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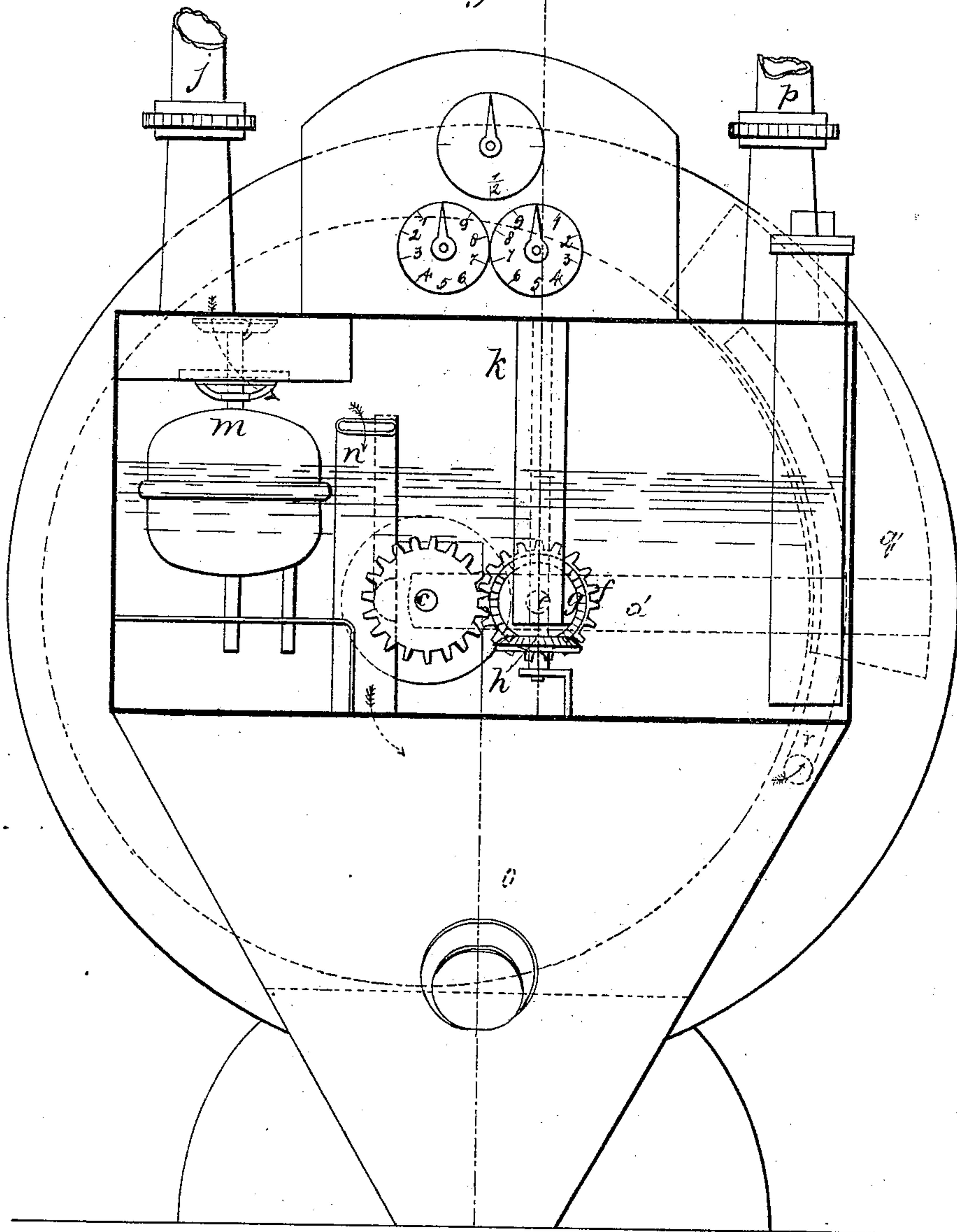
H. H. & J. F. G. Kromschroeder,

Gas Meter,

N^o 40,266.

Patented Oct. 13, 1863.

Fig. 1.



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Geo. Pitt.

Inventor;
H. H. Kromschroeder
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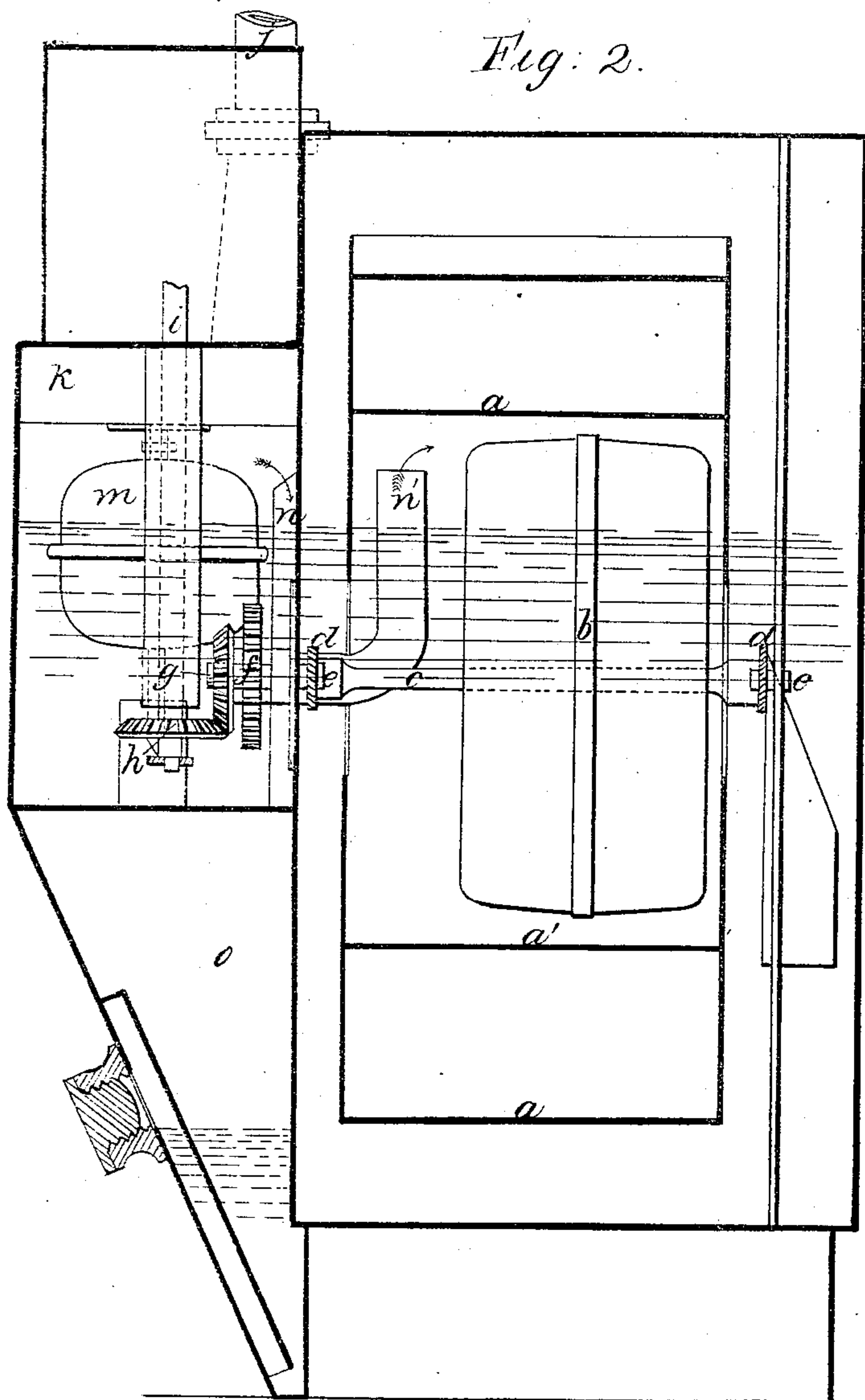
H. H. & J. F. G. Kromschroeder,

Gas Meter,

No. 40,266.

Patented Oct. 13, 1863.

Fig. 2.



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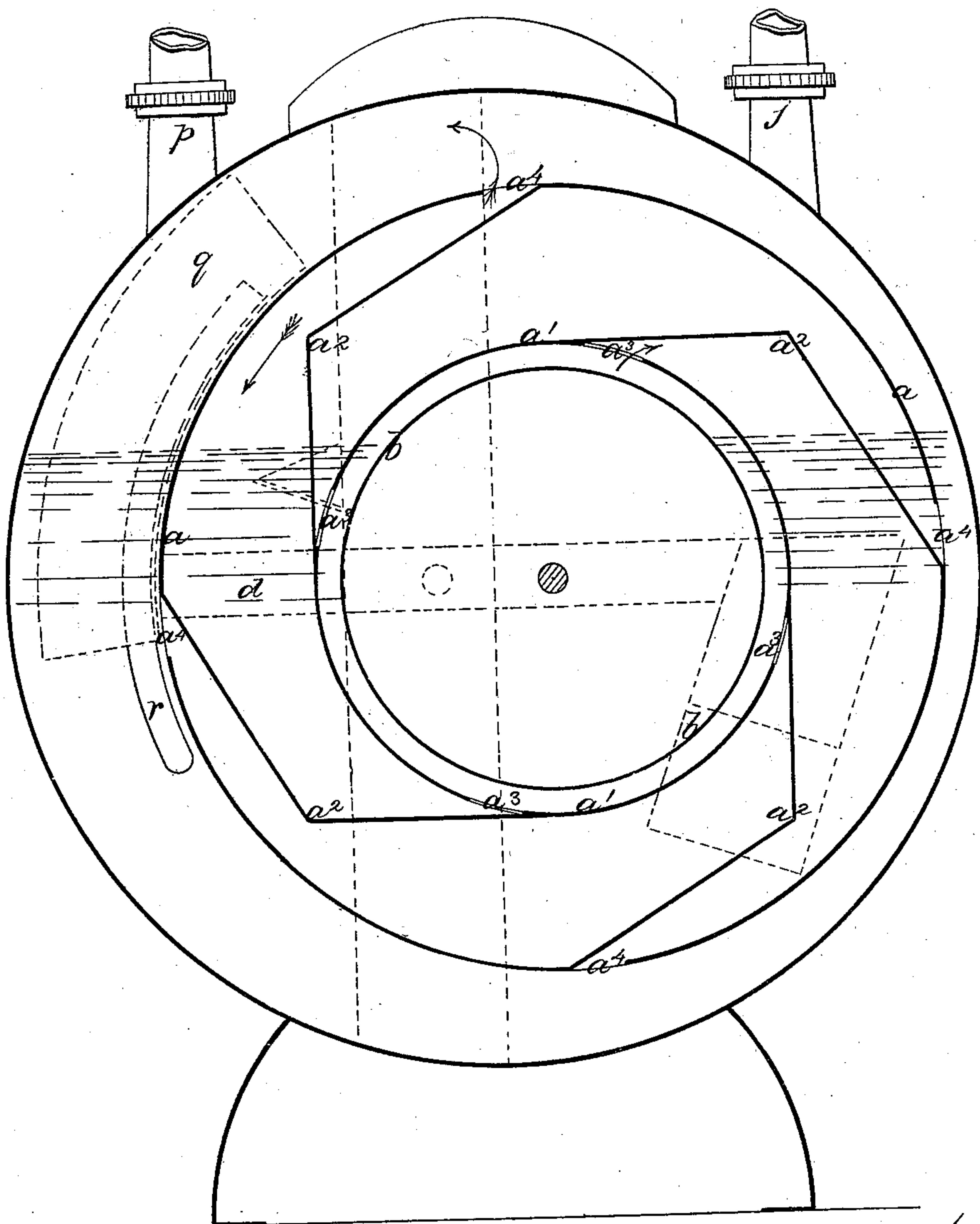
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N^o 40,266.

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Fig. 3.



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UNITED STATES PATENT OFFICE.

HENRY H. KROMSCHROEDER AND JOHN F. G. KROMSCHROEDER, OF
PRINCESS TERRACE, REGENT'S PARK, ENGLAND.

IMPROVEMENT IN GAS-METERS.

Specification forming part of Letters Patent No. 40,266, dated October 13, 1863.

To all whom it may concern:

Be it known that we, HENRY HERMAN KROMSCHROEDER and JOHN FREDERICK GUSTAV KROMSCHROEDER, both of Princess Terrace, Regent's Park, in the county of Middlesex, England, subjects of the King of Hanover, have invented or discovered new and useful Improvements in the Manufacture of Gas-Meters; and we, the said HENRY HERMAN KROMSCHROEDER and JOHN FREDERICK GUSTAV KROMSCHROEDER, do hereby declare the nature of the said invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement thereof—that is to say:

This invention has for its object improvements in the manufacture of gas-meters.

In constructing the measuring-drum for a gas-meter it is formed of two concentric cylinders, and the annular space between them is divided into a series of similar measuring-compartments by partitions formed as hereinafter explained. It is preferred that the annular space should be divided into four measuring-compartments, but this is not essential. The water-line in the meter is somewhat below the upper part of the inner cylinder, and gas is admitted above the water-line into the interior of the inner cylinder. There is a passage formed through the inner cylinder into each measuring-compartment, and such openings are immediately below the points where the partitions join the inner cylinder. In the outer cylinder there is an outlet-passage formed above each partition for the passage of the gas out of the compartments when the lowest end of the compartment comes above the water-line in the meter. Interior of the central cylinder there is applied or formed a float to support or buoy up the measuring-drum, but to which, separately, no claim is made.

Having thus stated the nature of our said invention, we will proceed to describe more fully the manner of performing the same.

In the drawings, Figure 1 shows an elevation of a gas-meter, partly in section; Fig. 2, a transverse section, and Fig. 3 a section through the measuring-drum.

In each of these figures the same letters of reference are used to indicate the same parts.

a a is the measuring-drum, which is constructed of two cylinders, the outer one, *a a*, and the inner one, *a' a'*. The annular space between these two cylinders is divided into four similar measuring-chambers by angular partitions *a² a²*. The inner ends of the partitions *a² a²* are connected to the inner cylinder, *a'*. The partitions *a² a²*, from the point where they are connected to the inner cylinder, proceed in a tangential or nearly tangential direction toward the outer cylinder, and then such partitions are bent to an angle, and then their outer edges or ends are connected with the outer cylinder, *a a*, thus producing peculiarly-formed angular measuring-chambers around the inner cylinder, *a' a'*, as will readily be understood on examining Fig. 3 of the drawings. Interior of the cylinder *a' a'* is a hollow float, *b b*, which is mounted on the same axis as the measuring-drum, and the measuring-drum is attached to such axis, *c*, by arms or spokes. The axis *c* of the measuring-drum is carried by a lever-frame, *d d*, which is supported by fixed necks or axes *e e*. On the axis *c* of the measuring-drum is a cog-wheel, which takes into and drives the cog-wheel *f*, which revolves on one of the fixed necks or axes *e e* of the lever-frame *d d*. To the cog wheel *f* is fixed a bevel-toothed wheel, *g*, which takes into and drives a bevel-toothed wheel, *h*, fixed on the axis *i* of the counting apparatus, by which, notwithstanding the measuring-drum moving, the constant driving of the axis *i* of the counting apparatus is insured.

j is the inlet or supply to the meter, through which the gas passes into the chamber *k k* when the valve *l* is open, which it will be so long as the float *m* is supported by water in the chamber *k*. The gas passes from the chamber *k* through the pipe *n* into the chamber *o*, and also from the pipe *n* by a bent branch pipe, *n'*, into the interior of the inner cylinder above the level of the water therein, and thence through the openings *a³* into the measuring-chambers, from which the gas flows out at the openings *a⁴* as they come above the water in the compartment of the meter in which the measuring-drum works, and thence by the outlet-pipe *p*.

The action of the meter is regulated by means of an inverted vessel, *q*, which is at

one end of the lever-frame $d d$, and into which gas is conducted by the pipe r from the lower chamber, o , so that the gas in the inverted vessel q is at the same pressure as it is in the supply-chamber. The other end of the lever-frame is weighted and regulated or adjusted as heretofore when a similar frame and inverted vessel have been used.

Having thus described a gas-meter embodying our improvements, what we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination, in a gas-meter, of an annular measuring-drum with an internal float to buoy up the drum in the liquid with which the meter is filled, substantially as described.

2. The combination of an annular measuring-drum and float, constituting a floating measuring drum, with a lever-frame connecting the axis of the drum with fixed necks or axes which are in line with the axis of one of the wheels of the counting apparatus, so

that the floating measuring-drum acts uniformly upon the counting apparatus notwithstanding its rise or fall, substantially as described.

3. The combination of an annular measuring drum and float, constituting a floating measuring-drum, with the lever frame and with an adjustable inverted vessel and pipe connected with the supply-chamber, so that the position of the measuring-drum is controlled by the pressure of the gas in the supply-chamber, substantially as described.

4. The angular measuring chambers of the annular measuring-drum, constructed substantially as described.

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