

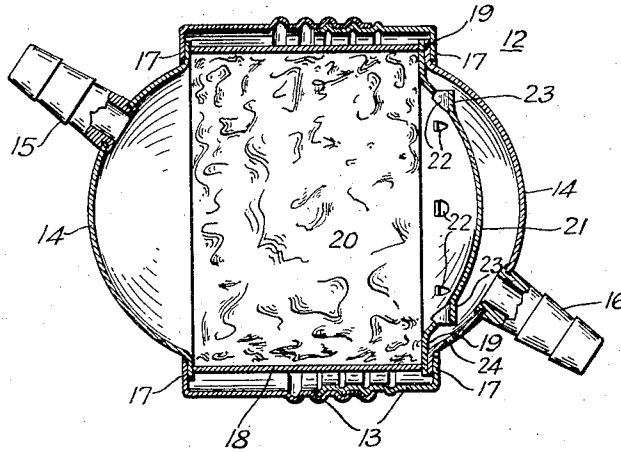
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CONDITIONER FOR AIR LINE RESPIRATORS

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CONDITIONER FOR AIR LINE
RESPIRATORS

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5 Claims. (Cl. 183—48)

This invention relates to protective equip-
ment and particularly to an improved air con-
ditioner particularly adapted for use with air
line respirators in which air is supplied under
5 pressure to the respirator.

It is desirable when air is supplied under pres-
sure to a worker's respirator to purify the air
and to remove as much as possible therefrom
traces of vapor or fluids, such as water and oil,
10 which enter the air line incidental to the use of
a compressor.

One object of the present invention is to pro-
vide an air conditioner for purifying the air
supplied under pressure to a respirator.

15 Another object of the invention is to make the
conditioner parts interchangeably usable for a
conditioner located anywhere in the pressure air
line.

The foregoing and other objects and advan-
tages of the invention will be apparent upon con-
sideration of the following detailed description
and appended claims when read in conjunction
with the accompanying drawing in which:

25 The drawing is a longitudinal sectional view
of an air conditioner assembled for intermediate
location in the air line.

The drawing indicates an air conditioner as-
sembled for use in a pressure air line interme-
diate the source of air pressure and a usual op-
posite-end respirator mask, and as shown the air
30 conditioner 12 comprises a casing consisting,
for example, of a pair of interengageable screw
caps 13 and a pair of substantially hemispherical
end members 14 provided with nipples 15 and 16
35 respectively disposed above and below the center
of the related end member and at an angular
inclination to the axis of the casing, and consti-
tuting an outlet and an inlet adapted to be con-
nected to the air line 11. The end walls of caps
40 13 are apertured so that the hemi-spherical por-
tions of the end members 14 project through the
ends of the screw caps and each end member is
provided with a peripheral flat flange 17 held
against the peripheral rim of the end wall of the
45 related cap by the end of a sleeve 18 constituting
an enclosure for any desirable type of filtering
material 20 such as suitably treated cotton, or by
the ends of a unitary filter cartridge of a suit-
able type.

50 Between the sleeve 18 or filter cartridge and
the end member 14 at the inlet end of the air
conditioner is a substantially hemispherical baf-
fle plate 21 having a peripheral flange 19 engaged
between the end of sleeve 18 and the flange 17 of
55 the end member for securing the baffle in spaced

place. The hemi-spherical surface of baffle plate
21 is opposed to the inlet nipple 16 so that air
forced under pressure into the air conditioner
impinges against the baffle plate.

The baffle plate is provided with a plurality of
6 circularly arranged apertures 22 adjacent the
peripheral edge of its hemi-spherical portion,
through which the air is diverted to pass to the
filter cartridge or filtering material 20 adjacent
10 the outer part thereof. As shown in the draw-
ing, portions 23 of the baffle plate adjacent the
apertures 22 are formed with hoods to extend
outwardly at an angle relatively to the hemi-
spherical surface of the plate so that they form
secondary baffles about which the air flows to
15 pass through the apertures instead of being
blown directly therethrough. Thus, the concen-
trated stream of air entering the air conditioner
12 under pressure is broken up by impinging
against baffle plate 21 and caused to flow sub-
20 stantially uniformly through the filtering ma-
terial 20 and is prevented from channelling a
passageway through the filtering material in
such manner as so to render the latter ineffective
to purify the air supplied to the respirator. At
25 its lower side the inlet member 14 is provided
with a small aperture 24 forming a drain for va-
pors and/or fluids, such as oil or water, condensed
out of the air stream by impingement on baf-
fle plate 21.

30 The conditioner 12, as shown, it will be noted
is assembled from complementary parts adapt-
able for assembly in other connection but for
similar use, and it will be further noted that
the members 14, as mounted, are capable of rota-
35 tion before the tight screwing together of the
complementary screw caps 13, so that the direc-
tion of projection of the nipples 15 and 16 may
be varied in accordance with the desired direction
of extension therefrom of their air line connec-
40 tions.

Although an illustrative embodiment of the
invention has been described in detail, there are
many changes and variations which may be made
without departing from the spirit of the inven-
45 tion and, therefore, it is desired to include all
such changes and variations within the scope of
the appended claims.

What we claim is:

1. An air conditioner for air line respirators 50
comprising a casing having an inlet and an out-
let; filtering material located in said casing be-
tween said inlet and outlet; an air line connected
to a source of air under pressure and to said in-
55 let; and a convex baffle plate disposed in said

casing opposite said inlet for preventing air forced into said casing under pressure from channelling said filter material, said baffle being provided with a plurality of apertures for the passage of air through said baffle to said filtering material; and a plurality of secondary baffles extending from said baffle plate adjacent the apertures therein.

2. An air conditioner for air line respirators, comprising a cartridge of filtering material, a cylindrical cartridge holding chamber formed by a pair of complementary end-apertured screw caps each having a flat peripheral end wall encircling its end aperture, a closure member for one cap end aperture clampingly held by the flat peripheral end wall of its respective screw cap and having an air outlet, a closure member for the other screw cap having an adjustably rotatable hemispherical portion projecting outwardly through said cap end aperture and having a peripheral flat rim portion adapted to be clampingly engaged by the flat peripheral end wall of its respective screw cap, and an air line connection inlet projecting outwardly from the hemi-spherical projecting portion of said closure member, and eccentrically and angularly disposed relatively to the axis of said chamber.

3. An air conditioner for air line respirators, comprising a cylindrical chamber formed by a pair of complementary end-apertured screw caps each having a flat peripheral end wall encircling its end aperture, a closure member for one cap end aperture clampingly held by the flat peripheral end wall of its respective screw cap and having an air outlet, a closure member for the other screw cap having a hemi-spherical portion projecting outwardly through said cap end aperture and having a peripheral flat rim portion clampingly engageable with the flat peripheral end wall of its respective screw cap, a baffle plate having a hemi-spherical portion provided with hooded air apertures and spacedly projected into the hemi-spherical portion of said end closure and a flat rim portion adapted to be clampingly engaged against the inner surface of the peripheral rim portion of said closure by engagement against the outer surface of the latter of the peripheral end wall of its respective screw cap,

and an air line connection inlet in the hemispherical projecting portion of said closure member communicating with the space between said baffle and closure projections.

4. An air line conditioner for air line respirators, comprising a cylindrical chamber formed by a pair of complementary end-apertured screw caps each having a flat peripheral end wall encircling its end aperture, similar closure members for said cap end apertures each having a hemispherical portion projecting through its respective cap end aperture and having a flat peripheral rim clampingly engageable with said peripheral cap end wall and encircling said projecting closure portion, similar air line connections in the projecting portions of the respective closures each disposed at an angular inclination relative to the axis of said chamber and forming respectively an air inlet and an air outlet to the latter, and a baffle interposed between said chamber and the end closure member having the air line inlet connection, said baffle having a peripheral flat rim and adjacent hooded air apertures, and said baffle rim and its respective closure rim being jointly secured by the peripheral end wall of its respective screw cap.

5. An air line conditioner for air line respirators, comprising a cartridge of filtering material, a cylindrical cartridge holding chamber formed by a pair of complementary end-apertured screw caps each having a flat peripheral end wall encircling its end aperture, similar closure members for said cap end apertures each having an adjustably rotatable hemi-spherical portion projecting outwardly through its respective cap end aperture and having a flat peripheral rim clampingly engageable with said peripheral cap end wall and encircling said projecting closure portion, and similar air line connections extending outwardly from the projecting portions of their respective closures each eccentrically and angularly disposed relative to the axis of said chamber and forming respectively an air inlet and an air outlet to the latter, said inlet and outlet connections being fixedly held in set position by the clamping action of said screw caps.

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