

W.D. Parrish,

Gas Meter.

No 38,499.

Patented May 12, 1863.

Fig. 1.

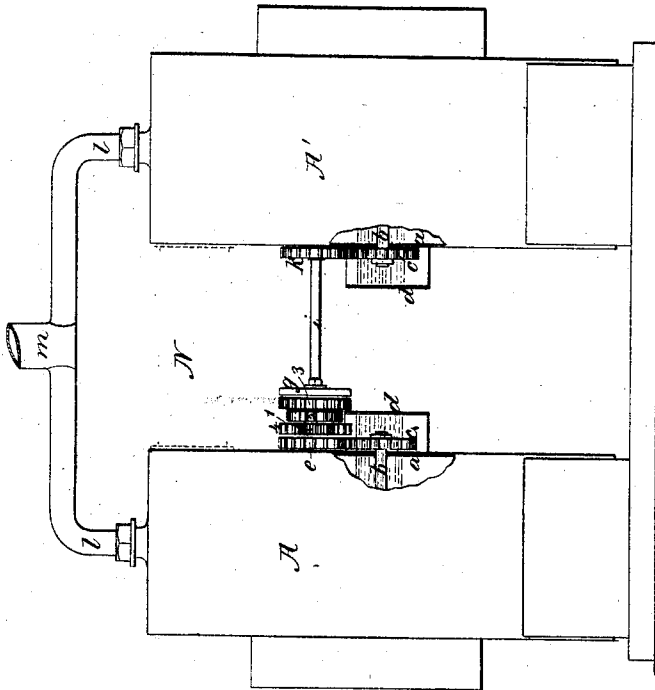


Fig. 2.

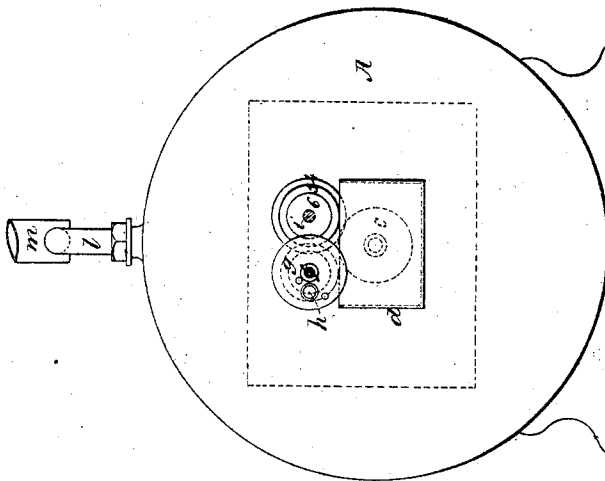
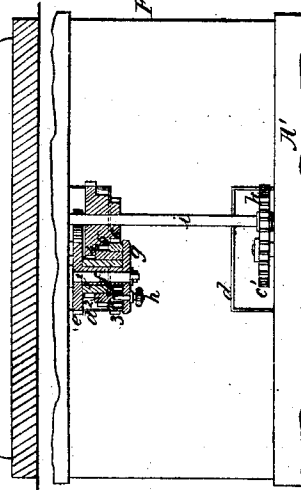


Fig. 3.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN APPARATUS FOR MIXING GASES.

Specification forming part of Letters Patent No. 38,499, dated May 12, 1863.

To all whom it may concern:

Be it known that I, WILLIAM D. PARRISH, of the city of Philadelphia, and State of Pennsylvania, have invented a new and Improved Mode of Mixing Gases in Variable Proportions; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, and to the figures and letters of reference marked thereon.

The nature of my invention consists in combining two ordinary meters or apparatus, of whatever construction, for measuring gases, in such a manner that the operation of one will transmit a positive motion to the other, the devices employed for transmitting this motion being further so arranged that the relative speed of the two instruments and the quantity of gas measured by either of them may be varied and adjusted to any desired proportion.

The object which my invention is designed to accomplish, and for which it has by practical tests been found entirely efficient and satisfactory, consists in permitting gases of different consistencies to be intermixed in such relative proportions as to produce a gas which will give the most satisfactory results in regard to its lighting properties and economy in consumption.

My invention also serves to dilute the heavy rich gas obtained from petroleum or other substances with any proportion of atmospheric air that may be most serviceable to produce the above result, such gases being in their pure undiluted state too rich for economical consumption and liable to smoke in burning. When only one of the two meters is actuated by the pressure and flow of gas while the other is measuring a proportionate quantity of air, then the pressure of the gas in the former becomes the propelling power of both meters. This power may, however, be increased by the application of any most convenient mechanical force to the connecting machinery, which force may be exerted by a light water-wheel, or by weights, &c.

In order that my said invention may be fully understood, I will now proceed more particularly to describe the same, reference being had to the accompanying drawings, in which the same letters of reference allude to similar

parts throughout the several views, and in which—

Figure 1 is an elevation of two meters supplied with the mechanism for my improved mode of adjusting the relative quantities measured by the instruments. Fig. 2 is a transverse section, and Fig. 3 is a sectional plan, of the connecting machinery.

A and A' are meters of the class termed "wet meters," of the ordinary construction. They are placed back to back, with sufficient space between them for the introduction and management of the connecting machinery. The axles or shafts *b b* of the inside drums of the meters pass through the outer casings, *a a*, of the meters, (see Fig. 1,) and are provided with spur-wheels *c c'*.

In order to avoid the friction of stuffing-box journals, both meters have cases *d d* attached to them, surrounding the said wheels and extending above the water-level of the meters. The wheels are thus made to revolve in the water contained in these casings, which communicates and always remains on a common level with the water in the interior of the instrument and effectually prevents any leakage of gas through the bearings of the shaft. A spur-wheel, *e*, gearing with the wheel *c*, revolves on a stud, *f*, and has at the outer end of its long sleeve-bearing attached a disk, *g*, the intervening space being occupied by three wheels, 1, 2, and 3, of various diameters. These wheels are so fitted that each one is independent of the others in its movements, and that either one may be attached to the disk *g* by means of a pin, *h*, (see Fig. 3,) while the others remain idle.

i is a shaft extending across the whole space between the meters, and having its bearings in boxes attached to the exterior of the latter. This shaft is at one end provided with a wheel, *k*, gearing with the wheel *c'*, and has upon its other end the wheels 4, 5, and 6, of such relative diameters as to bring them in gear with the wheels 1 2 3. It will at once be evident that with the above combination of wheels the proportion of speed of the two meters may be subjected to three variations by simply changing the position of pin *h*, so as to throw either one of the wheels 1, 2, and 3 into action. It will also be seen that by the introduction of more wheels the number of variations in

the relative capacities of the two meters may be increased to any desired extent.

l l are the ordinary delivery-pipes of the two meters, which pipes are at *m* united into one pipe, which must be at least of equal capacity to their combined areas, and supplies the mixed gas to the burners. A modification of this method of uniting the meters at the top is represented at Fig. 1 in red lines. It consists in a pipe or drum, *N*, connecting directly the upper ends of the two meters containing the registered gas. With this arrangement one of the outlets suffices to deliver the mixed gas from either of the meters through a single pipe.

Having thus described my invention, and the manner in which the same is used, I wish to be understood as not desiring to confine myself to the described mechanical construction

of the adjustable connecting machinery, as the same may be modified or equivalents substituted without impairing my invention; but

What I claim, and desire to secure by Letters Patent, is—

The described mode of mixing gases in variable proportions, consisting in the employment of two meters of any ordinary construction for measuring gases, the said meters being so connected by the described mechanism, or any equivalent thereto, that the motion thereby transmitted and the relative quantities measured by the meters can be adjusted substantially in the manner and for the purpose herein set forth.

WM. D. PARRISH.

Witnesses:

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