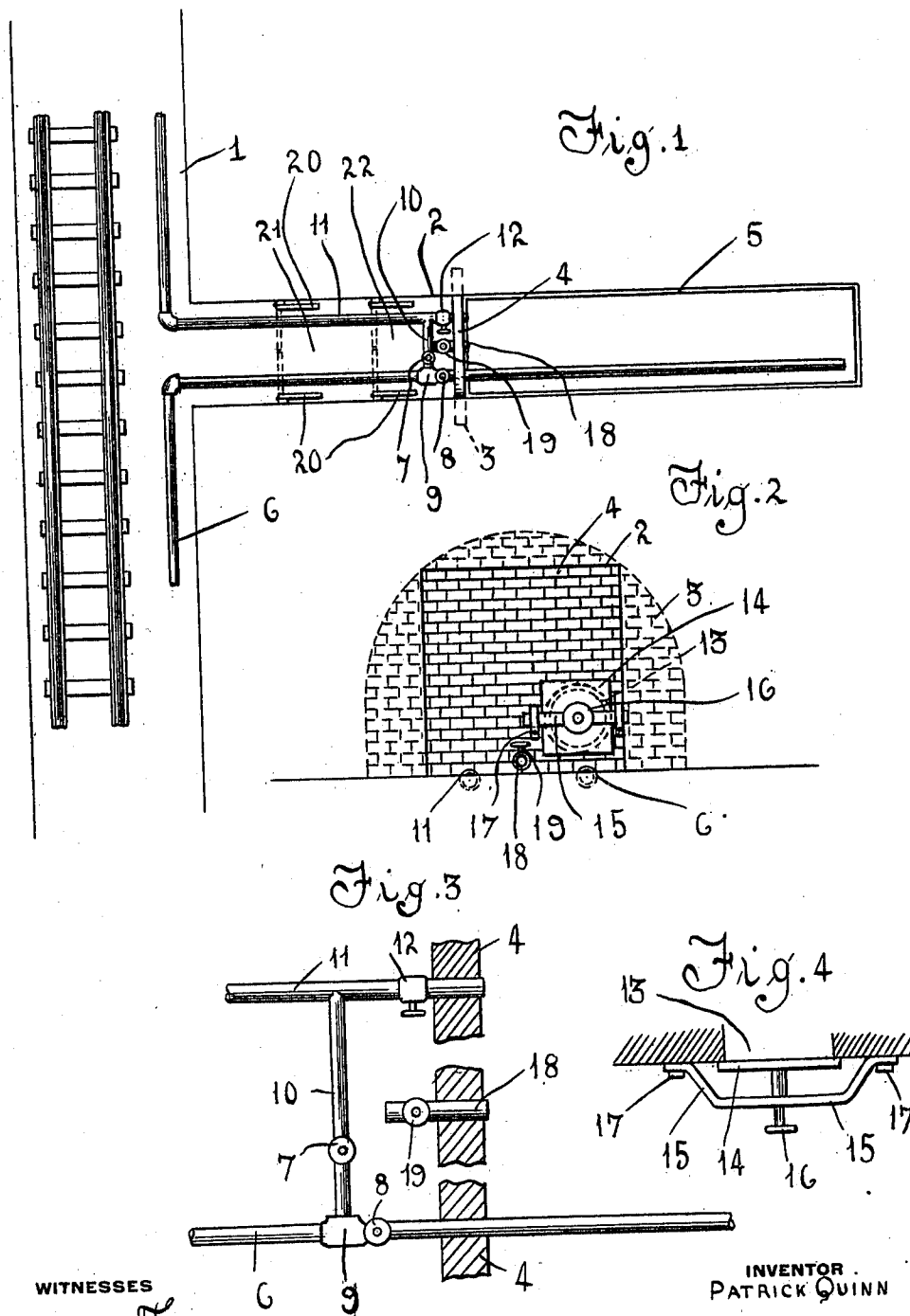


P. QUINN.
AIR RESERVOIR FOR MINES.
APPLICATION FILED JULY 26, 1910.

978,642.

Patented Dec. 13, 1910.



WITNESSES
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UNITED STATES PATENT OFFICE.

PATRICK QUINN, OF FORBES ROAD, PENNSYLVANIA.

AIR-RESERVOIR FOR MINES.

978,642.

Specification of Letters Patent.

Patented Dec. 13, 1910.

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To all whom it may concern:

Be it known that I, PATRICK QUINN, a citizen of the United States of America, residing at Forbes Road, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Air-Reservoirs for Mines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to an air reservoir for mines, and the primary object of the invention is to utilize the old rooms of a mine for storing air, safety appliances, provisions, and other matter that could be used by entombed miners until rescued.

Another object of the invention is the provision of novel means whereby air can be stored in unused portions of a mine, the air being stored under pressure whereby it can be used for operating drills and other machinery within a mine.

A further object of the invention is to provide a compartment within a mine adapted to be used for the safety of miners and the occupants of a mine when explosions or fires occur, the compartment being easily retained in an operative condition for the reception of miners without occupying valuable space within a mine.

With the above and such other objects in view as may hereinafter appear, the invention consists of the novel construction to be hereinafter specifically described and then claimed.

Reference will now be had to the drawing forming a part of this specification, wherein:

Figure 1 is a plan of a portion of a mine provided with an air reservoir in accordance with this invention. Fig. 2 is a front elevation of a bulk-head or wall forming a part of the air reservoir. Fig. 3 is an enlarged horizontal sectional view of a portion of the same, and Fig. 4 is a similar view showing a closure for a man-hole in the wall.

In the drawings 1 denotes a mine entry having a room 2 communicating therewith. This room intermediate the ends thereof has the roof and side walls cut away, as at 3, and erected transversely of the room is a bulk-head, wall, or partition 4 extending into the cut-away portions 3 of the walls and roof of the room. The walls, roof, floor, and inner side of the bulk-head 4 are pro-

vided with a lining or coating of impervious or water and air proof material 5, the inclosure or compartment thus formed constituting a reservoir.

Extending into the entry 1, the room 2, through the bulk head 4, into the reservoir is an air supply pipe 6 provided with a valve 8 adjacent to the bulkhead 4 and upon the outer side thereof. The pipe 6 has a tee 9 connected by a cross pipe 10 to an outlet pipe 11 extending through the bulk-head 4, out of the room 2, into the entry 1. The pipe 6 extends into the reservoir to a point in proximity to the inner end thereof and is also positioned at the bottom of the reservoir. The pipe 11 adjacent to the bulk-head 4 is provided with a valve 12 and the pipe 10 with a valve 7.

The bulk-head 4 has a man-hole 13 normally closed by a lid 14 held in position by a clamp 15 and a set screw 16, the clamp 15 having the ends thereof detachably mounted in brackets 17, carried by the outer side of the bulk-head 4. The bulk-head 4 adjacent to the floor of the reservoir has a drain pipe 18 having the outer end thereof provided with a valve 19.

The side walls of the room 2 are provided with two sets of hinged doors 20 that can be closed to provide compartments 21 and 22, and in order that the doors can be closed it is preferable to locate the pipes 6 and 11 in the floor of the room 2.

Air is pumped into the reservoir from the exterior of the mine and this air can be utilized for operating purposes within the mine by opening the valve 12 and allowing the same to flow through the pipe 11. After the tank or reservoir has been filled, the valves 8 and 12 can be closed, the valve 7 opened and the ordinary supply of air utilized for operating purposes. In case of an accident, such as an explosion or a fire, the miners can immediately enter the room 2 and close the doors 20, it being preferable to make these doors of fire-proof material and as near air-tight as possible when closed. The air stored in the reservoir can then be utilized by the miners to prevent suffocation by opening the valve 19, and it is in the compartments 21 and 22 that suitable supplies, safety appliances, as helmets, can be stored to prevent starvation and the loss of life.

The man-hole 13 permits the reservoir to be thoroughly cleansed and maintained in a

sanitary condition. The valve 19 permits of any condensate within the tank or reservoir being removed.

The air reservoir has been particularly designed for mines and quarries where air-operated machines are employed for various purposes. In providing these reservoirs it is possible to operate compressors to store air during the night, and then utilize the air during the day for operating purposes. This is simply cited as an instance of the invention's adaptability for mining purposes.

What I claim is:

1. In combination in a mine, a room having the side walls and roof cut-away intermediate their ends to provide a pocket, a transversely extending bulk head arranged within said room intermediate the ends thereof and extending in said pocket and forming in connection with the floor, side walls and roof of the room an inclosed space constituting a reservoir, an air and water proof lining mounted upon the floor and arranged against the inner side of the bulk head and further positioned against the walls and the roof of the room, said bulk head provided with a man hole, means for normally closing said man hole, an air supply pipe extending into said reservoir to near the inner end thereof and positioned at the bottom of said reservoir, an air discharge pipe communicating with said reservoir at the front thereof, a valve located upon said pipes exteriorly of the bulk head, a valve pipe connection between said air discharge

pipe and said air supply pipe, a drain pipe for the reservoir mounted in said bulk head at the bottom thereof.

2. In combination in a mine, a room having the side walls and roof cut-away intermediate their ends to provide a pocket, a transversely-extending bulk head arranged within said room intermediate the ends thereof and extending in said pocket and forming in connection with the floor, side walls and roof of the room an inclosed space constituting a reservoir, an air and water proof lining mounted upon the floor and arranged against the inner side of the bulk head and further positioned against the walls and the roof of the room, said bulk head provided with a man hole, means for normally closing said man hole, an air supply pipe extending into said reservoir, a discharge pipe communicating with the reservoir at the front thereof, a valve located in each of said pipes exteriorly of the bulk head, a drain pipe for the reservoir located in the lower end of the bulk head, a valve pipe connection between the supply and discharge pipes, and safety doors arranged in said room exteriorly of said bulk head, said pipes arranged below said doors.

In testimony whereof I affix my signature in the presence of two witnesses.

PATRICK QUINN.

Witnesses:

O. M. JOHNSON,
JNO. KREITZER.