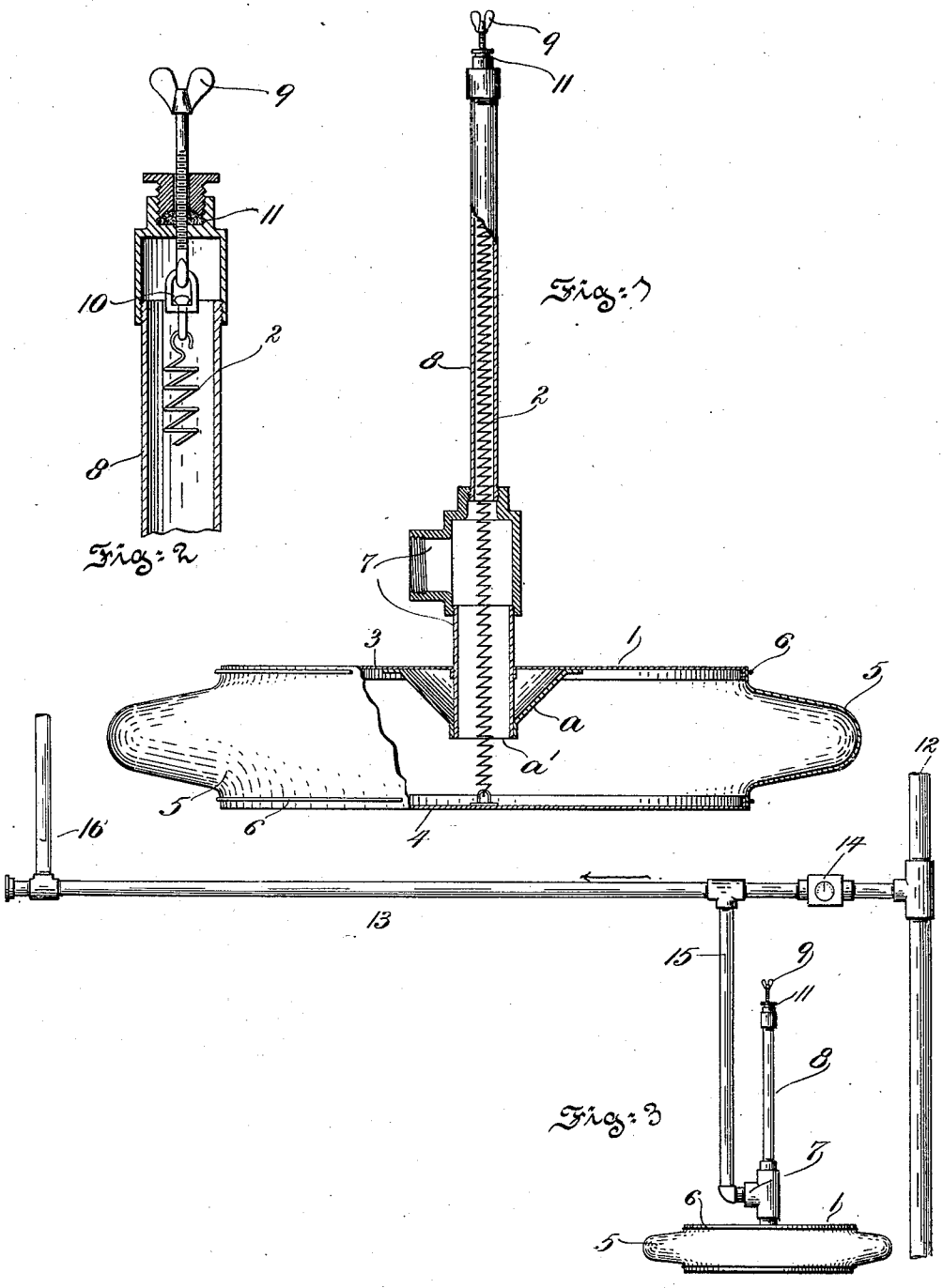
No. 889,423. PATENTED JUNE 2, 1908.

W. M. WOOD.

ANTIFLUCTUATOR FOR GAS SERVICE PIPES.

APPLICATION FILED OCT. 17, 1904.



Witnesses:

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ANTIFLUCTUATOR FOR GAS-SERVICE PIPES.

No. 889,423. Specification of Letters Patent. Patented June 2, 1908.

Application filed October 17, 1904. Serial No. 228,715.

To all whom it may concern:

Be it known that I, WILLIAM M. WOOD, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Antifluctuators for Gas-Service Pipes, of which the following is a specification.

The pumping elements of, for example, gas engines or compressors in intermittently drawing their supplies of gas cause objectionable fluctuations of pressure in the service pipes and also sometimes in the mains.

It is the principal object of the present invention to provide for satisfactorily supplying gas to a gas engine or other analogous device and to avoid undesirable pressure fluctuations in the service pipe or main.

Another object of the invention is to provide an anti-fluctuator which will operate with wide ranges of pressure in the supply or service pipe.

To these and other ends hereinafter set forth the invention comprises the improvements to be presently described and finally claimed.

The nature, characteristic features and scope of the invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof and in which

Figure 1, is a view principally in central section illustrating an anti-fluctuator embodying features of the invention. Fig. 2, is a view drawn to an enlarged scale and illustrating details of construction, and Fig. 3, is a diagrammatic view illustrating the application of the anti-fluctuator shown in Fig. 1.

In the drawings 1, is a gas reservoir capable of expansion and contraction.

2, is a spring operatively arranged in respect to the reservoir and constructed to automatically keep the pressure of gas in the reservoir substantially the same as the pressure at which the gas is supplied irrespective of the quantity of gas inclosed in or the amount of distention of the reservoir. The spring, by reason of the fact that its pull is proportional to its extension causes the device to operate between wide ranges of pressure in the service pipe or main, such for example as the variation between night and day pressures.

In the embodiment of the invention illustrated in the drawings 3 and 4, are disks of comparatively large area connected together by means of flexible material 5, which may be suitably tied to the edges thereof as by means of cords 6, thus constituting what may be called bellows.

7, is a gas connection extending through and carried by the upper disk 3, and provided with an upwardly extending tube or sleeve 8, which serves to contain the spring 2. The upper end of the sleeve 8, may be provided with an adjusting screw 9, connected with the upper end of the spring 2, as by means of a turn buckle 10, and suitable provisions as 11, may be provided for making a gas tight joint. The screw 9, when present serves to adjust the tension which the spring 2, exerts in the proper direction for collapsing the reservoir. This affords means for adjusting the anti-fluctuator to different conditions such as different gas pressures in the mains. The lower end of the spring 2, is suitably connected with the disk 4. The lower end of the pipe 7 projects downwards from the disk or plate 3 for a two-fold purpose. First, it affords means for attachment for the funnel shaped brace *a*, and second, should leakage occur for example by reason of the accidental cutting of the flexible material of the bellows, the spring 2 will seat the end *a'* of the pipe against the lower disk, thus preventing undue leakage. It may be remarked that the device is free from throttle valves of any description, so that the engine draws its supply through the full area of the pipe.

The operation of the device illustrated in Fig. 1, may be described in connection with Fig. 3, in which 12, represents a gas main; 13, a service pipe, 14, a meter; 15, a spur connection to the anti-fluctuator; and 16, a pipe leading to the suction element of a pump, gas engine or other device which sucks intermittent supplies of gas usually in rapid succession. The effect of sucking a supply of gas from the pipe 16, is to tend to cause a drop or fluctuation of pressure in the pipe 13, or main 12. However, the spring 2, since it is without inertia operates practically instantaneously to collapse the reservoir 1, and thus supply sufficient gas under proper conditions for opposing the described tendency and maintaining the pressure substantially constant. In the interval when suction is not exerted at the pipe 16, the pres-

sure from the main 12, serves to overcome the power of the spring 2, and thus gas enters the reservoir 1, distending it ready to compensate for the next recurring suction of the pipe 16. Although the suctions on the pipe 16, may recur with great frequency the described anti-fluctuator is by reason of the absence of inertia and the rapidity of action of the spring amply able to compensate for them and keep the pressure in the service pipe and main substantially constant or at any rate subject to such slight fluctuations as are unobjectionable.

It will be obvious to those skilled in the art to which my invention relates that modifications may be made in detail without departing from the spirit thereof, hence the invention is not limited further than the prior state of the art may require, but

Having thus described the nature and objects of my invention, what I claim as new and desire to secure by Letters Patent is

1. An anti-fluctuator for a gas service pipe comprising bellows freely contractile and having gas connections, and a spring arranged to normally contract said bellows and adapted when yielding to permit them to expand under gas pressure to maintain pressure upon their gas contents, substantially as described.

2. The combination with the suction pipe for the pumping element of a gas engine or the like and a supply pipe for gas under pressure, of freely contractile bellows communicating with said pipes, and a spring arranged to contract said bellows and adapted to yield under gas pressure in the bellows to permit the latter to expand and which maintains pressure on the gas contents, substantially as described.

3. An anti-fluctuator for gas pressure service pipes comprising bellows freely contractile and having a spring operating to collapse them and adapted to maintain pressure on their gaseous contents, and a gas connection serving as an inlet and outlet and constructed to constitute a spur connection in respect to the gas supply, substantially as described.

In testimony whereof I have hereunto signed my name.

WILLIAM M. WOOD.

Witnesses:
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