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CARTRIDGE FOR BREATHING APPARATUS

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Fig. 1.

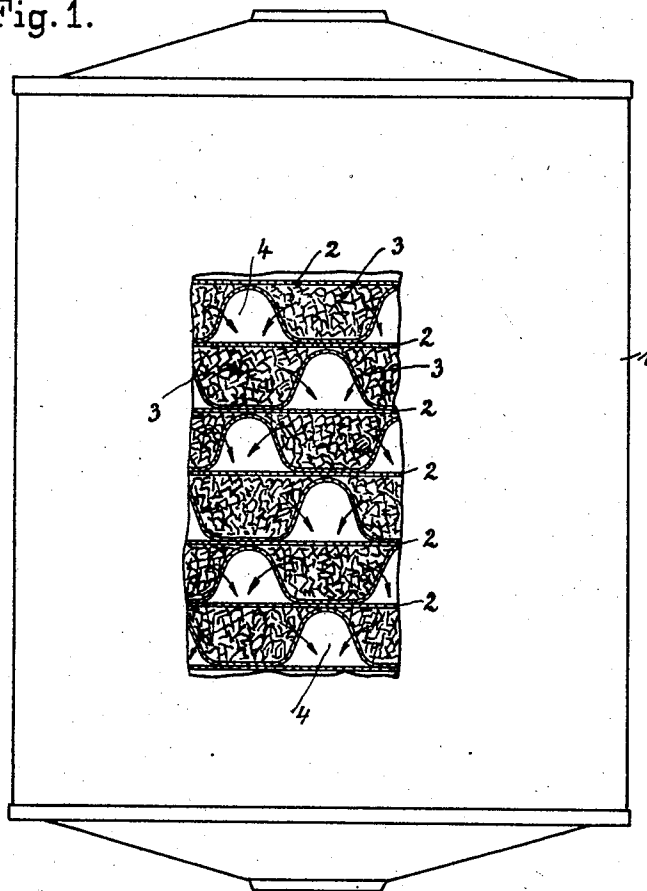
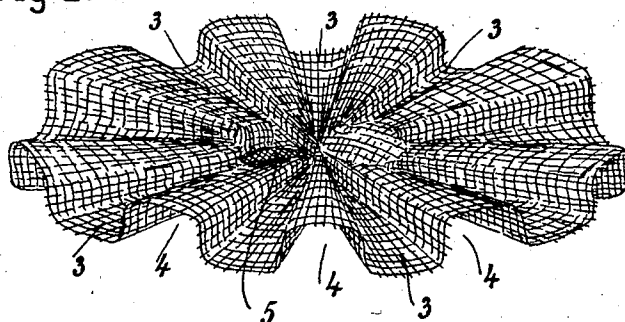


Fig. 2.



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CARTRIDGE FOR BREATHING APPARATUS

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The present invention relates to breathing apparatus, particularly to a respiratory cartridge therefor comprising a plurality of cells and serving for the purifying of gases unsuitable for breathing.

5 The novelty resides therein that within every cell, pockets to be filled with chemicals or absorbing substances alternate with air spaces, the pockets in the consecutive cells being situated either in alignment or in staggered relation. The result is that the contaminated air passes through and also around the chemicals and is forced to pass over a very long path in which the contaminated air is subjected to an action serving to deprive it of those constituents which are to be removed.

Reference is had to the accompanying drawing in which by way of example cartridges are shown constructed according to the invention.

Fig. 1 is an elevation of one mode of construction of the cartridge one part of the wall being removed for showing the inside.

25 Fig. 2 is a perspective view of a wire net to be arranged within the cells of the cartridge shown in Fig. 1, and having radially disposed chemical pockets.

In the construction shown in the Figs. 1 and 2 the cartridge comprises a casing or vessel 1 having a circular cross section, within which a series of more or less flat foraminated sheets formed by perforated pervious sheets 2 are arranged parallel at a certain distance from one another to form cells. The foraminated sheets may be preferably made of wire netting. Within every cell a pervious sheet also preferably made of wire netting, as shown in Fig. 2, is placed, which at the same time serves as a distance piece for the flat sheets 2. This wire net or sheet is radially corrugated, the downwardly projecting corrugations forming pockets 3 for the reception of chemicals, and the upwardly projecting corrugations which open downwardly forming air spaces 4. Thus every flat wire net plate 2 forms a cover for the chemical pockets 3 of the next lower wire net, and a bottom for the air spaces 4 of the next upper wire net.

The chemical pockets 3 will be filled from above with chemical grains or other absorbing material thus forming radially extending piles of chemicals and intermediate radial air spaces or channels. The divers plates in the construction shown in Figs. 1 and 2 are so placed upon one another, that the air spaces of every plate are placed over the chemical pockets 3 of the next lower plate. When the cartridge is thus put together from one end to the other, the current of air passing from the inlet of the casing to the outlet thereof must meet every chemical pile and partly penetrate it and partly pass to both sides as is indicated by the arrows in Fig. 1, whereupon the air will again meet another chemical pile below. This operation is repeated in every cell of the cartridge, and the chemicals will be washed to their complete extent by the penetrating air.

The radial pockets of every frame may communicate with small round or oval recesses 5 in or near the centre. These recesses 5 of adjacent sheets may be staggered with respect to one another by being alternately pressed out from the centre towards one and the other side so as to compel the current of air to pass through the chemical material even at these places.

In oval or non-circular cartridges the corrugations of the sheets are preferably symmetrically disposed with respect to one of the geometrical axes of the geometrical figure represented by the perimeter of the sheet. If this condition is complied with the corrugated sheets of any cartridge may all be made alike, and by alternately reversing the corrugated sheets within the cells the desired staggering will be secured.

I claim:

1. A gas purifying cartridge comprising a casing having a gas inlet and a gas outlet opening, a plurality of foraminated sheets each provided with a plurality of corrugations radiating from a central portion thereof, said central portion of each of said sheets having a pressed out portion formed therein to present a substantially centrally located recess when in one horizontal position and to present a substantially centrally

located elevated portion when in inverted horizontal position, said corrugated sheets being superposed and mounted within said casing transversely to the flow of the gas from the inlet to the outlet opening with the ridges formed by the corrugations in each of said sheets in vertical alignment with the recesses formed by the corrugations of its immediately adjacent sheets, gas purifying material in the recesses of each of the sheets, and flat sheets of foraminated material between each pair of the aforesaid sheets provided with the corrugations to inclose the gas purifying material within said recesses.

2. A gas purifying cartridge comprising a casing having a gas inlet and a gas outlet opening, a plurality of foraminated sheets each provided with a substantially centrally located depressed portion and an adjacent raised portion also located substantially centrally and with radially disposed corrugations radiating from said substantially centrally located raised and depressed portions to the edges of said sheet, gas purifying material in the recess formed by the substantially centrally located depressed portion and in the recesses formed by the corrugations of each sheet, and flat sheets of foraminated material covering each of said corrugated sheets to inclose the gas purifying material within the aforementioned recesses, said corrugated sheets being superposed in alternative inverted relation with respect to each other and mounted within said casing transversely to the flow of the gas from the inlet to the outlet opening, the ridges formed by the corrugations in each of said sheets being in vertical alignment with the recesses formed by the corrugations of its immediately adjacent sheets and the said substantially centrally located depressed portion of each of said sheets being in vertical alignment with the substantially centrally located raised portions of its immediately adjacent sheets, whereby the casing is divided into a plurality of gas purifying material filled compartments in staggered relation, each of said filled compartments being surrounded by empty compartments.

In testimony whereof I have signed my name to this specification.

ALEXANDER BERNHARD DRÄGER.

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