

S. NOWLAN.
Manufacture of Gas.

No. 25,275.

Patented Aug. 30, 1859.

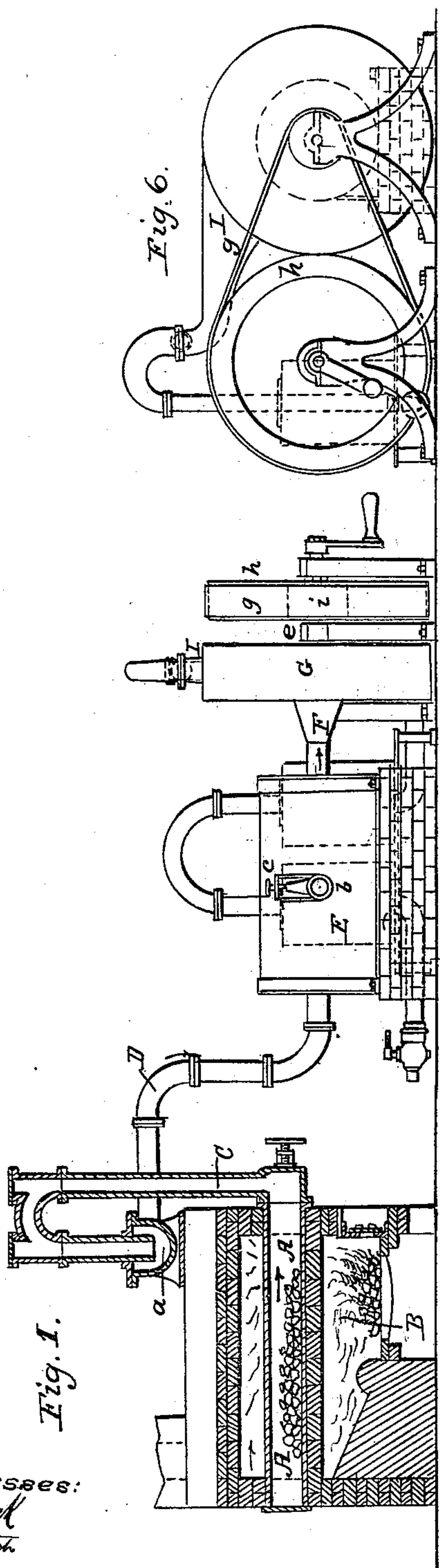


Fig. 1.

Witnesses:
J. P. Clark
L. Galusha

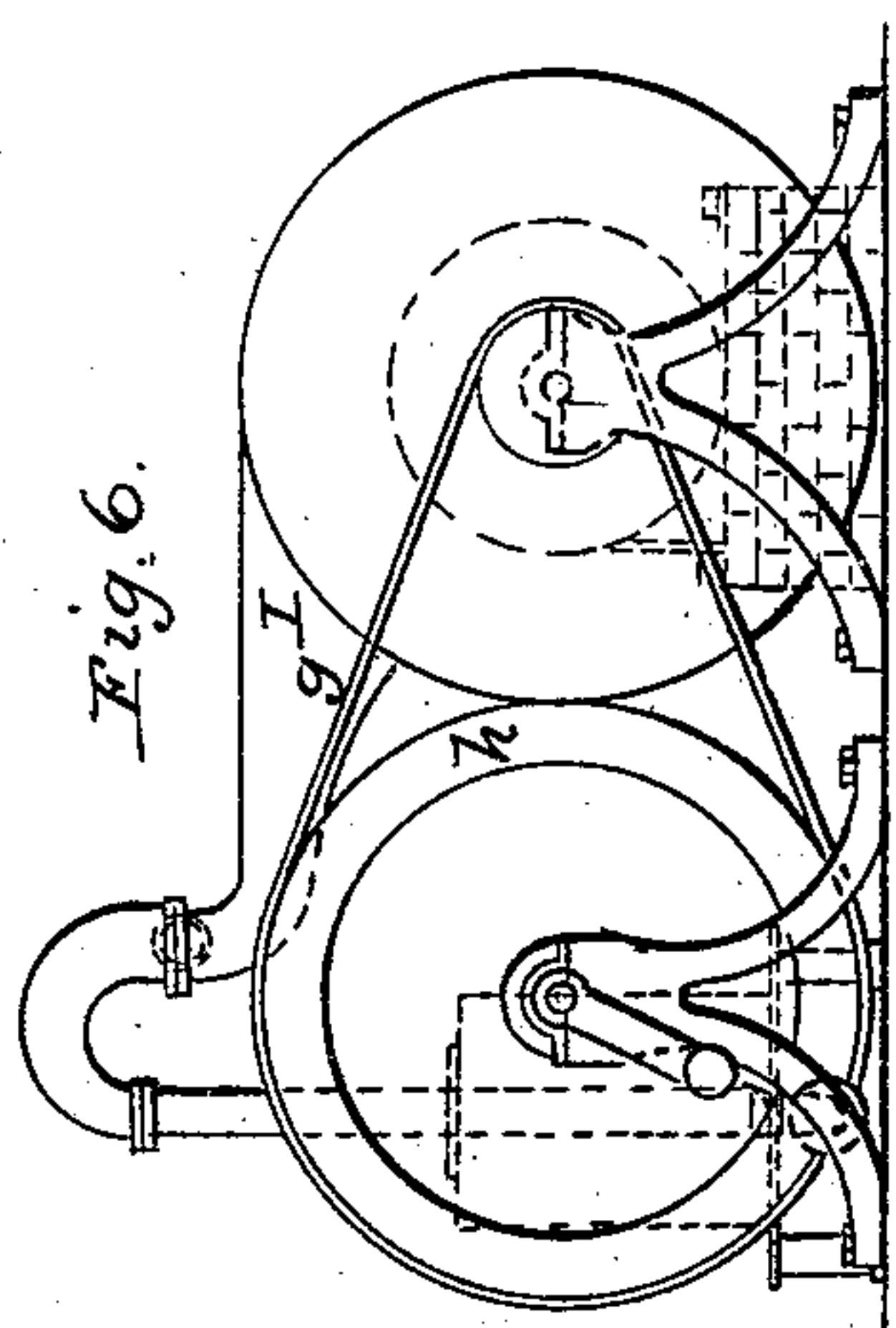


Fig. 6.

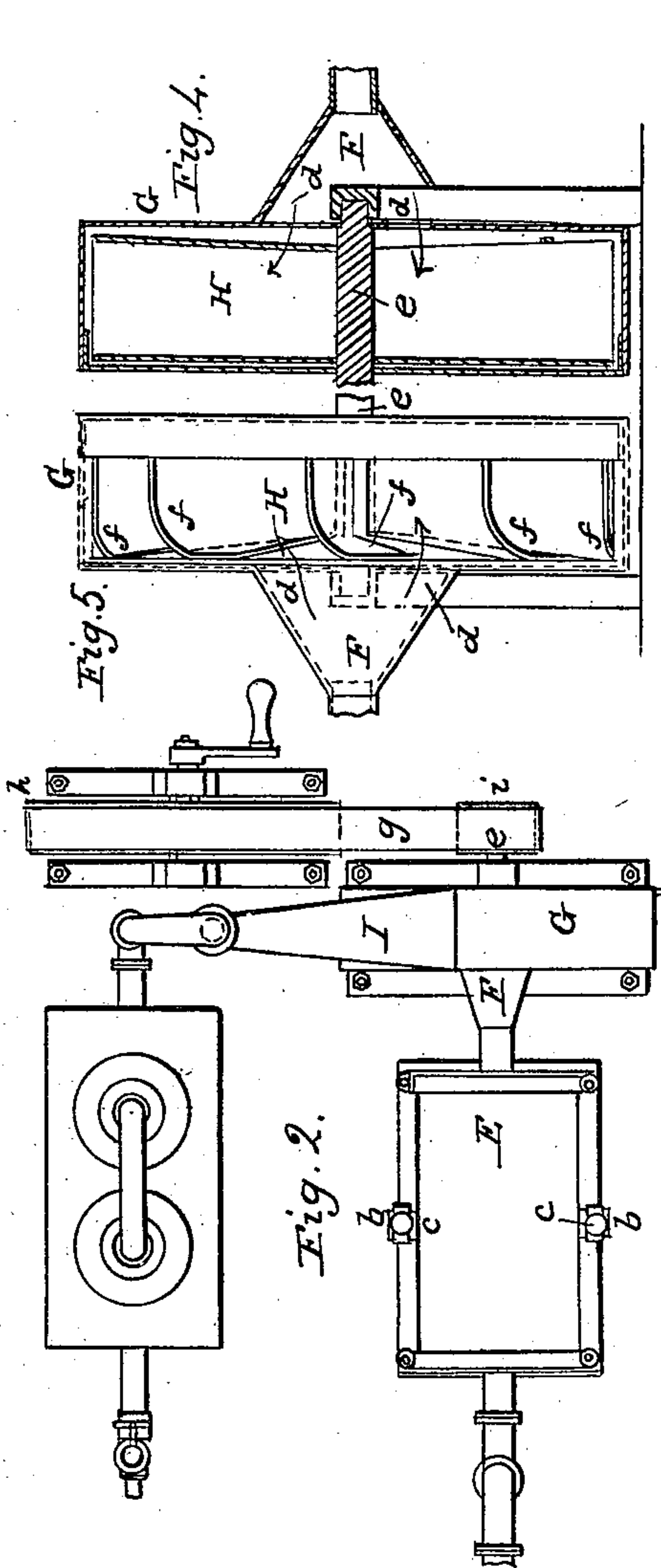
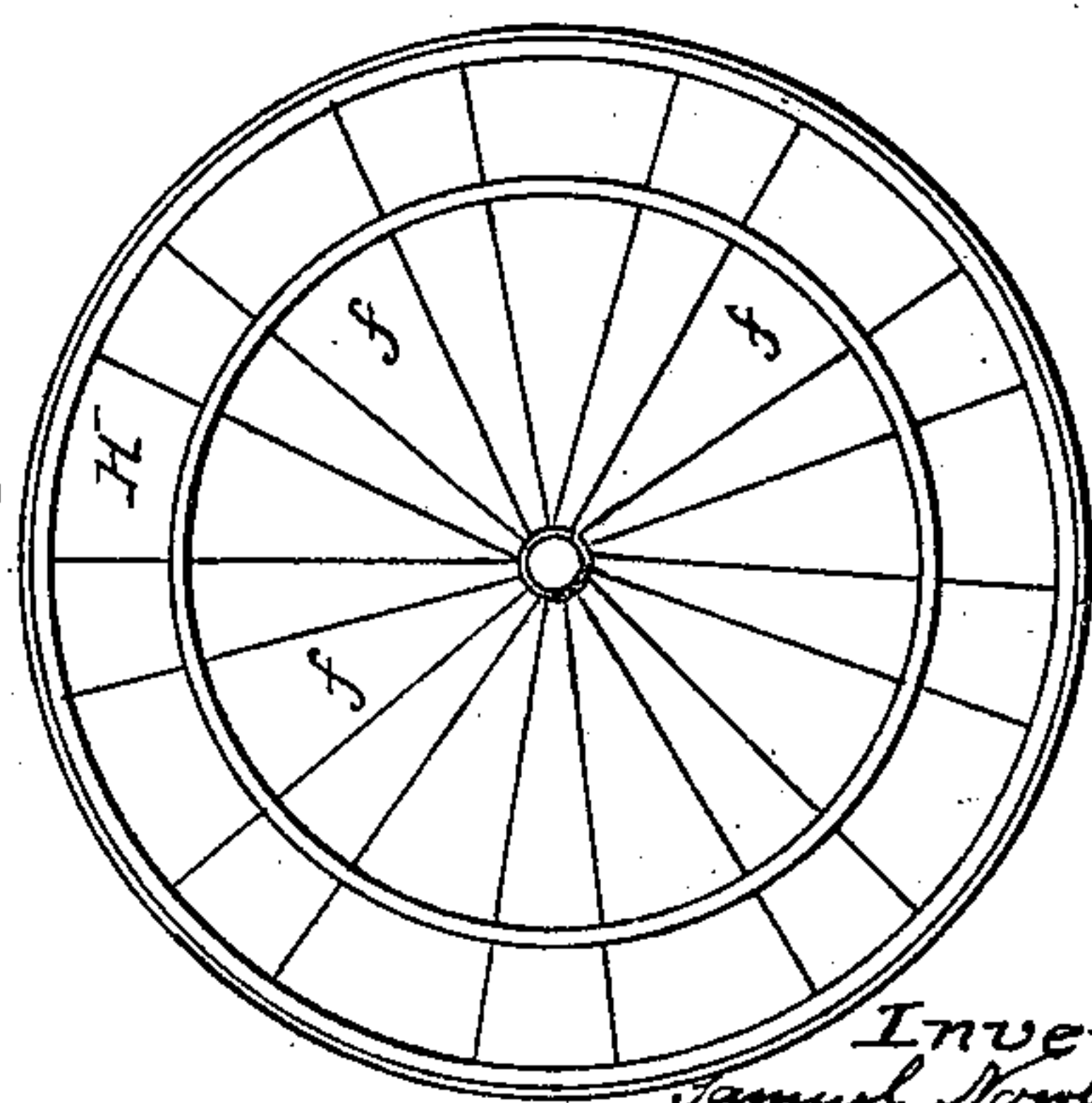


Fig. 3.

Fig. 2.

Fig. 5.

Fig. 4.



Inventor:
Samuel Nowlan

UNITED STATES PATENT OFFICE.

SAMUEL NOWLAN, OF NEW YORK, N. Y.

APPARATUS FOR MANUFACTURING ILLUMINATING-GAS.

Specification of Letters Patent No. 25,275, dated August 30, 1859.

To all whom it may concern:

Be it known that I, SAMUEL NOWLAN, of New York, in the county and State of New York, have invented a new and useful Improvement in the Manufacture of Gas for Illuminating or other Purposes; and I do hereby declare the following to be a full and clear description thereof, reference being had to the accompanying drawing, which forms part of this specification and in which—

Figure 1, represents a sectional elevation of a gas generating apparatus embracing my improvement. Fig. 2 a plan view of the same in part and Figs. 3, 4, 5 and 6 face view edge view and transverse section of a rotary exhaust device illustrative of my improvement.

In the manufacture of coal or other gas requiring prior to its use condensation, purifying and passing into and out from the gasometer under a given pressure in order to impel the gas through the pipes and to communicate to the gas in the act of burning such uniform pressure as may secure a steady and unflickering flame, it is usually necessary to heat the retort in which the gas is formed to a much higher degree than is required for the mere production of the gas, in order that a sufficient pressure may be induced to cause the gas to flow with the requisite force or rapidity through the condenser, purifier and various pipes or valve apparatus intercepting its passage through and from the gasometer. Such excessive heating of the retort is on many accounts objectionable. It is destructive of the retorts by causing it to be rapidly burned out. It increases the risk of explosion by the excess of pressure produced; and is extravagant as a process inasmuch as more fuel is consumed in heating the retort than otherwise needs be, and the gas evolved by the decomposition of the coal in the retort and passed off at an excessive pressure, deposits, in afterward being cooled and purified in its passage through the hydraulic main condenser and purifier, more tar and other secondary products and impure gases admixed with the carbureted hydrogen, than would have been the case, had the gas been passed from the retort at a lower pressure, or than is desirable in point of economy.

My improvement has for its object the removal of these objections by drawing off in a novel and advantageous manner, the gas from the retort at a comparatively low

temperature and pressure, and as fast as evolved, and by the same means expelling the gas so drawn off or exhausted and urging it with all necessary force to and through the condenser and other intermediate apparatus into the gasometer. By such means I dispense with the excessive heating of the retort, economize production and do away with the many objections above referred to.

To explain this my improvement I now refer to the accompanying drawing wherein A represents a gas retort and B its furnace; C the gas escape terminating in a dip-pipe *a*; and D the after transfer pipe or main to convey the gas to a receiver E, this receiver E may serve for numerous retorts to be in communication with by or through branches, *b*, which may be provided with valves *c*, so as to shut off communication with any one or more of the retorts when desired; F is a funnel shaped discharge to the receiver E. At its larger and outer end it is made to communicate, by a number of eccentric or other openings *d* with a cylindrical chamber G, at or about the center of the latter. Within this chamber G, I hang, by a shaft *e*, and cause to rotate a wheel or disk H, formed on its inner side or face with a series of radial or other cut off or overlapping buckets or vans *f*, *f*, so arranged in relation to the outlets *d*, from the funnel discharge F, of the receiver as, by the rotation of said wheel in a suitable direction, the gas is exhausted from the receiver and cut off as exhausted by the passage of the fronts or side edges of the buckets *f*, past the outlets *d* of the funnel, and the gas so received and exhausted by the wheel afterward expelled by the centrifugal action of the wheel from the wheel chamber along and through a pipe I at or near its periphery to the condenser, from whence the gas passes to the purifier and so on to the gasometer. In this way is the pressure of gas reduced in the retort and a rotary action made available in the most advantageous manner to the passage of the gas at a comparatively low pressure through the various intermediate devices to and into the gasometer.

Motion may be communicated to the wheel H by strap *g* from a pulley *h* arranged to pass around the pulley *i* on the wheel shaft *e*; or in any suitable manner, and by the application of any desired or convenient driving power. The speed of the wheel H will of course be varied to suit requirements.

Having thus described my improvement what I claim as new and useful and desire to secure by Letters Patent is

5 The gas exhaust and expelling wheel, interposed between the retort and the condenser, constructed and arranged so as to operate substantially in the manner and for the purposes specified.

In testimony whereof I have signed my name to this specification before two sub- 10 scribing witnesses.

SAMUEL NOWLAN.

Witnesses:

A. POLLAK,
EDW. F. BROWN.