

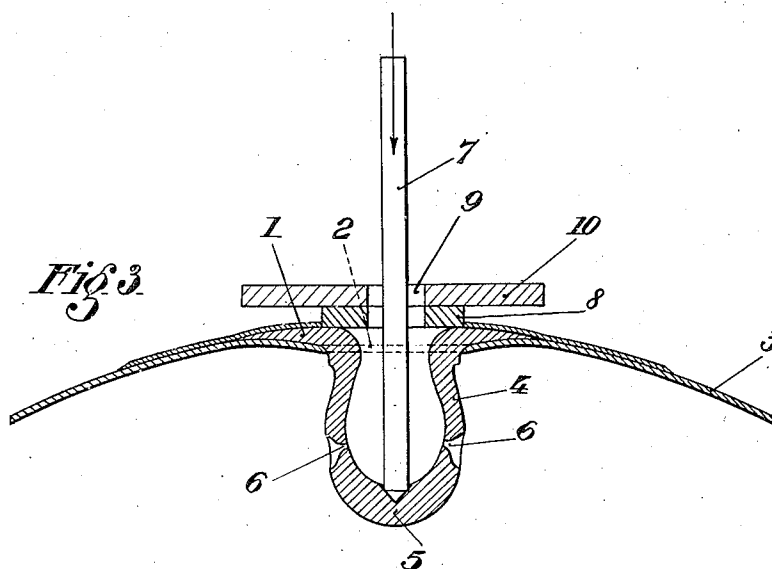
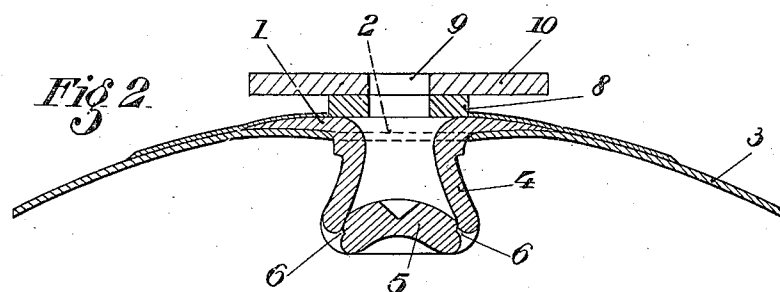
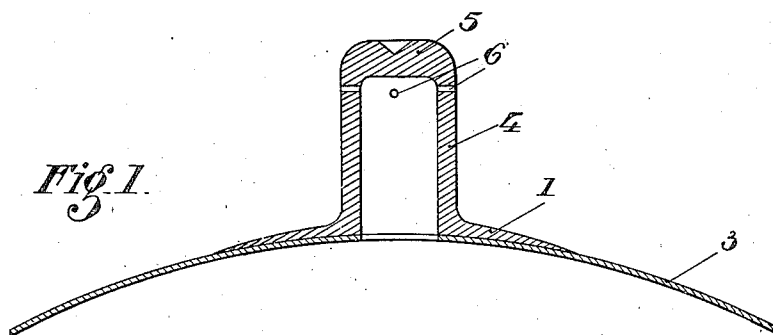
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AIR VALVE FOR BLADDERS AND OTHER INFLATABLE HOLLOW BODIES

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AIR VALVE FOR BLADDERS AND OTHER INFLATABLE HOLLOW BODIES

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My invention refers to an air valve for bladders and other inflatable bodies, and is an improvement of a device described in my French Patent No. 588,679 granted February 5th, 1925. The principal object of my invention is an air valve which is of a simple construction and absolutely air-tight. Other objects of my invention will be apparent from the specification.

A preferred embodiment of my invention is illustrated in the drawing.

Fig. 1 is a longitudinal section of a part of a bladder to which an elastic body is tightly fixed which is to be turned into the valve.

Fig. 2 is a longitudinal section of the completed valve in its closed state, and

Fig. 3 a longitudinal section of the completed valve in its open state.

First of all a body is made of rubber which body has in the unstrained state of its material the form of a top-hat having a rim 1 of sufficient breadth to warrant a tight connection with a bladder 3 at the mouth opening thereof, as shown in Fig. 1. The hat-like body has a cylindrical wall 4 being adjacent the rim 1 and ending in a top wall 5 which is somewhat thicker than the cylindrical wall 4. In the cylindrical wall orifices 6 are provided which are located near the end wall 5.

In its unstrained state the said hat-like body extends exteriorly from the outer surface of the bladder, and the said body is turned into the completed valve and thereby brought into a strained state by completely squeezing the hat-like body through the mouth opening 2 of the bladder into the interior of the latter, thereby turning the hat-like body inside out. The said body is now in a strained state in which it has the shape of a mushroom, as shown in Fig. 2. In consequence of the elasticity of the rubber the end wall 5 of the hat-like body tends to return into its initial position, and therefore the said end wall leans forcibly and tightly against the annular wall 4, whereby the orifices 6 become choked. The annular wall 4 is somewhat widened under the pressure exerted by the thicker end wall 5 and highly stretched in radial direction, so that the orifices are hermetically closed.

For opening the valve the end wall 5 is forcibly bulged out towards the interior of the bladder by means of a small stick 7, whereby the orifices 6 are opened to allow compressed air to escape from the interior of the bladder through said orifices, as shown in Fig. 3.

During the inflation of the bladder by means of an air pump the valve assumes at every pressure stroke of the pump piston the shape which is shown in Fig. 3, and according to which the end wall 5 is bulged out towards the interior of the bladder, so that the orifices 6 become opened. After every pressure stroke of the piston the orifices are automatically closed under the action of the compressed air in the interior of the bladder 3.

As shown in the Figures 2 and 3 the bladder 3 is brought into connection with a ring 8 which fits tightly to the outer surface of the bladder around the mouth opening 2. The ring 8 has a central opening 9 receiving the mouth piece of the air pump, and the ring has also a flange 10 which allows to keep said ring in tight connection with the bladder 3.

I claim:

1. An air valve for bladders and other inflatable hollow bodies, comprising a hat-shaped body connected at its open end with the wall of an inflatable body and having an annular wall and an end wall, said annular wall having openings situated near said end wall, said valve being formed by inverting said hat-shaped body inwardly of the inflatable body from the natural exterior position, the lower part of said hat-shaped body in such inverted position being bulged outwardly by the pressure of the end wall against said lower part, thus closing said openings.

2. An air valve for bladders and other inflatable hollow bodies, comprising a hat-shaped valve body connected at its open end with the wall of an inflatable body and having an annular wall and an end wall, said annular wall having openings situated near said end wall, said valve being formed by inverting said valve body inwardly of the inflatable body from the natural exterior position, the lower part of said valve body in such inverted position being bulged out-

wardly by the pressure of the end wall against said lower part, said openings being closed by the pressure of said end wall and being opened by pressing said end wall inside of said inflatable body.

3. An air valve for bladders and other inflatable hollow bodies, comprising a hat-shaped valve body connected at its open end with the wall of an inflatable body and having an annular wall and an end wall, said end wall being thicker than said annular wall, said annular wall having openings situated near said end wall, said valve being formed by inverting said valve body inwardly of the inflatable body from the natural exterior position, the lower part of said valve body in such inverted position being bulged outwardly by the pressure of the end wall against said lower part, thus closing said openings.

4. An air valve for bladders and other inflatable hollow bodies, comprising a tubular valve body extending in a strained state inside of the bladder and provided with openings, a rim on said body tightly connected with said bladder, an end wall for said valve body, said end wall being thicker than said valve body, a ring tightly fitting on the outer surface of said bladder around the open end of said valve body, and a flange on said ring, the valve being formed by inverting said tubular body inwardly of the bladder from the natural exterior position, in such inverted position the lower part of said tubular body being bulged outwardly by the pressure of the end wall against said lower part, thus closing said openings.

In testimony whereof I affix my signature.
SIEGFRIED SAUL.