July 12, 1938. F. C. MILLARD 2,123,196

GAS MASK EQUIPMENT

Filed Nov. 23, 1936

Fig. 1.

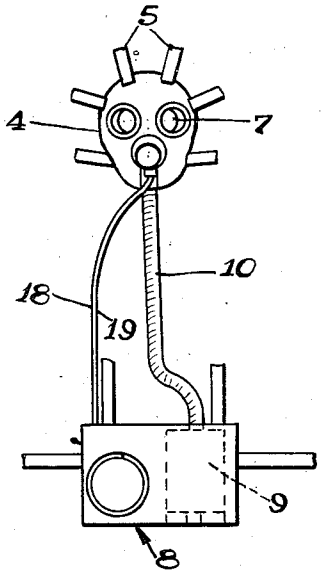


Fig. 2.

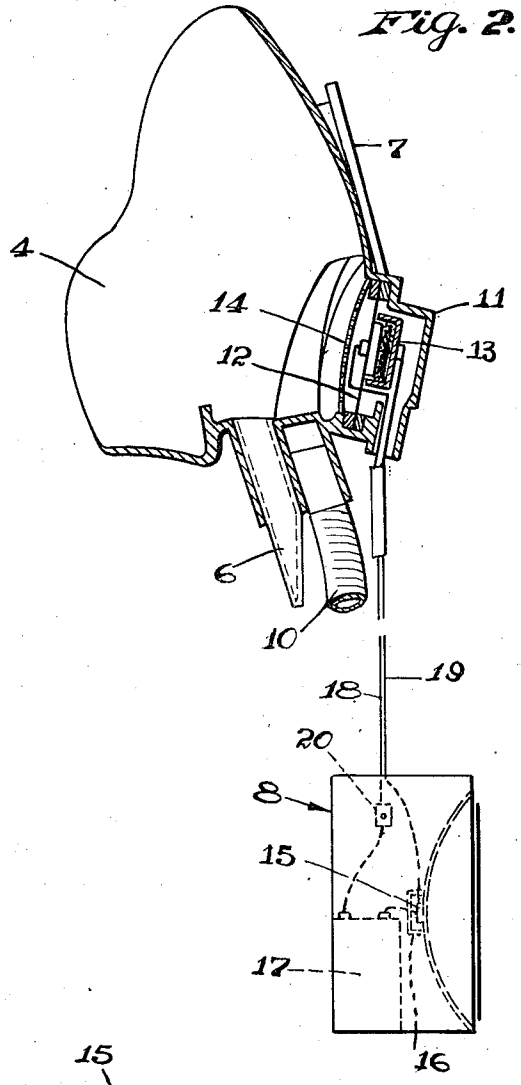
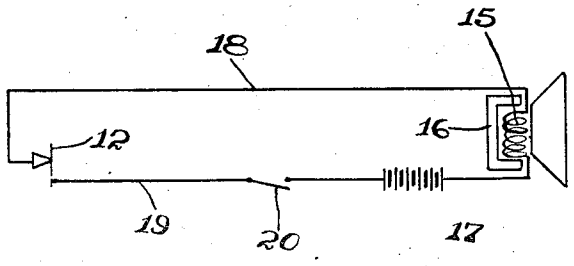


Fig. 3.



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GAS MASK EQUIPMENT

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3 Claims. (Cl. 128—141)

The invention relates to gas masks, and particularly to sound transmitting means permitting the voice of the wearer of a mask to be transmitted without any loss of volume or clearness. Heretofore attempts to secure this result have involved the use of diaphragms seated in the front walls of the masks whose vibrations as produced by the voice of the wearer of the mask were communicated to the air outside the mask. While these devices give some assistance in sound transmission, the volume is cut down to a relatively small fraction of the sound produced in the mask, and the communication of sound by one wearing the mask is very limited in range, and involves great effort on the part of the speaker. The object of the present invention is to provide sound transmission equipment which adds only a negligible amount of weight to the mask itself; which permits of the transmission of the voice of the wearer of the mask without any decrease in volume or clearness; and which, in fact, gives the voice a greater volume and range than if no mask were used. Briefly stated, this is accomplished by the use of a telephone transmitter in the wall of the mask to which a dynamic speaker is connected, such speaker being suitably supported on the person of the wearer of the mask. Such speaker, and the necessary battery, are preferably mounted in the canister carrier which is attached to a belt or other suitable harness. When used in this way, the additional weight involved is hardly noticeable, and the equipment may be applied and worn without any greater inconvenience than standard equipment. The equipment is particularly designed for the use of officers in command of bodies of troops to whom orders must be issued from time to time, and for the use of industrial workers who must communicate back and forth in performing duties which require gas mask protection. One embodiment of the invention is shown in the accompanying drawing, wherein:

Figure 1 is a front view of the mask and equipment. Fig. 2 is a partial side elevation and partial section on an enlarged scale. And Fig. 3 is a wiring diagram.

Referring to the drawing, 4 is the body of the mask, preferably of molded rubber and provided with the usual holding straps 5, the flutter valve 6 and eye pieces 7; 8 is a box or carrier for the canister 9; and 10 is the hose connection leading from the cannister to the cavity of the mask.

Formed integrally with the mask, is a casing 11 which carries the telephone transmitter. The transmitter is of the carbon granule type and includes the diaphragm 12 opposite the mouth of the wearer of the mask and the box 13 carrying the granular carbon, said box being suitably supported in opposition to the diaphragm. A perforated shield 14 lies in front of the diaphragm. Mounted in the box 8 at one side of the canister is a dynamic speaker comprising the coil 15 and magnet bar 16. Also mounted in the carrier is a suitable battery 17 for supplying current to the circuit, such circuit being shown in Fig. 3, wherein 18 and 19 are the connecting wires and 20 is a suitable switch. The wires are preferably arranged in a single cable and connected to the diaphragm and box, so that the granular carbon in the box 13 forms a part of the circuit. The construction and operation of a carbon granule transmitter and dynamic speaker are well known in the electrical art, so that no detailed description is required. An equipment of this type with properly selected transmitting and speaker units will give a sound transmission of such volume that the voice of the wearer of the mask will be somewhat amplified. As a result, the sound transmission is helped rather than hindered by the use of the equipment. The amplification of the sound is due in part to the use of the carbon granule transmitter, and in part to the speaker unit, the volume of sound being subject to increase upon an increase in the voltage of the battery employed and the diameter of the diaphragm of the speaker.

What I claim is:

1. In combination with a gas mask, a telephone transmitter with its diaphragm seated in the wall thereof to receive the sound waves from the mouth of the wearer, an electro-dynamic loud speaker and battery in proximity to the mask and portable therewith adapted to be carried by the wearer, and wiring connections between the transmitter, battery and dynamic speaker.

2. In combination with a gas mask, a telephone transmitter of the carbon granule type carried by the mask and including a diaphragm mounted in the wall thereof in opposition to the mouth of the wearer of the mask, an electro-dynamic loud speaker and battery in proximity to the mask and portable therewith adapted to be carried by the wearer, and wiring connections between the transmitter, battery and dynamic speaker.

3. In combination with a gas mask, a canister, a carrier therefor and an inlet connection for air leading through the canister, a telephone transmitter with its diaphragm seated in the wall of the mask, a dynamic speaker and battery supported by the carrier, and wiring connections between the transmitter battery and dynamic speaker.

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