

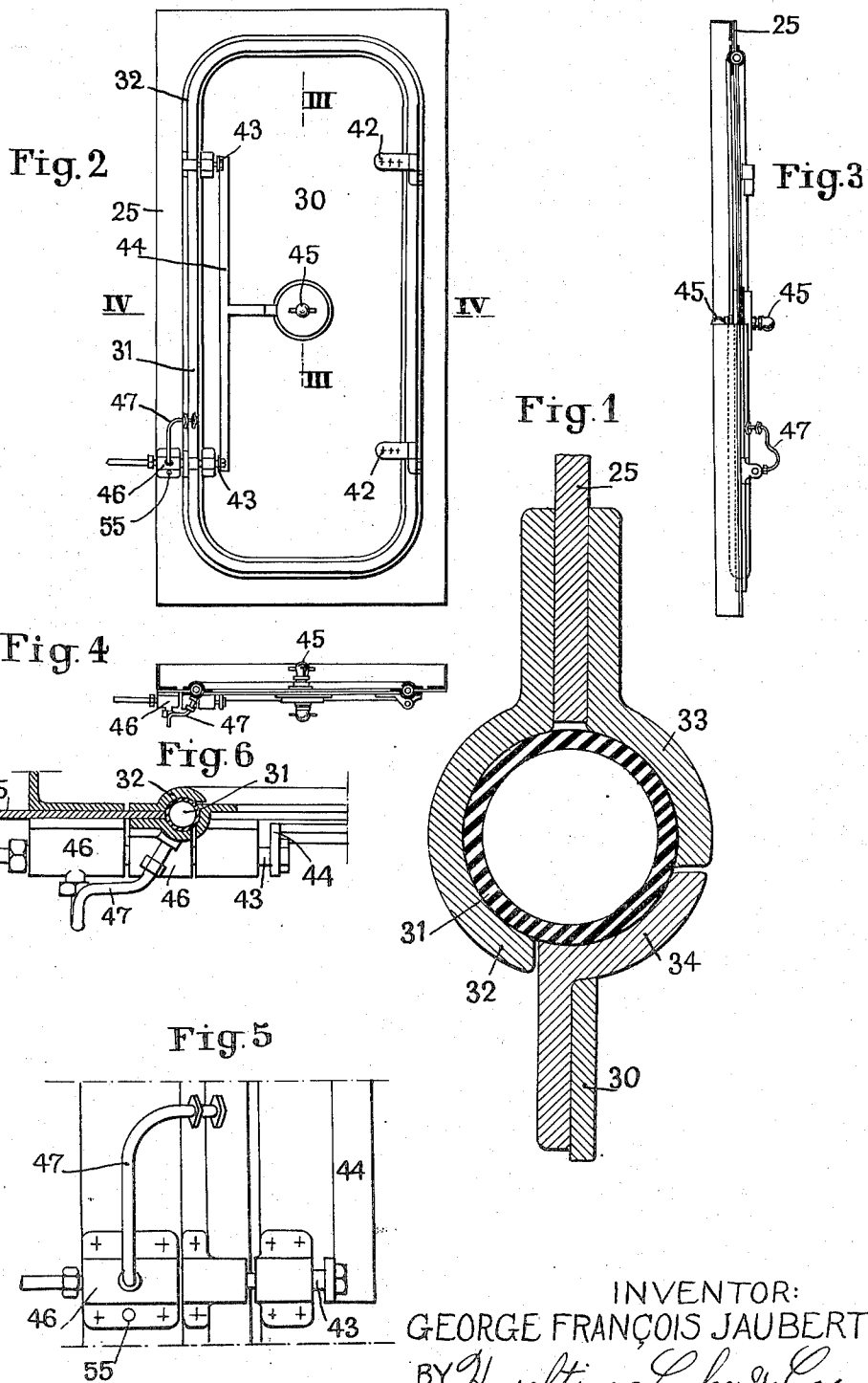
Aug. 3, 1937.

G. F. JAUBERT

2,088,909

GASTIGHT CLOSURE

Filed March 6, 1934



INVENTOR:
GEORGE FRANÇOIS JAUBERT
BY *Haseltine, Lake & Co.*
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,088,909

GASTIGHT CLOSURE

George François Jaubert, Paris, France

Application March 6, 1934, Serial No. 714,272

In France December 19, 1933

4 Claims. (Cl. 20—69)

My invention relates to closed chambers and more particularly to chambers or rooms in which means are provided for the production of a respirable atmosphere, in order to render said chambers habitable as safe shelters.

Specifically, the present invention comprises means for securing the sealing of closed chambers or rooms fed by means of an artificial atmosphere.

It has already been proposed to cause the air, when vitiated by the respiration of the occupants of a closed room or chamber, to pass through purifying plants and to receive afterwards a convenient addition of oxygen. Such arrangements, however, require an exact sealing of the rooms or chambers thus provided with an artificial atmosphere, in order to prevent said atmosphere to be spoiled by gas or mixture of gas which could happen to be sent from outside into said chamber.

My invention, which remedies above drawbacks, comprises tight doors fitted with a pneumatic sealing device, said pneumatic device being constituted by a simple tube of rubber filled with air and located in a peripheral cavity provided in the framework of the door and making a gas-tight joint between the door and the framework of same, thus securing an absolute tightness to the entering doors.

In order to allow the excess of air to make its escape out of the considered chamber or room without, however, allowing any introduction of external air or atmosphere into said room, a convenient conduit is provided for such escape of vitiated air in excess, a hydraulic joint being provided in said conduit for preventing any introduction of external air or atmosphere inside said room or chamber.

In the accompanying drawing forming part hereof

Fig. 1 is a transverse section of a form of construction of a sealing device for a door made according to my invention.

Figs. 2, 3 and 4 are, respectively, an elevation, a vertical section on line III—III of Fig. 2, and a transverse section on line IV—IV in Fig. 2, of a gas tight door embodying the invention and intended to provide a gas tight closure for a chamber, shelter or the like.

Figs. 5 and 6 are, respectively, an elevation and a partial section of a detail of control means for the door.

Throughout the views, the same reference numerals indicate the same parts.

In the practice of my invention, the door which is shown in fragmentary section in Fig. 1 is shown

in full in a practical installation in Fig. 2, and is adapted to close and seal an enclosure such as a shelter or the like, which is capable of supporting and conserving a certain increase of pressure above the atmospheric, ranging from, say, 5 to 10 mm. in a water column.

In the partition or wall 25, the door 30 is fitted into the opening therein, and has a flange or peripheral frame 34 projecting therefrom, while a pneumatic tube 31 of circular transverse section, is imprisoned between the channel pieces 32, 33, attached to the partition 25, the said tube being preferably surrounded for at least 270° of its section, as shown in Fig. 1, by said pieces thus ensuring in a simple manner that it will be held in a suitable position.

The tube 31 has a suitable device for inflation which may be formed, for example, by a valve passing through one of the channels 32, 33. Preferably, however, this valve could be arranged in that part of the tube 31 with which the frame 34 of the door 30 comes into contact, at the same time arranging in this framing 34 in a position corresponding to the placing of the valve mentioned, a channel coming from a reservoir of fluid under pressure, thus automatically ensuring that the sealing pressure will be set up in the interior of the pipe 31, as soon as the door is closed.

In order to ensure the gas tight closing of the openings formed in the wall of the shelter, the rebate 32 fixed on the partition 25 of this shelter frames the whole of the opening arranged in this partition, which can be blocked up by the door 30. This latter, mounted on hinges 42, is fitted with closing bolts 43, of any desired number, suitably distributed round the periphery of this door and controlled by means of a transmission such as 44 by an operating handle 45 arranged on each side of the door.

One of the bolts 43 is arranged in such a way as to control the opening of a valve 46 which automatically determines, as soon as the door is closed, the supply of compressed air to the interior of the tube 31 by a pipe 47 suitably connected to a source of compressed air or other gas, not shown on the drawing, and when the door is to be opened the automatic emptying of the tube 31 by placing this latter in communication with the free air by an orifice 55.

The invention can be applied to all cases where it is desired to maintain in an enclosed chamber, sealed or otherwise, a respirable atmosphere or one of any determined composition.

Having now fully described my invention, I claim:—

1. In a hinged door forming a closure for an opening in the wall of a chamber or shelter, including a door stop and a stationary resilient pneumatic tube lining the opening about said door adjacent to said stop and exposing at least a part of the cross sectional circumference to contact with the door when the latter is closed, the combination of a movable bolt upon the door for retaining the same in closed position at will, a catch disposed in a fixed position exteriorly of the door upon the door opening and cooperating with the bolt to form closure means for the door and pneumatic control means mounted in a stationary position at the door opening adjacent to said door stop and to said door in closed position of the latter for supplying compressed air from the source of air pressure to said pneumatic tube and being disposed in proximity to said bolt so as to be operated by the same through said catch to cause inflation of the pneumatic tube in said closed position of the door upon extension of said bolt towards said control means while guided by said catch, said control means being also capable of deflating said tube to the atmosphere upon withdrawal of the bolt, there being manual means to operate and extend said bolt in order to retain the door in closed position and also to withdraw said bolt and release the door so as to allow the same to be opened, and said catch forming the sole guide means and locking means for the bolt exteriorly of the contour of the door.

2. In a hinged door forming a closure for an opening in the wall of a chamber or shelter, including a door stop and a stationary, resilient, pneumatic tube lining the opening about said door adjacent to said door stop, and exposing at least a part of the cross-sectional circumference to contact with the door when the latter is closed, there being a bolt on the door to retain it closed and a peripheral seat portion upon the door against which the tube takes in closed posi-

tion of said door, the door tending to simultaneously engage against said door stop and against said tube and be locked between said tube and door stop on the one hand, and said bolt on the other hand when the door is locked, the combination of means for supplying and controlling the supply of air to the tube, a fixed hollow catch disposed adjacent to said door upon said door opening in such a position as to be clear of the door when it swings open and a pneumatic control means disposed upon one side of the door opening and both connected to an air pressure supply and to said stationary pneumatic tube so as to be capable of controlling the supply of compressed air to the pneumatic tube and also the deflation thereof to the atmosphere, said bolt upon said door being disposed adjacent to said pneumatic control means and said fixed catch and capable of being extended through said catch toward said pneumatic control means in order to operate the latter to inflate the pneumatic tube when said bolt is operated to engage said catch and lock the door, there being also manual means for shifting said bolt in order to release said door and allow same to be opened.

3. Control apparatus according to claim 2, wherein the pneumatic control means includes a valve having an operating member aligned with the hollow catch and bolt in closed position of the door, said bolt being capable of directly shifting said operating member through said catch in said closed position upon manipulation of said bolt by the manual means.

4. Control apparatus according to claim 2, wherein the pneumatic control means includes a valve having an operating member adjacent to the hollow catch directly in the path of the bolt in closed position of the door, said bolt being capable of directly shifting said operating member through said catch in said closed position upon manipulation of said bolt by the manual means.

GEORGE FRANÇOIS JAUBERT.