

P. KELLER.
GAS REGULATING DEVICE.
APPLICATION FILED JUNE 14, 1912.

1,063,933.

Patented June 3, 1913.

Fig. 1.

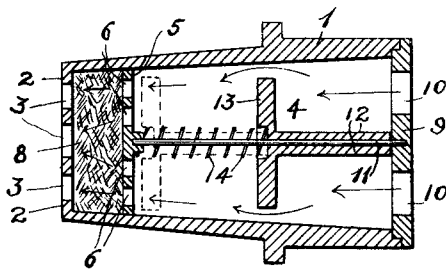


Fig. 2.

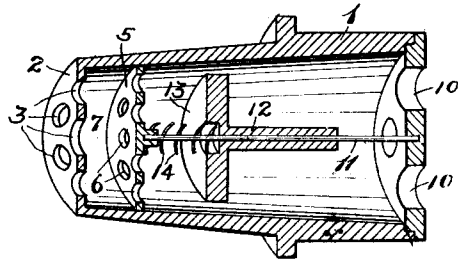
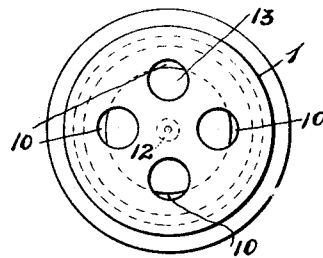


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

PETER KELLER, OF CHICAGO, ILLINOIS

GAS-REGULATING DEVICE.

1,063,933.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed June 14, 1912. Serial No. 703,643.

To all whom it may concern:

Be it known that I, PETER KELLER, a citizen of the United States, residing at the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Gas-Regulating Devices, of which the following is a specification.

My invention relates to devices for regulating the flow of gas from a service pipe and causing the same to be delivered at the point of consumption at a uniform and usually reduced pressure.

By means of my invention I am able to produce a cheap, simple and durable device; one which is effective in operation and of almost universal application in all cases where gas is used for purposes of heating or illumination.

The principles of my invention are illustrated in the drawings, forming a part of this specification, in which—

Figure 1 shows a horizontal section; Fig. 2 is a similar section in perspective, and Fig. 3 is an elevation of the inlet end.

Further describing my invention with reference to the drawings: 1 represents the side walls, and 2 the outlet end of an outer casing or shell. The outlet end consists of a plate, preferably integral with the side walls and has a plurality of openings 3. The valve chamber 4 is in the form of a truncated cone, having its smaller diameter adjacent to the outlet end, and is formed by the converging walls of the casing. A partition 5, having openings 6 is placed in the small end of said chamber. It is of such size that, when placed in position as shown, it will be spaced from the outlet end, leaving a packing chamber 7 which should be filled with shavings 8 of steel or other metal. The inlet end of the casing is closed by a plate 9 having inlet openings 10, to the chamber 4. There is a central depression in the plate 9 and also in the partition 5 within which are received the ends of a guide rod 11, the same being practically on the longitudinal axis of the device. Mounted on the guide run is a valve having a stem 12 and a head 13 placed transversely of the valve chamber. Between the said valve and partition 5 is interposed a spring 14 adapted to hold the extreme end of the valve stem 12 in contact with the plate 9. The head should be circular, and it will be

seen that an annular opening will be formed between the periphery thereof and the inner walls of the gas chamber, and that such annular opening will vary in size according to the position assumed by the valve on the guide rod 9.

Upon mounting the described device in such a manner that it is connected with the service pipe at the large or inlet end and that the small end will be connected with the stove, illuminating apparatus or system of piping, the flow of gas takes place in the direction of the arrow, passing around the valve head 13 and flowing through the openings 6 and 3 to the point desired. Additional pressure, causing a more rapid flow of gas through the annular opening causes the valve to advance with the gas current against the resistance of the spring 14, thereby reducing the annular space between the valve head and the inside of the casing. The flow of gas will be checked until the pressure thereof in the rear of the valve head decreases, allowing the spring to force the valve proportionally back. The strength of the spring should be properly proportioned to the desired pressure and to the weight of the valve which should be very light and preferably made of aluminum. This make a very sensitive regulator and a complete and positive regulation will be attained.

It will further be noted that the device can be placed and in operation at any angle, requiring therefor slight modification or none at all. The steel shavings placed in the packing chamber 7 are very efficient in aiding the action of the valve and any otherwise slight variation in pressure is completely absorbed. This material is peculiarly adapted for the purpose as it does not mat or lose its elasticity, is practically indestructible, keeping in its original condition as placed for an indefinite time.

I claim:

1. In a gas regulating device, a casing having a valve chamber uniformly tapered from the inlet end to the outlet end, a guide rod secured longitudinally of said chamber, a valve within the chamber slidable on said rod, and means for resisting the motion of said valve toward the outlet end of the casing.

2. In a gas regulating device, a casing having a valve chamber uniformly tapered

from the inlet end to the outlet end, a guide rod secured in the longitudinal axis of said chamber, a valve within the chamber slidable on said rod, and means for resisting the motion of said valve toward the outlet end of the casing.

3. In a gas regulating device, a casing having a valve chamber uniformly tapered from the inlet end to the outlet end, a perforated partition placed transversely of said chamber, a guide rod placed longitudinally in said chamber and supported at one end on said partition, means for supporting said rod at the inlet end of said chamber, a valve slidably mounted on said rod, and a spring interposed between said valve and said transverse partition.

4. In a gas regulating device, a casing having a valve chamber uniformly tapered from the inlet end to the outlet end, a perforated partition placed transversely in said chamber, a perforated plate at the inlet end, a guide rod secured between said plates in the longitudinal axis of the casing, a valve slidable on said guide rod, and elastic means

for causing said valve to seek inlet end of the casing.

5. In a gas regulating device, a casing having a chamber uniformly decreasing in size in the direction of the gas flow, a valve head placed transversely of said chamber, a stationary guideway upon which said valve head is slidably mounted, and means for causing said member normally to seek the inlet opening.

6. In a gas regulating device, a casing having a chamber uniformly decreasing in size in the direction of the gas flow, and a symmetrically formed valve head slidably mounted in said chamber and adapted normally to seek the inlet opening and a guideway for said head to keep the same in axial alinement with the said chamber.

In witness whereof, I have hereunto subscribed my name this 12th day of June 1912, in the presence of two subscribing witnesses.

PETER KELLER.

Witnesses:

C. K. CHAMBERLAIN,
A. S. PHILLIPS.