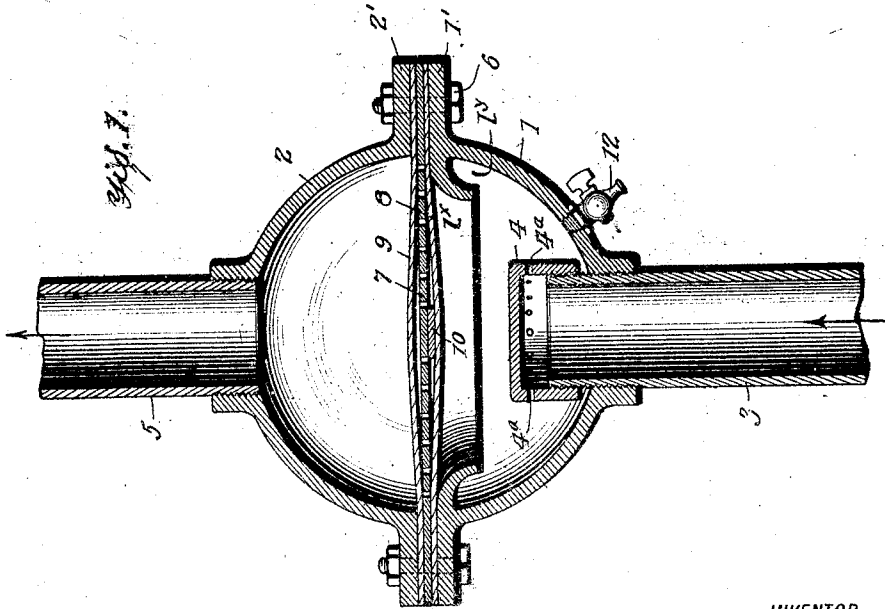
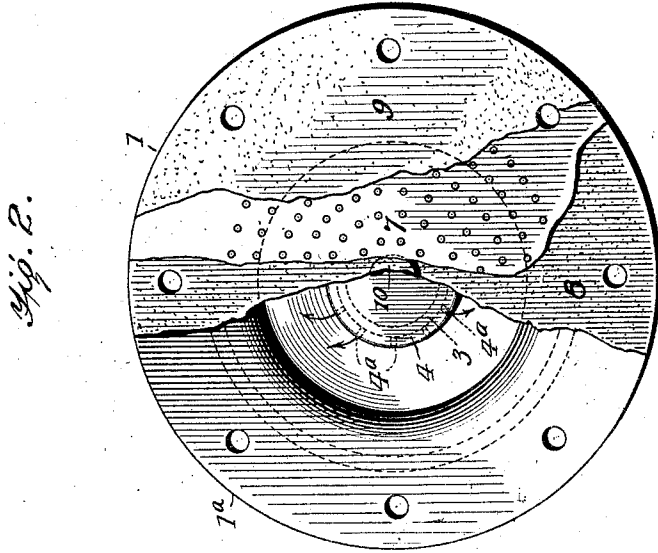


J. W. CARPENTER.
GAS ECONOMIZER AND PURIFIER.
APPLICATION FILED OCT. 26, 1909.

974,551.

Patented Nov. 1, 1910.



WITNESSES

L. H. Schmidt.
L. A. Stanley

INVENTOR
JOHN W. CARPENTER,

BY *Munn & Co.*

ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN W. CARPENTER, OF SALEM, WEST VIRGINIA.

GAS ECONOMIZER AND PURIFIER.

974,551.

Specification of Letters Patent.

Patented Nov. 1, 1910.

Application filed October 26, 1909. Serial No. 524,660.

To all whom it may concern:

Be it known that I, JOHN W. CARPENTER, a citizen of the United States, and resident of Salem, in the county of Harrison and State of West Virginia, have invented certain new and useful Improvements in Gas Economizers and Purifiers, of which the following is a specification.

My invention relates to improved devices for purifying gas and for preventing a wasteful use thereof, and it consists of the constructions, combinations and arrangements of parts herein described and claimed.

An object of my invention, as stated above, is to provide a device which will remove from the gas such impurities as particles of sand, dirt or rust and to provide means whereby they may be expelled entirely from the device.

A further object of my invention is to provide means for decreasing the excess flow of gas and thereby saving the gas and economizing in the use of the same.

Further objects and advantages will appear in the following specification and the novel features of the device will be particularly pointed out in the appended claim.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a central section through the device, and Fig. 2 is a section at right angles to that in Fig. 1 along the central portion of the device, certain parts being broken away in order to show the construction.

In carrying out my invention, I provide two hemispherical shells 1 and 2 which are preferably of metal and which form the main part of the casing. To the central portion of the shell 1 is secured an inlet pipe 3, the latter being screwed into the shell, as clearly shown in the drawing. On the end of the pipe 3, within the shell 1, is secured a cap 4 which is perforated at 4^a along its periphery so as to permit the exit of gas. The shell 1 is also provided with a curved flange 1^x extending inwardly as shown in Fig. 1. The shell 2 has a pipe 5 which is secured into its central portion and is for the exit of the gas.

Each of the shells 1 and 2, has an external flange 1' and 2', respectively, and these flanges are arranged to register so as to be secured by means of the bolts 6. Between the flanges is secured a central perforated metal disk 7 and on either side of the disk are the flexible membranes 8 and 9. The

latter are preferably hog-skin but may be made of other suitable material for straining the gas. The edges of these disks are extended over so as to register with the flange portions 1' and 2' of the shells 1 and 2, and the membrane together with the central perforated disk 7 are held together by means of the bolts 6. Between the membrane 8 and the disk 7, there may be placed a leather spacer 10 or the device may be without the spacer, if desirable.

The section 1 of the casing is provided with a pet-cock 12, situated near the inlet pipe 3.

From the foregoing description of the device, the operation thereof may be readily understood.

The device is intended to be used preferably with natural gas. It may be inserted in the circuit near the meter and preferably on the opposite side of the meter from the gas main. The gas and air pass through the meter and on into the inlet pipe 3. From thence it passes through the perforations 4^a into the lower chamber 1. It will be noted that these perforations 4^a are in the side and not in the end of the cap 4. The dirt which is carried with the gas through the perforations is directed into the groove 1' between the body portion of the shell 1 and the flange 1^x. Thence it drops by gravity into the bottom of the shell. This prevents the clogging of the pores of the diaphragm by particles which might be projected directly against the diaphragm if the openings were in the end of the cap. The gas passes through the central opening between the edges of the flange 1^x. Here it meets the resistance of the first diaphragm, passes through the perforations in the disk 7 and on through the second diaphragm, and thence through the exit. The dirt or rust is filtered out by the first diaphragm and drops down into the lower part of the chamber 1, from whence it may be blown out by opening the pet-cock 12. A further saving by the use of the economizer and purifier is found in the mantles, as no particles of sand, dirt, or rust can pass the economizer and purifier to destroy the same.

In the use of the economizer, it will be seen that nothing but gas is consumed. Aside from the saving to mantles, it saves the burners in this: that by the use of the gas economizer and purifier the gas comes to the lights filtered, thereby avoiding the necessity of

frequent boiling and cleaning of burners, and tends to lessen the chances of explosion.

I claim:

5 In a gas purifier and economizer, a casing comprising two hemispherical sections provided with peripheral flanges, a perforated metal disk, a resilient membrane on each side of said disk, said disk and said membrane being secured between the abutting flanges
10 of the two hemispherical sections, a spacing member between one of said membranes and the perforated disk, an inlet pipe into one of said hemispherical sections, a metal cap

screwed to the end of said inlet pipe and provided with perforations in the side thereof, the hemispherical section bearing the inlet pipe also being provided with an inwardly curved flange directed toward the inlet pipe, a cock secured in said section near said inlet pipe and an exit pipe from the other hemispherical section. 15 20

JOHN W. CARPENTER.

Witnesses:

J. W. WEEKLEY,
M. H. DAVIS.