Aug. 11, 1931. J. C. GROBLE 1,818,249

MUSHROOM VENT PLUG

Filed Sept. 25, 1929

Fig. 2

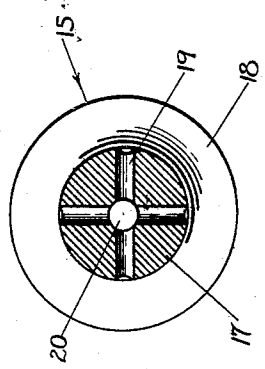


Fig. 3

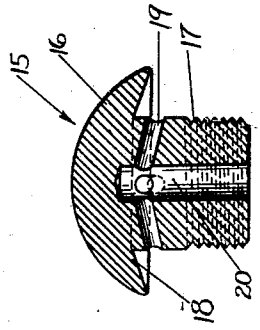
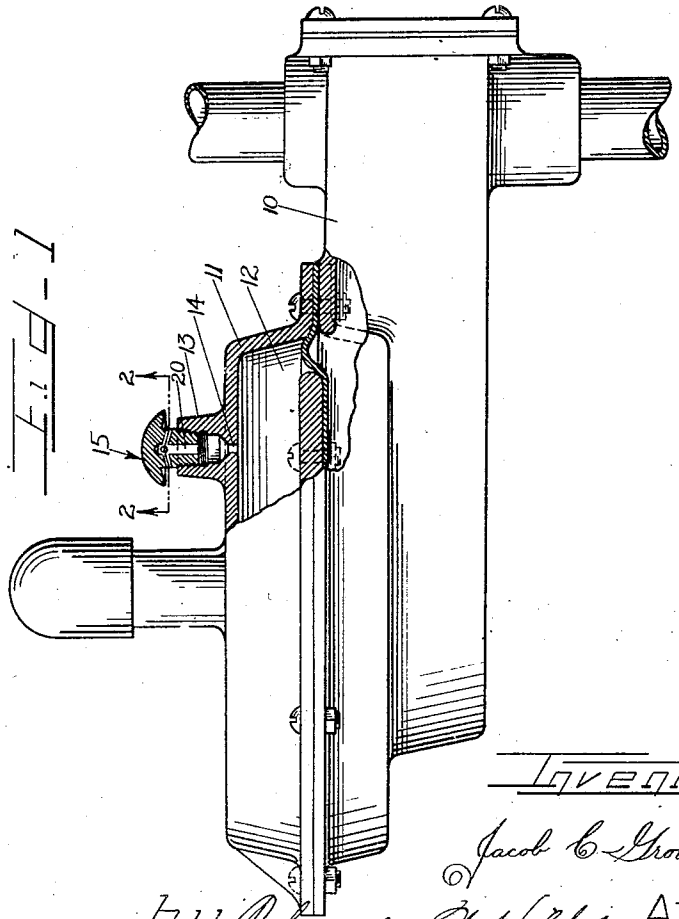


Fig. 1



Inventor

Jacob C. Groble

by Charles K. Wills Attys

Patented Aug. 11, 1931

1,818,249

UNITED STATES PATENT OFFICE

JACOB C. GROBLE, OF ANDERSON, INDIANA, ASSIGNOR TO GROBLE GAS REGULATOR CO., OF ANDERSON, INDIANA, A CORPORATION OF INDIANA

MUSHROOM VENT PLUG

Application filed September 25, 1929. Serial No. 394,972.

My invention relates to vent plugs for gas regulators and the like and more particularly to a mushroom-shaped vent plug formed in such a manner as to substantially prevent the clogging of the vent passageways therein by the natural elements, insects and the like.

Prior to my invention, I experienced a great deal of trouble with gas regulators due to the clogging up of the vents of the same by insects, natural elements and the like. This is particularly true of the gas regulators installed in the southern parts of our country where insects such as mud daubers exist in great numbers. These mud daubers seem to delight in building their nests in the vents of gas regulators and sealing up their eggs in the same. When the young mud daubers come out of their nests they break through the outer mud portions of the nests but do not disturb the inner portions of mud in the vents. The mud remaining in these vents naturally clogs the same and renders the regulators associated therewith inoperative, thereby making it necessary for a service man to go out into the field and reopen such clogged vents in order to put the regulators back into operation.

The object of my invention is to provide an improved vent plug particularly adapted for use in gas regulators and which is of such a construction as to prevent insects such as mud daubers and the like from clogging up the vent passageways in the same.

In accordance with the general features of my invention, there is provided a vent plug comprising a headed member shaped similar to a mushroom including a head portion with an upwardly and inwardly inclined under surface and a stem portion having a central passageway communicating at its upper end with radial passageways terminating at their outer ends directly under the inclined surface of the head; the inclined under surface of the head being so arranged relative to the radial passageways as to aid in preventing the clogging of the outer ends of these passageways by insects, natural elements and the like.

Other objects and advantages of my invention will more fully appear from the following detailed description taken in connection with the accompanying drawings which illustrate a single embodiment of my invention and in which:

Figure 1 is an elevation of an auxiliary or service gas regulator partly in section provided with the vent plug of my invention which is illustrated in section;

Figure 2 is an enlarged sectional view taken on substantially the line II—II of Figure 1 through the vent plug of my invention, looking upwardly; and

Figure 3 is an enlarged vertical sectional view of the plug of my invention similar to the view of the plug shown in Figure 1.

In the drawings:

Figure 10 designates generally an auxiliary or service gas regulator which includes a top cap 11 defining a diaphragm chamber 12. The top cap 11 is provided with an upwardly extending tubular boss 13 into which is threaded a vent plug 15 embodying the features of my invention. This vent plug is disposed at its lower end in communication with a small opening 14 communicating with the diaphragm chamber 12. The purpose of this vent plug 15 as is well known in the art is to relieve the chamber 12 from pressure as the diaphragm of the regulator is moved upwardly therein. Obviously if the vent in such a plug should become clogged for any reason it would result in a back pressure being built up in the diaphragm chamber 12 which would react in such a way on the diaphragm of the regulator as to practically make the regulator inoperative for the purpose which it is designed to accomplish.

The vent plug 15 of my invention is designed with the thought in mind of minimizing the possibility of the vent passageway in said plug becoming clogged by insects, natural elements and the like. This plug, as best shown in Figures 2 and 3 comprises a headed member shaped similar to a mushroom and includes a head portion 16 and a threaded stem 17 formed to be threaded into the boss 13 of the regulator. The head 16 has its top surface curved or semi-spherical in shape so as to enable rain and the like to readily glance off the same. The under edge of the head por-

tion 16 is provided with an upwardly and inwardly inclined annular surface 18 designed to serve as a protecting ledge for the outer ends of the radial vent passageways 19 formed in the stem 17 of the plug.

The radial passageways 19 communicate at their inner ends with a central vertical passageway 20 extending upwardly through the stem 17. This central passageway 20 is adapted to communicate with the opening 14 in the cap 11 of the regulator previously described.

Radial passageways 19 are inclined downwardly from the upper end of the central passageway 20 and have their outer ends terminating directly below the inclined surface 18 of the head portion 16.

The radial passageways 19 of this plug as is evident from Figure 1 are relatively small as compared to the central passageway 20 or the opening 14 in the cap 11, and are in fact made small enough so as to prevent mud daubers and similar insects from entering the same. Moreover, the protecting annular ledge of the head portion 16 is designed so as to ward off the natural elements from these passageways, thus minimizing the possibility of the outer ends of these passageways 19 becoming clogged by the natural elements and the like. Then, too, it is to be noted that even if one of the radial passageways 19 were to become clogged it would not render the regulator inoperative for the reason that the other radial passageways will permit of the venting of the chamber 12 of the regulator.

Now I desire it understood that although I have illustrated and described in detail the preferred embodiment of my invention, the invention is not to be thus limited but only insofar as defined by the scope and spirit of the appended claim.

I claim as my invention:

A vent plug for a gas pressure regulator, said plug consisting of a body having a reduced stem portion terminating at one end in an enlarged mushroom-shaped head portion defining on the lower side thereof an outwardly and downwardly inclined annular lip, said body having a central passage in the stem portion terminating within the head, and a plurality of downwardly and outwardly inclined relatively small side passages extending from the central passage through the stem arranged to open under said lip, said lip and side passages arranged cooperating to prevent the blocking of the vent by mud daubers and the like.

In testimony whereof I have hereunto subscribed my name at Anderson, Madison County, Indiana.

JACOB C. GROBLE.