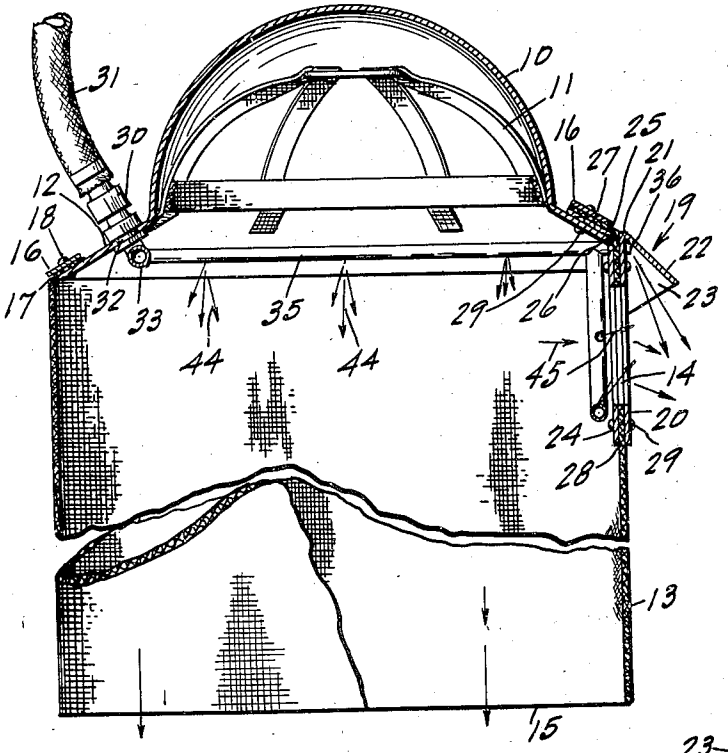


FIG. 1.

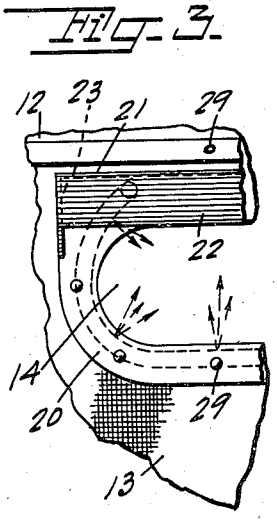


FIG. 3.

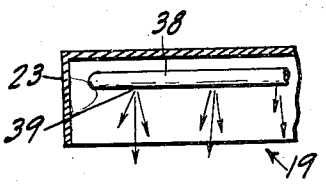


FIG. 4.

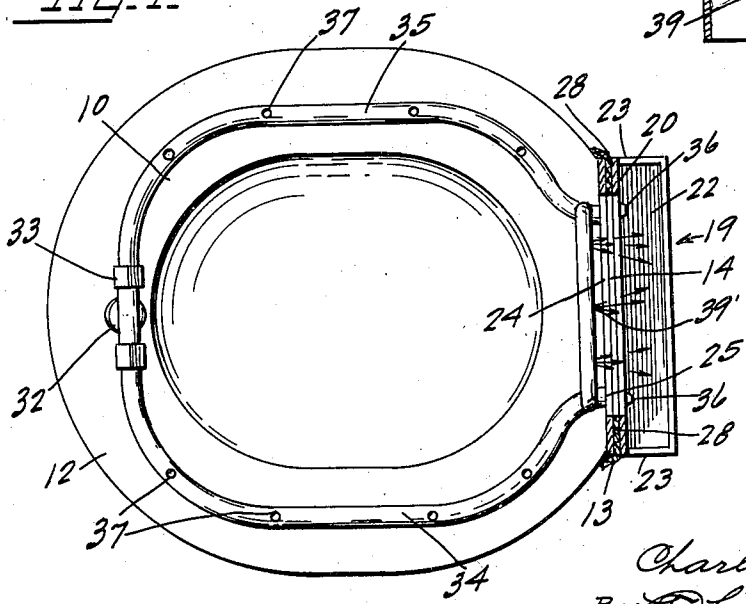


FIG. 2.

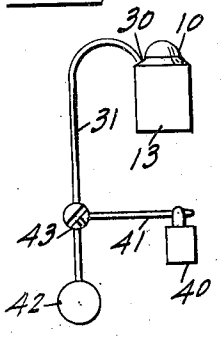


FIG. 5.

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RESPIRATORY SPRAY HOOD

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3 Claims. (Cl. 128—145)

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This invention, a spray hood, is an improvement over existent devices of this nature in that fresh air is constantly supplied to the wearer and simultaneously all spray is kept away from the eyes and respiratory organs.

This spray hood is applicable to any case where material is sprayed, such as paint, insecticides, and the like, and usable in any case where a source of air under pressure is available, or where there is considerable dust, fumes, or other deleterious substances in the surrounding air.

When spraying any liquid, the liquid is forced and atomized under the influence of air under pressure, evolving in a mist which is readily misdirected by normal air currents, particularly the most highly mistified outer portions of the spray pattern, and this is often blown directly into the face or about the person operating the spray.

With the conventional spray hood, the spray is prevented from reaching the face and neck of the wearer with the exception of the area about the eyes through the observation opening. Obviously the observation area in the hood must be left open because any transparent material used therein would almost immediately be covered with the material being sprayed so that nothing could be seen through it. The hood simultaneously creates a blow and suction action through the observation opening as the body or head is moved, thereby causing the spray to enter through the observation opening causing poor vision discomfort, and possibly even pain or injury or at least be uncomfortable, and providing spray to be breathed, with resultant impairment of health or comfort.

This invention provides means whereby all spray is kept away from the eyes and out of the hood, being directed away from the observation opening and even from entry about the lower end of the hood, so that a supply of pure air free from all spray material is available within the hood for breathing and for protection of the eyes.

The objects and advantages of the invention are as follows:

First, to provide a spray hood with means for maintaining a constant supply of pure air for breathing while the spray is in operation.

Second, to provide a spray hood which will protect the eyes of the person operating the spray against dissipated spray material.

Third, to provide a spray hood with means whereby no dissipated or misdirected spray material can enter the hood.

Fourth, to provide means as outlined which is

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operable by any source of air under pressure above atmospheric.

Fifth, to provide means as outlined which is simple and economical in construction and operation and which requires no care to maintain it in operating condition.

In describing the invention reference will be made to the accompanying drawing, in which:

Fig. 1 is a side sectional elevation through a spray hood with my invention incorporated.

Fig. 2 is an underside view of Fig. 1 showing my invention installed therein.

Fig. 3 is a fragmentary view of the observation passage in the front of the hood.

Fig. 4 is a fragmentary view showing a modification of the visor air-directing means.

Fig. 5 is a diagram showing the connection to the respirator and spray device.

The invention is applied to a conventional spray hood which includes a suitable head cover or helmet 10 provided with the conventional head cover bands 11, and having a brim 12 to which is attached by its upper end a sleeve 13 which completely encompasses the rim of the helmet and is closed except for the observation opening 14 and the opening at the bottom 15, and is conventionally secured to the brim by means of a metal band 16 laid over the end of the hood as indicated at 17 and bolted or riveted through the band, hood edge and brim as indicated at 18.

The invention includes a visor 19 which is formed at the upper end of the outer frame 20 of the observation opening, being bent over as indicated at 21 to form the visor 22 with downwardly and outwardly inclined front wall and being closed at both sides as indicated at 23.

The inner observation frame 24 extends upwardly and is formed about the cut-off edge 25 of the brim as indicated at 26 with the upper edge of the hood interposed between the bent-over portion 26 and the clamping strip 16 as indicated at 27, and the portion of the hood surrounding the observation opening is interposed between the outer and inner frames as indicated at 28, all being suitably secured together as by screws or rivets 29.

A connection 30 for a flexible hose 31 passes through the rearward portion of the brim as indicated at 32 and is coupled to a T 33 underneath the brim, and two tubes 34 and 35 extend from the respective ends of the T, around the underside of the brim, and through the frames into the visor as indicated at 36, and each tube is provided with a series of minute passages 37 and terminates in an open end in the visor.

In the modification shown in Fig. 4, the tubes, instead of terminating within the visor, are made continuous, being formed of a single length of tubing and being formed to U-shape with the base 38 of the U extending across from one side of the visor to the other then passing through the observation frames and being bent to conform to the contour of the brim, with the terminal ends connected to the T 33, and with the base of the U also having air escape passages as indicated at 39. By this method the available air can be proportioned between the inside of the hood and the visor.

The diagram Fig. 5 shows the connections for the respirator system, in which the respirator is connected through the tube 31, and the spraying device 40 is connected through a tube 41 to a source of air under pressure 42 and with the spray device and respiration system simultaneously and selectively controllable through a suitable valve 43, so that the air can be delivered to both, respirator and spray device simultaneously, or to either one alone.

In operation, the air delivered to the tube escapes through the passages 37 inside the hood as indicated at 44, filling the inside of the hood with a constant supply of fresh air and creating a slight pressure within the hood to keep the hood slightly extended and with a constant current of air passing out through the observation opening as indicated by the flow arrows 45 and simultaneously a constant supply of air is delivered into the visor and is deflected downwardly in front of the observation opening and is met by the air escaping through the observation opening, the two currents combining to force all spray away from the observation opening, so that none can enter to affect the eyes of the wearer or contaminate the air for breathing, therefore the eyes are fully protected and a full supply of uncontaminated air is available for breathing.

This spray hood is not only useful and beneficial, but is an actual and positive protection for the eyes and a safeguard of the health of anyone using it while spraying, whether paint, insecticide, or other material.

With conventional spray hoods, spray often enters the observation opening to come into direct contact with the eyes, and simultaneously pollutes the air within the hood so that the spray is actually breathed. This is especially serious where lead paints, arsenic, paris green and similar poisonous materials are sprayed, and this invention completely eliminates any possibility of injuring the eyes or affecting the health of the individual by preventing any of the spray from coming in contact or within breathing range.

I claim:

1. A spray hood comprising; a head cover having a flexible encompassing sleeve depending therefrom and an observation opening in said sleeve; air conduits within said sleeve and having outlets to deliver air within said sleeve, and a supply of air under pressure and control means therefor for said conduits, whereby air is deliverable to fill said hood and escape through said observation opening to reject entrance of extraneous air to said hood; a visor formed over the observation opening and having closed sides for restraining transverse circulation and having connections with said air conduits for delivery of air externally in front of the observation opening; said visor having a downwardly inclined front plate for directing air from said connections downwardly in front of the observation opening and thereby prevent entry of spray into the hood through the observation opening.

2. A spray hood comprising; a head cover having a brim; a sleeve encircling said brim and having its upper end attached thereto; an air connection mounted through said brim and a tube extending about each side of the brim and connected to said air connection; and a plurality of outlets formed through the walls of each tube to deliver air under pressure within the confines of said sleeve; said sleeve having an observation opening in the front thereof; a visor formed over said observation opening and having said tubes extending thereinto and having outlets for delivering air into said visor for deflection downwardly in front of said observation opening to sweep spray or mist away from said opening.

3. A spray hood comprising; a head cover having a brim; a sleeve encircling said brim and having its upper end attached thereto; an air connection mounted through said brim and a tube extending about each side of the brim and connected to said air connection; and a plurality of outlets formed through the walls of each tube to deliver air under pressure within the confines of said sleeve; said sleeve having an observation opening and a visor over said opening and said tubes having outlets opening into said visor for delivering air downwardly in front of said observation opening; a supply of air under pressure in communication with said air connection and with a spray device, and valve means for controlling said supply of air under pressure for delivery selectively or simultaneously to said tubes and to the spray device at will.

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