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G. R. IBACH & E. J. BARTEL.

STEADYING DEVICE FOR GAS DISTRIBUTING SYSTEMS.

APPLICATION FILED MAR. 12, 1904.

NO MODEL.

Fig. 1.

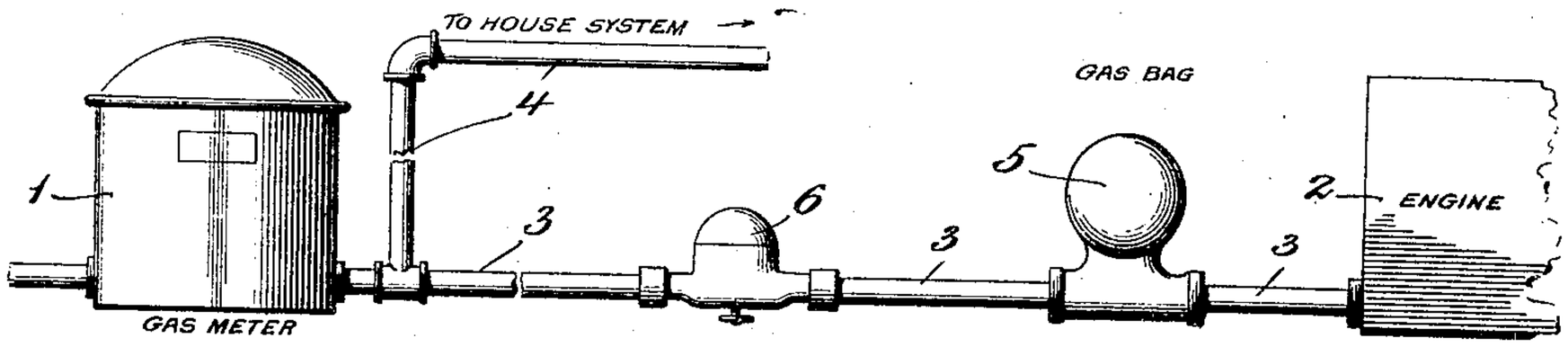


Fig. 2.

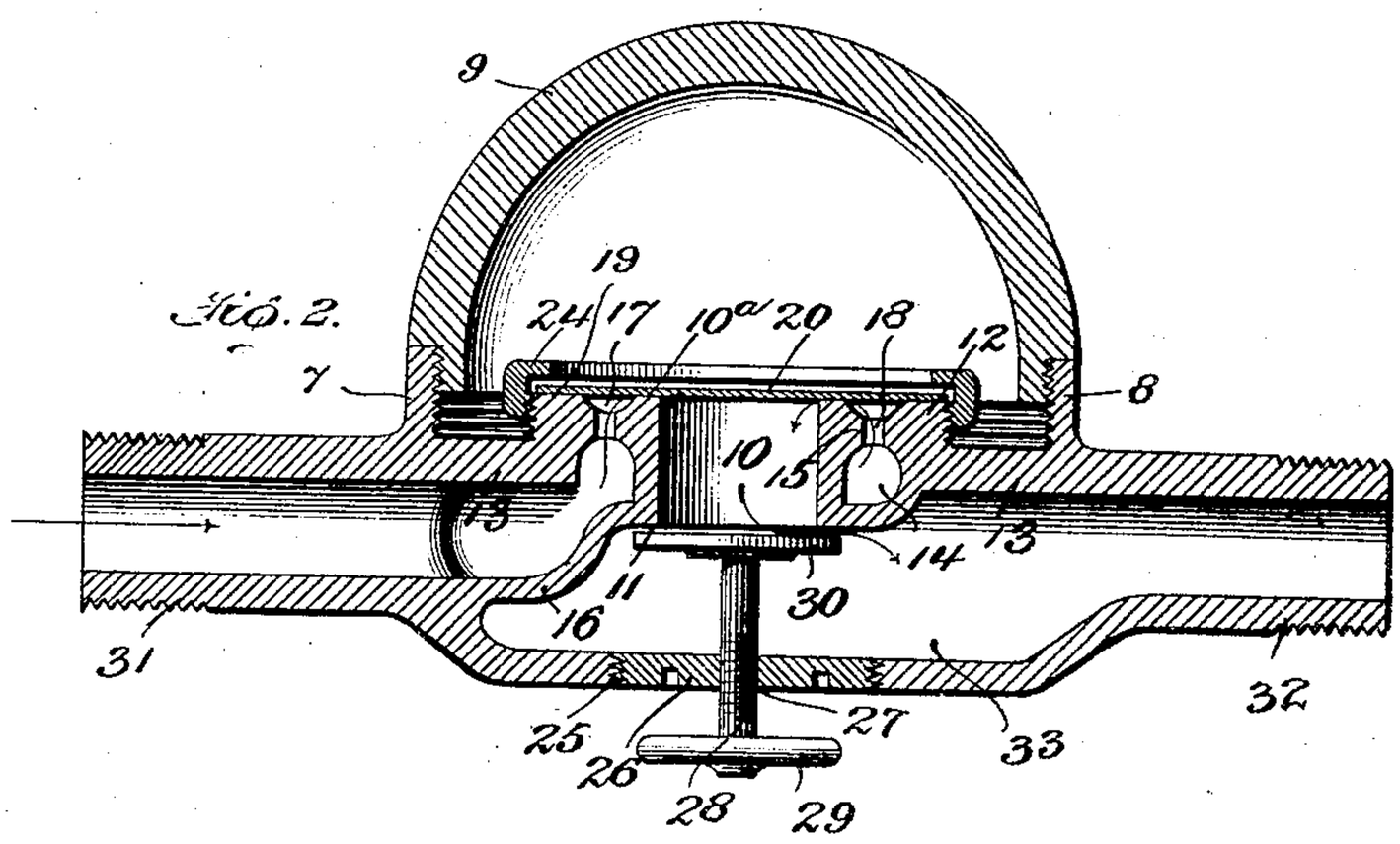


Fig. 3.

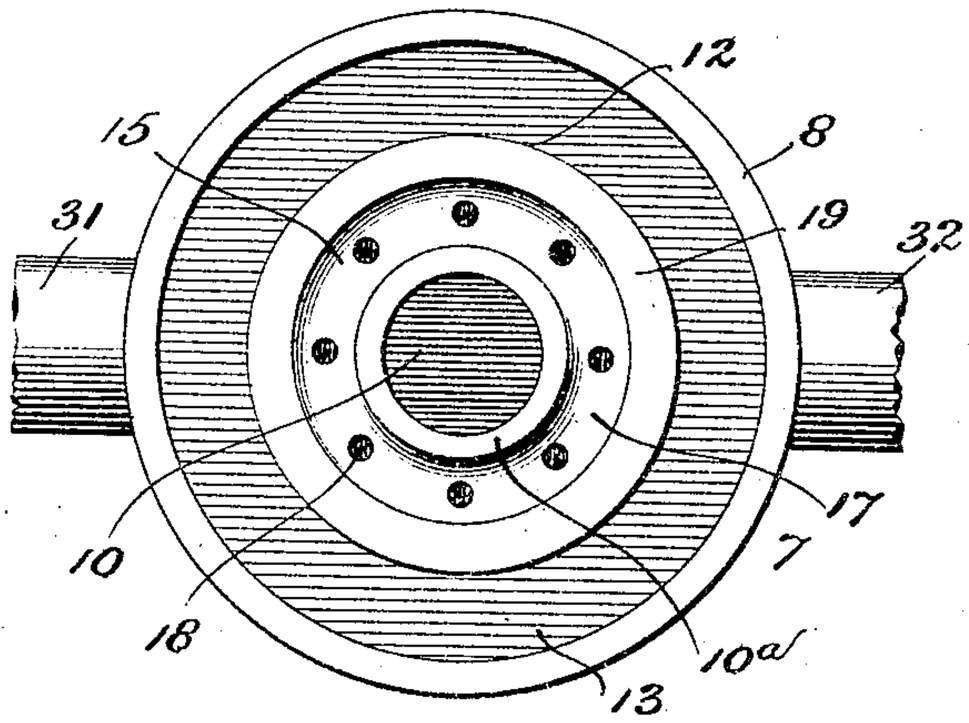


Fig. 4.

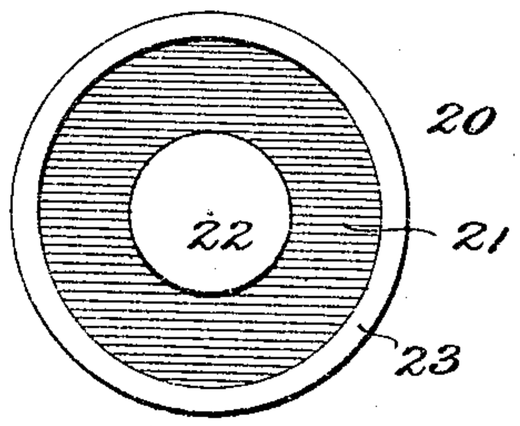
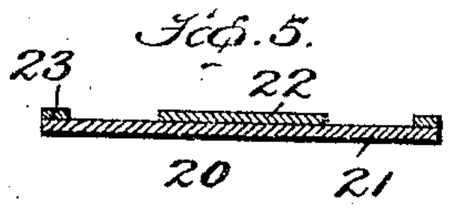


Fig. 5.



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UNITED STATES PATENT OFFICE.

GIDEON R. IBACH, OF BROOKLYN, AND EMIL J. BARTEL, OF LONG ISLAND, NEW YORK.

STEADYING DEVICE FOR GAS-DISTRIBUTING SYSTEMS.

SPECIFICATION forming part of Letters Patent No. 765,925, dated July 26, 1904.

Application filed March 12, 1904. Serial No. 197,748. (No model.)

To all whom it may concern:

Be it known that we, GIDEON R. IBACH, residing at Brooklyn, county of Kings, and EMIL J. BARTEL, residing at Long Island, county of Queens, State of New York, citizens of the United States, have invented a Steadying Device for Gas Systems, of which the following is a specification.

Our invention has for its object the production of a device to be employed in gas-lighting systems wherein it is also desired to run an ordinary gas-engine, the purpose of such device being to enable the user to employ a single meter and system for the two purposes and yet to prevent the pulsations of the engine in any way influencing the steady flow of gas to the lighting system. Heretofore under such conditions it has been found that in attempting to operate a lighting system and a gas-engine by means of gas conducted through the same service-pipes the pulsations of the engine (commonly called the "suck") caused the gas to be fed unsteadily to the burners, so that the lights would rise and fall. This necessitated employing different meters and systems—one for the lighting system and the other for the engine.

The invention therefore consists in the employment of a device for the purpose stated between the usual house-meter and the engine and in the device hereinafter described.

Referring to the drawings, Figure 1 illustrates in elevation a meter, a gas-engine, a house-lighting system, and our improved device located between the meter and engine. Fig. 2 is a detail in vertical longitudinal section of our improved device. Fig. 3 is a top plan view of the latter device with the cap and valve removed. Fig. 4 is a detail in plan of the removed valve, and Fig. 5 is a transverse section of the same.

Similar numerals of reference indicate similar parts in all the figures of the drawings.

In the drawings, 1 designates the meter; 2, the gas-engine; 3, the pipe leading from the former to the latter; 4, the pipe leading to the house-lighting system; 5, the gas-bag or other form of pressure device, and 6 our device for overcoming the pulsations of the engine within the house-lighting system, said device being located between the engine and the point in the pipe 3 at which the pipe supplying the lighting system is connected.

Our steadying device comprises a preferably circular shell 7, provided with an upwardly-disposed interiorly-threaded flange 8, surmounted by a removable dome-shaped cap or cover 9, which after such removal affords a means of access to the interior of the device to facilitate cleaning, repair, &c.

Cast integral with the shell 7 or otherwise secured therein is a centrally-located cylindrical shell forming a central port 10, provided at its upper end with a valve-seat 10^a and at its lower end with a similar seat 11.

A vertical wall 12, annular in shape, surrounds the port 10 and may be exteriorly threaded for a purpose hereinafter apparent. This wall 12 rises from a horizontal partition 13, which serves to subdivide the shell 7.

Between the shell forming the port 10 and the short annular vertical wall 12 is formed an annular chamber 14, the same being produced by the two intermediate substantially horizontal walls 15 and 16. The chamber thus produced has its upper wall or dome provided with an external channel 17, which therefore surrounds the port 10, and said wall or dome 15 is at intervals provided with ports 18, affording a means of communication between the channel 17, and therefore the port 10 and the annular chamber.

The upper edge of the short vertical wall 12, that surrounds the channel 17, is finished off to form a valve-seat 19, the latter being in the same horizontal plane as the upper seat 10^a of the port 10. These two valve-seats 10^a and 19 are covered by the same clack-valve or diaphragm 20, (for detail of which see Figs. 4 and 5,) and the same may consist of a light leather or other body 21, surmounted by a metal disk 22 above the seat 10^a and a metal ring 23 above the seat 19, said disk and ring lending stability and assuring a complete closing of the valve upon the two seats.

To retain the valve 20 in operative position upon the seats, we may provide a flanged ring 24, the flanged wall of which is internally

threaded to engage the threads of the annular vertical wall 12.

The bottom of the main shell 7 may be formed with an opening 25, into which is threaded a plug or plate 26, designed to be removed to afford access to the shell 6 for the purpose of producing the lower seat 11 of the central port 10. This plug 26 may have a central perforation 27, in which is adjustably threaded a valve-stem 28, the lower end of the latter carrying an operating hand-wheel 29 and the upper end a valve 30, adapted to be adjusted with relation to the seat 11 of the port 10.

At opposite sides of the shell 7 are located branch pipes 31 and 32, the former being the inlet branch and communicating with the annular chamber 14 and the remaining being the outlet branch and communicating with the shell 7 below the port 10 or, in other words, the outlet-chamber 33. Of course the ends of these pipes may be finished in any way to adapt them for coupling up with the service-pipe 3.

The valve 30 may or may not be employed; but we prefer to do so. This valve, if employed, is of course adjusted to the wants of the engine.

The gas coming from the meter passes to the pipes 3 and 4. In passing through the former the gas passes through our steadying device, first entering through the inlet branch thereof and passing out through the outlet branch. In passing from the inlet branch 31 the gas flows into the annular chamber 14, passing up through the ports or perforations 18 into the channel 17. The pressure is sufficient to raise the valve 20, thus permitting the gas to descend through the port 10 into the chamber 33 and from thence out. This describes the usual flow of gas, or, in other words, when the gas-bag or other form of pressure-equalizer is full. Immediately, however, that the suck of the engine is capable of being felt in the service-pipe between the pressure-equalizer and the meter, and therefore in the lighting-system pipe 4, the suction is sufficient to close the valve 20, which cuts off communication between the house-lighting system and the engine, so that the former is not in the least affected. In this manner the undesirable flicker of the lights is avoided and yet at the same time the one gas system can be utilized to serve the two systems.

Various changes may be made in our invention as regards the details of construction, and we therefore would have it understood that we do not confine our invention to the precise details herein shown and described.

Having described our invention, what we claim is—

1. The combination, with a gas-meter, a house-lighting system leading therefrom, a gas-engine, and a supply-pipe leading from said meter to said engine, of a steadying device located in the supply-pipe beween the meter and engine, said steadying device comprising a main or outer shell having inlet and outlet branches communicating with said supply-pipe at opposite sides of said shell, said shell having an internal partition subdividing it into inlet and outlet chambers communicating respectively with the inlet and outlet branches, a valved main port formed in said partition and affording a means of communication between the two chambers, and a valved chamber contiguous to and surrounding the main port and at one end communicating with the inlet branch and at its opposite end with the inlet-chamber.

2. The combination with a gas-meter, a house-lighting system leading therefrom, a gas-engine, and a supply-pipe leading from said meter to said engine, of a steadying device located in the supply-pipe between the meter and engine, said device comprising a main shell having inlet and outlet branches communicating with said supply-pipe at opposite sides of said shell, said shell being divided into inlet and outlet chambers communicating respectively with the inlet and outlet branches, a main port communicating with the two chambers, a chamber contiguous to the main port and at one end communicating with the inlet branch and at its opposite end having ports communicating with the inlet-chamber, and a valve for covering the inlet end of said main port and the ports of the said contiguous chamber.

3. The combination with a gas-meter, a house-lighting system leading therefrom, a gas-engine, and a supply-pipe leading from said meter to said engine, of a steadying device located in the supply-pipe between the meter and engine, said device comprising a main shell having inlet and outlet branches communicating with said supply-pipe at opposite sides of said shell, said shell being divided into inlet and outlet chambers communicating respectively with the inlet and outlet branches, a central main port communicating with the two chambers, a surrounding contiguous annular supply-chamber communicating with the inlet branch and at its opposite end having ports communicating with the said inlet-chamber, and a valve covering said ports of the annular chamber and the inlet end of the central main port.

4. The combination with a gas-meter, a house-lighting system leading therefrom, a gas-engine, a supply-pipe leading from said meter to said engine, of a steadying device located in the supply-pipe between the meter and engine, said device comprising a main shell having inlet and outlet branches communicating with said supply-pipe at opposite sides of said shell, said shell having a horizontal wall or partition dividing the same into inlet and outlet chambers arranged one above the other, a central main port affording

means of communication between the two chambers, an annular chamber surrounding the main port and at its lower end communicating with the inlet branch and at its upper end provided with an annular series of ports communicating with the upper inlet-chamber, a valve-seat surrounding the said ports and in the same plane as the upper end of the main port, a valve arranged to cover said upper end of the main port and the surrounding valve-seat, and a ring for holding the said valve in position thereon.

5. The combination with a gas-meter, a house-lighting system leading therefrom, a gas-engine, a supply-pipe leading from said meter to said engine, of a steadying device located in the supply-pipe between the meter and engine, said device comprising a main shell having inlet and outlet branches communicating with said supply-pipe at opposite sides of said shell, said shell having a horizontal wall dividing the same into upper and lower inlet and outlet chambers, a central main port communicating with the two chambers, a valve at the upper end of the same, a surrounding annular chamber having outlet-ports and communicating at one end with the inlet branch and at the other through the ports with the inlet-chamber, a valve covering the ports of the annular chamber and the upper end of the main port, and an adjustable valve covering the opposite end of the main port.

6. The herein-described steadying device for the purpose specified, the same consisting of a main outer shell having a surrounding threaded wall provided with a removable cap or cover and having a horizontal partition dividing the shell into an upper inlet-chamber and a lower outlet-chamber, inlet and outlet branches communicating with the two chambers, a centrally-located vertically-disposed main port valved at its upper end, a surrounding annular chamber communicating with the inlet branch and at its upper end having valved ports communicating with the inlet-chamber.

7. The herein-described steadying device, the same comprising a main or outer shell 7, having a surrounding threaded wall 8, a horizontal partition 13 dividing the shell into upper and lower chambers, inlet and outlet branches communicating respectively with the upper and lower chambers, a cap or cover mounted removably on the wall, a central vertical main port 10 communicating with the upper and lower chambers, an annular chamber 14 communicating with the inlet branch and provided at its upper side with the annular series of ports 18, the annular channel 17, and the surrounding valve-seat 19, in the same plane as the upper end of the main port 10, the valve 20 covering said upper end of the main port and the seat 19, the retaining-ring 24 threaded on the wall of the valve-seat 19, the valve 30 and its operating means.

8. The herein-described steadying device, the same comprising an outer shell divided into opposite chambers communicating with inlet and outlet branches located at opposite sides of the shell, a main port affording a means of communication between the two chambers, an intermediate contiguous chamber communicating with the inlet-chamber and branch and provided with outlet-ports, and a valve for the inlet end of the main port and the outlet-ports of said contiguous chamber.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GIDEON R. IBACH.
EMIL J. BARTEL.

Witnesses:
MATTHEW MAXWELL,
GEO. W. PALMER.