This invention relates to breathing apparatus, and more particularly to a protective cover for such apparatus or parts thereof. A protective cover or shield for breathing apparatus or parts thereof has the dual function of not only protecting the apparatus covered but also ventilating and cooling such apparatus by permitting atmospheric or external air to pass through the said cover and to flow around said apparatus.

It has been proposed to use protective covers or shields which are either perforated or punched, i.e., provided with slits or openings as in grids or lattice-work. The disadvantage of these covers is that they permit cooling and ventilation of the apparatus at the expense of the protective effect against external injuries. This loss of protective effect means that parts of the apparatus are exposed to external agents. For instance, in the case of a nail protruding from timber work or a sharp point of a stone projecting from a mine wall, it is possible that the sharp end of either the nail or the stone may pass through one of the apertures of the protective cover, and injure or puncture parts of the apparatus adjacent to said cover.

The object of this invention is not only to eliminate the disadvantages of known types of protective covers, but also to provide advantages which will be pointed out hereinafter.

Generally speaking, the improved protective cover or shield embodying my invention provides an arrangement of ventilating or cooling apertures such that a sharp pointed object cannot penetrate into the interior of the apparatus. This protection is effected by disposing the metal or material forming the said cover so that the cooling apertures are transverse to said cover, and that a substantially blank wall protects the said apparatus or parts thereof. Consequently, sharp objects merely strike this blank protecting wall without penetrating the apertures and causing any injury to the internal apparatus.

The invention will be best understood from the following description of several illustrative examples thereof taken in conjunction with the accompanying drawings forming a part of this specification, and, in which:

Fig. 1 shows a rear elevation of an embodiment of this invention in the form of a hinged cover adapted to protect the cartridge or filter of a breathing apparatus.

Fig. 2 is a sectional view taken on the line 2-2 of Fig. 1;

Fig. 3 is an enlarged view of a part of the cover shown in Fig. 1;

Fig. 4 shows a vertical section taken on line 4-4 of Fig. 3;

Fig. 5 shows a horizontal section taken on line 5-5 of Fig. 3;

Fig. 6 is a view similar to that of Fig. 3 showing a modified form;

Fig. 7 is a vertical section taken on the line 7-7 of Fig. 6;

Fig. 8 is a horizontal section taken on the line 8-8 of Fig. 6.

Similar characters of reference designate similar parts in each of the several views.

The reference character a, as shown in Figs. 1 and 2, designates a hinged-cover which is made from a piece of suitable sheet material, such as sheet metal, and is adapted to be fastened to a breathing apparatus to protect the cartridge filter. The main body a of said cover is provided with a pair of hinges or fastening means H and a plurality of parallel cuts a' arranged in rows a and a'. In the drawing seven of these rows are shown, but obviously any suitable number of rows with any desirable distance therebetween may be employed depending upon the particular conditions. The alternate portions of metal between adjacent cuts are bulged into projections a" which form, with the rest of the sheet, apertures or openings a" transverse to said cover. These projections may have any desirable shape such as an arched section or a rectangular section, the arched section being shown in Figure 4.

The strip or portion of metal a" between said projections remains in the plane of the metal sheet a. In the illustration in Fig. 1, the projections in alternate rows are staggered, i.e., the projections a" in rows a" are in line with strips a" in rows a", and similarly the projections a" in rows a" are in line with strips a" in rows a".

If a sharp object strikes the aforesaid protective cover, the point of said object striking either the projections a" or the rest of the metal cover will be prevented from penetrating to the apparatus and injuring the part to be protected. It is apparent that my improved protective cover provides a plurality of transverse apertures which serve...
as cooling or ventilating openings, and a substantially blank wall which protects the parts covered thereby. In case it is desired to increase the ventilating or cooling effect, the transverse openings may be enlarged by further vaulting or arching the edges \( a^0 \) of the projections \( a^2 \).

In the form shown in Fig. 6, the transverse apertures have been made still greater by bulging the intermediate strips \( a^3 \) inwardly to form projections \( a^4 \). The transverse apertures \( a^5 \) formed by the said projections \( a^2 \) and \( a^3 \) may be clearly seen in Fig. 7. By this arrangement, the area of the transverse apertures is practically doubled, and the ventilation afforded thereby greatly improved. It is to be noted that this type of cover provides increased ventilation to the covered part of the apparatus without diminishing or detracting from the protective effect to said apparatus.

While I have illustrated and described preferred forms of construction for carrying my invention into effect, it is understood that variations in embodiments may be made without departing from the scope and spirit of the invention.

I claim:

A protective shield for a part of a breathing apparatus, comprising a metallic sheet forming a hinged cover adapted to fit over said part and having a plurality of parallel slits arranged in pairs, the portion of metal between each pair of slits being bulged outwardly to form ventilating apertures in planes perpendicular to the plane of the sheet.

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