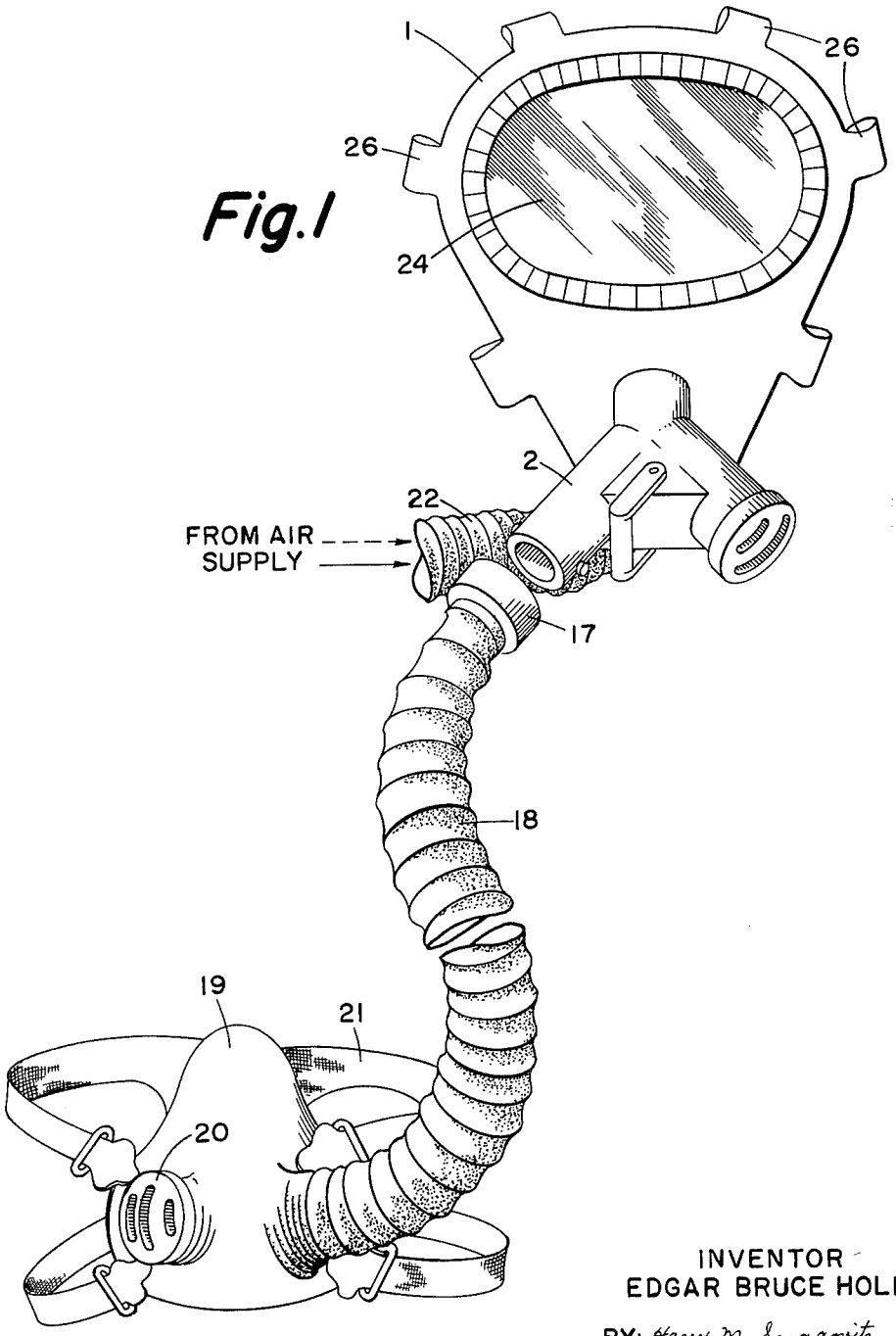
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AID BREATHING SYSTEM

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Fig. 1



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Fig. 3

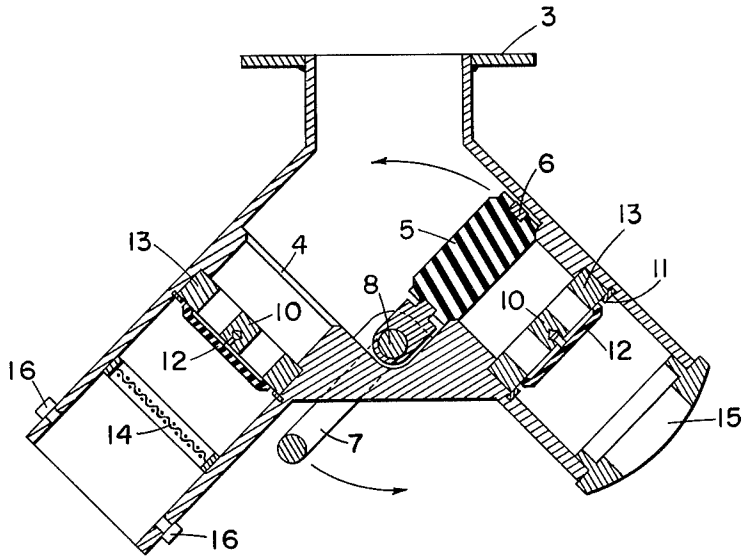
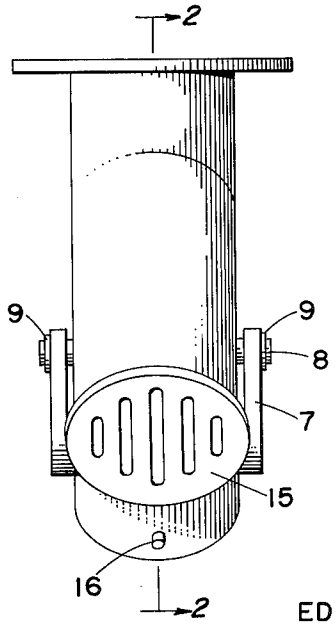


Fig. 2



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AID BREATHING SYSTEM

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3 Claims. (Cl. 128—142)

The invention described herein covers the description of improvements and additions to equipment now used by personnel for the purpose of breathing normally in a low oxygen content atmosphere such as gas filled or smoke filled areas, using a self contained compressed air supply with a demand regulator.

The object of this invention is to provide breathable air to more than one party from the same air supply utilizing a tank of compressed air and a demand regulator as carried by the user.

The invention may be better understood when considered in the light of the attached drawings in which:

FIGURE 1 is a perspective view of a preferred embodiment of the invention with flow direction arrows according to the modus operandi to which the system is committed. Arrows drawn with solid lines represent air flow when the system is in the aid mode whereas, arrows drawn with broken lines represent air flow when the system is in the single or normal use mode.

FIGURE 2 is a right side view of the Y.

FIGURE 3 is a cross sectional view 2—2 taken from FIGURE 2 showing internal components and motion arrows denoting travel of the stopper valve and its associated actuating lever.

The face mask 1 is of the usual flexible material for fitting the users face including a sight glass 24 and straps 26. The Y or breathing selector 2 is permanently attached to the face mask 1 during manufacture by molding a flange 3 or the like into the mask 1 for retaining purposes or by attaching in any known manner.

The Y 2 contains two chamfered valve seats 4 one in each branch of the Y 2. The chamfered valve seats 4 match the angles on both sides of the flexible stopper valve 5 and when any two, namely one valve seat 4 and the corresponding angle on the stopper valve 5 are in contact, that branch of the Y 2 to which the valve seat 4 belongs, is rendered inoperative. The flexible stopper valve 5 is retained by the flip ring 6 which is coupled to the external actuating lever 7 by a splined or keyed pin 8. The pin 8 is retained axially by two snap rings 9 located at each of its ends.

Each branch of the Y 2 contains one exhaust assembly 10 which is retained in its respective branch by a snap ring 11. Snap rings 11 seat into grooves and retain the assemblies between the snap ring 11 and a machined shoulder of the branch.

The exhaust valve membrane 12 is of the usual type and is assembled to the vaned membrane socket 13 by inserting the projection on the membrane 12 into the recess provided in the hub of the vaned membrane socket 13.

Each branch of the Y 2 contains protection from puncture or damage of the exhaust membrane 12. The aid branch contains a protective screen 14 as the membrane protector, whereas the normal use branch membrane is protected by a vented snap-in closure plug 15.

Two pins or hose connecting means 16 are affixed to the lower end of the branch to facilitate acceptance and locking of the cam turn lock seal connector 17. Any suitable quick connect-disconnect device known in the art may be used for this application.

The usual flexible hose 18 of suitable length, completes the attachment and air supply means between the face mask 1 and the aid mask 19 which can either be nose and mouth cover only, as shown, or may be a full face mask with eye protection. The aid mask 19 carries its own membrane exhaust valve 20 and straps 21 for breath exhaust and attachment respectively.

A suitable tank air supply and demand regulator not shown, is carried by party one and is well known in the art of fire fighting. The tank and regulator combination is coupled to the face mask of party one by the air delivery hose from the supply. The improvement to this system begins by the showing of the partial hose and the words, "From air supply," of FIGURE 1. Air is delivered as shown in FIGURE 1 through flexible hose 22 and enters the face mask 1. Party one being the only user of the system, has positioned the stopper valve 5 by functioning the actuating lever 7 and is exhausting thru the right hand branch of the Y 2. Upon finding or being approached by someone in need of air of a higher oxygen content, the cam turn lock seal connector or any other suitable quick connect-disconnect means, is attached and is retained by pins 16 of the left hand or aid branch of the Y 2.

The aid mask 19 is placed on the second party and held in place by straps 21. The external actuating lever 7 is functioned, closing the right hand branch of the primary mask. Party one can now open the valve on the tank air supply and deliver free flow compressed air to himself and party two or both may breathe normally utilizing the demand regulator without regard for synchronization of breathing.

I claim:

1. A breathing apparatus for use in low oxygen atmosphere and the like comprising a first face mask having transparent viewing means, means for attaching said first face mask to a first person, a compressed air supply, means for controlling a supply of air from said compressed air supply, means for supplying said compressed air supply to said first face mask, a breathing selector attached to said first face mask, said breathing selector having a plurality of branches, each of said branches having means for permitting only the exhaust of exhaled air, said breathing selector having an adjustable valving means for determining through which branch the air will flow, one of said branches having a plurality of hose connecting means thereon, a second face mask, means for attaching said second face mask to a second person, a hose on said second face mask removably connected to one of said hose connecting means of said first face mask, whereby said valving means may be manipulated to allow the passage of air to said second face mask.

2. A breathing apparatus for use in low oxygen atmosphere and the like comprising a first face mask having a sight glass, straps for attaching said first face mask to a first person, a compressed air supply, a flexible hose for supplying said compressed air to said first face mask, a Y shaped breathing selector attached to said first face mask, said breathing selector having two branches, each branch having an exhaust assembly for permitting only the exhaust of exhaled air, said breathing selector having an adjustable flexible stopper valve for determining through which branch the air will flow, one of said branches having a pair of hose connectors attached at the end thereof, a second face mask, means for attaching said second face mask to a second person, a hose on said second face mask removably connected to the branch having said hose connectors attached at the end thereof, whereby said valve may be manipulated to allow the passage of air to said second face mask.

3. A device of the type described in claim 2 wherein said breathing selector includes a keyed pin and an external actuating lever and said flexible stopper valve is secured to the breathing selector by said keyed pin, said keyed pin being connected to said external actuating lever for easy manipulation of said flexible stopper valve.

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