

No. 754,773.

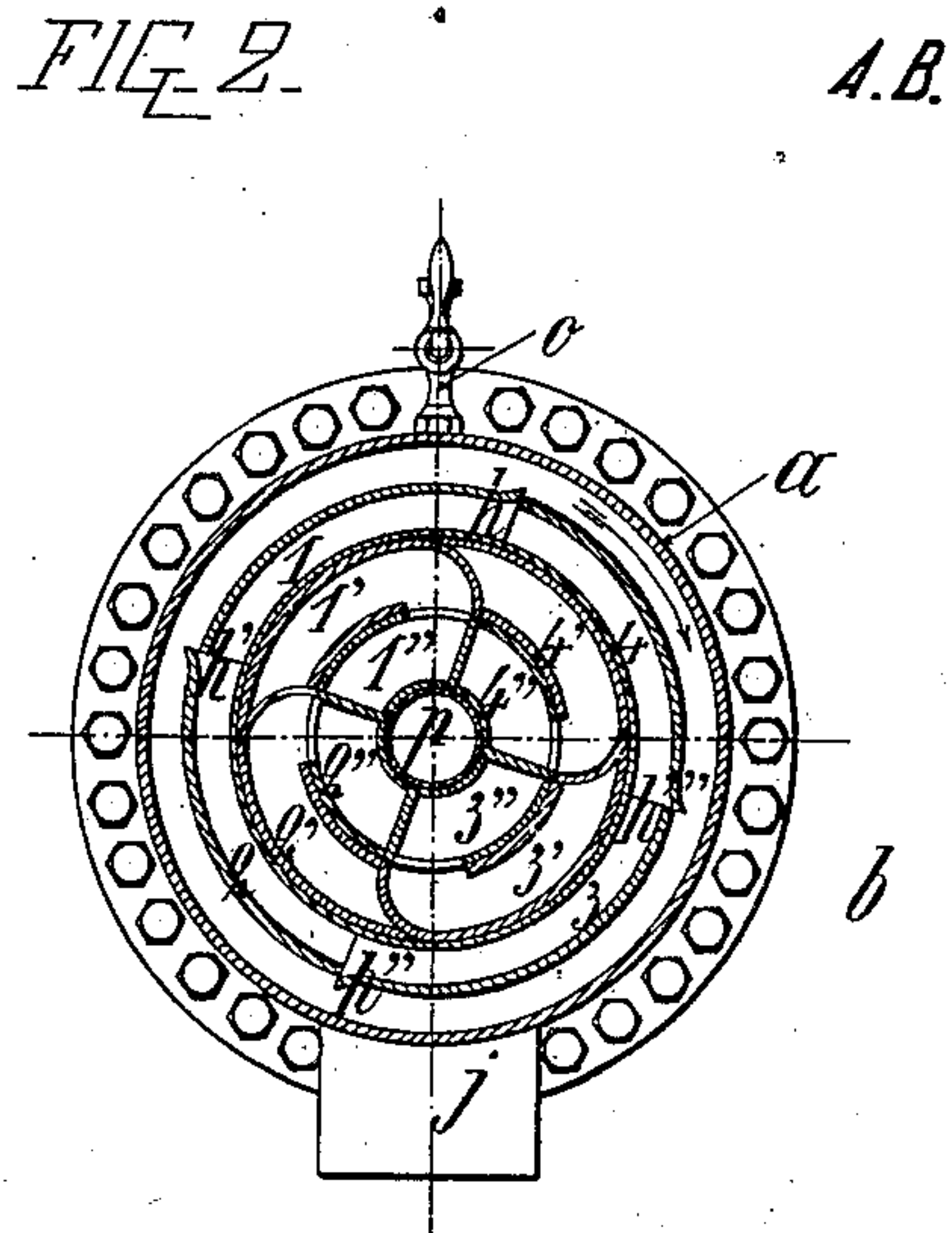
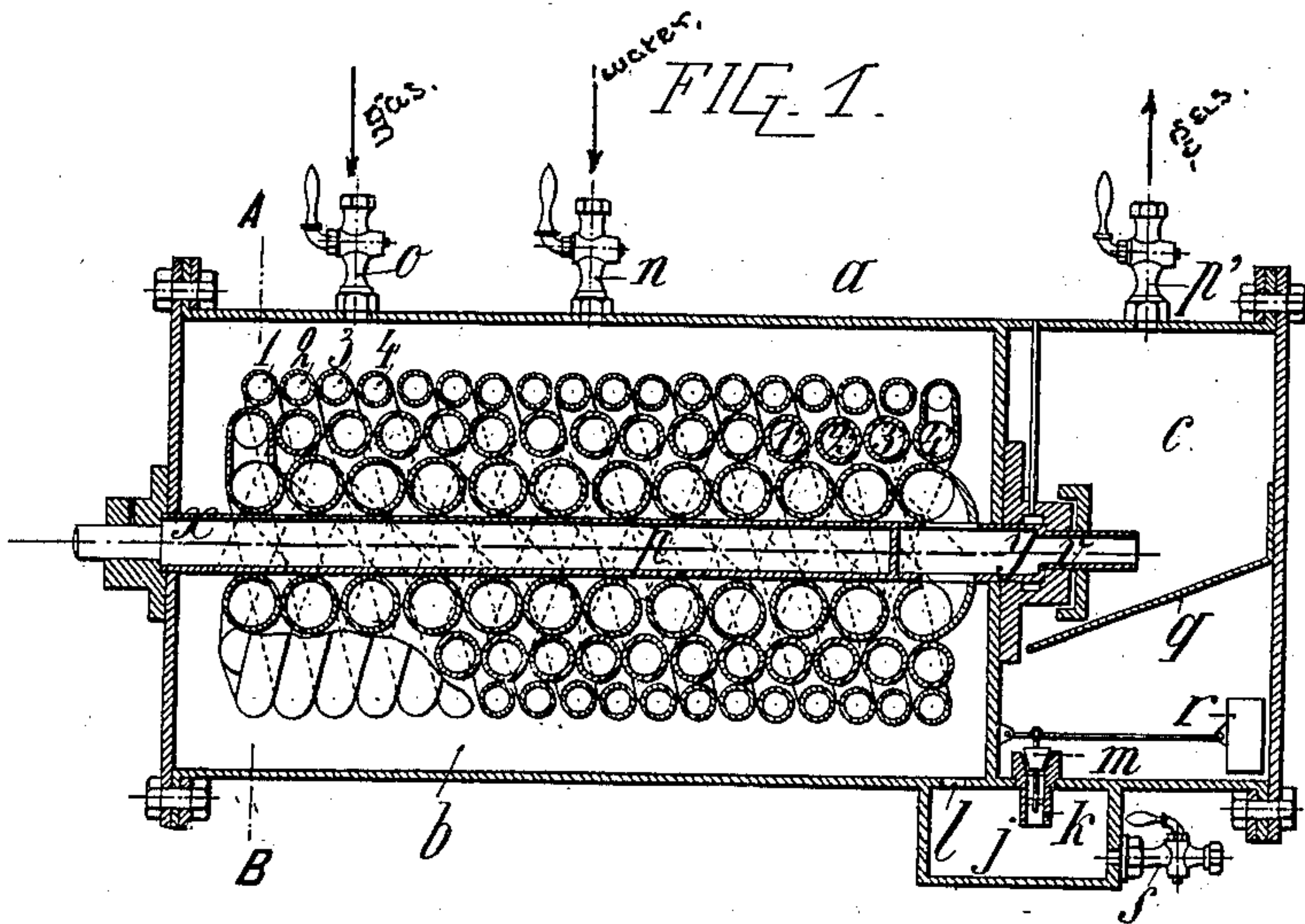
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F. JAS.

APPARATUS FOR THE PURIFICATION OF GAS.

APPLICATION FILED JULY 3, 1903.

NO MODEL.



Witnesses:

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APPARATUS FOR THE PURIFICATION OF GAS.

SPECIFICATION forming part of Letters Patent No. 754,773, dated March 15, 1904.

Application filed July 3, 1903. Serial No. 164,111. (No model.)

To all whom it may concern:

Be it known that I, FRANÇOIS JAS, engineer, a subject of the Queen of the Netherlands, and a resident of Paris, in the Republic of France, have invented new and useful Improvements Relating to Apparatus for the Purification of Gas, which improvements are fully set forth in the following specification.

Coal-gas at the generating works is submitted to physical and chemical purifications which free it in a great measure from its impurities. It, however, still contains when utilized foreign bodies which decrease its illuminating power.

This invention has for its object a device which may be arranged at any convenient point of a coal-gas main—for example, after the meter of a supply branch—and which produces an energetic mixing of the gas with water, removing all impurities which the gas may still contain and which also imparts to the gas a pressure greater than that which it previously had. By the employment of this novel apparatus it is possible to effect an economy of fifty per cent. in the consumption of gas.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section of my improved apparatus, and Fig. 2 represents a vertical transverse section of the same taken on line A B of Fig. 1.

Similar characters of reference indicate corresponding parts.

The apparatus consists, broadly, of a cylinder *a*, closed at its extremities and divided by a partition *b* into two unequal compartments *b* and *c*. The compartment *b*, which is the larger of the two, is traversed by a longitudinal shaft *p*, capable of rotation, and around which are wound four coils 1, 2, 3, and 4, the convolutions of which are arranged side by side in three superposed rows. At the left-hand extremity of the apparatus the four coils 1, 2, 3, and 4 open into the compartment *b*. Their apertures *h h' h'' h'''* are diametrically opposite. Assuming for a moment that the chamber contains water up to a certain level, it will be obvious that the apertures *h h' h'' h'''* will alternately come into contact, owing to their rotation with the shaft *p*, with the water or

with the gas situated above it, which gas enters the apparatus through the socket *o*. Each coil will therefore take up alternately a certain quantity of water and a certain quantity of gas. These fluid and liquid beads or sections will pass through the coils first of all in the outer row from left to right, owing to the inclination of the convolutions, then from right to left in the intermediate row 1', 2', 3', and 4', the convolutions of which are inclined in the inverse direction, and finally in the central row 1'', 2'', 3'', and 4'' from left to right again. The fluid and liquid beads or sections, the pressure of which increases in proportion as they progress through the apparatus, will finally pass into the socket *v*, constituting a hollow portion of the shaft *p* and communicating with the compartment *c*. The movement of the shaft *p* may be produced by means of a motor of any convenient kind driving the shaft either directly or by the intermediary of transmission-gear.

The compartments *b* and *c* may be caused to communicate one with the other at certain times by the intermediary of a chamber *j*, arranged beneath the cylinder, and two holes *k l*, formed in the cylinder-wall. Of these the hole *k* is obturated by a valve *m*, while the hole *l* is free. The hole *k* assures communication between the compartment *c* and the chamber *j*, while the hole *l* places the said chamber in communication with the compartment *b*.

In order to start the apparatus, water is introduced into the compartment *b* through the cock *n*, which may be surmounted by a funnel. When the water reaches the level *xy*, the cock *n* is closed, whereupon the cock *o* for the introduction of gas coming from the meter is opened and the apparatus is placed in movement. The phenomena described above are produced and the purification of the gas is perfect, owing to the extremely vigorous mixing and the gradually-increasing pressure of the gas and the liquid. From the compartment *c* the completely-purified gas proceeds to the utilization appliances through the conduit *p'*. The water charged with the impurities falls upon an inclined plane or plate *q*, from which it flows to the bottom of

the compartment. When this water reaches a certain level, it lifts a float *r*, which produces the opening of the valve *m*, which leaves its seat. The water under the influence of
 5 the pressure existing in *c* passes into the chamber *j*, from which it returns to the compartment *b* through the hole *l*.

Ultimately, owing to the large quantity of impurities contained in the washing-water, it
 10 is desirable to renew it. In order to effect this, a drain-cock *s* on the chamber *j* is opened and the dirty water flows out. The apparatus is again filled up to the level *x y* by means of the cock *n*, as described above.

15 The apparatus represented in the accompanying drawings comprises three rows of coils; but this is not essential, and it should be understood that the dimensions of the apparatus and the number of coils should be propor-
 20 tioned to the quantity of gas consumed by the installation to which this purifying apparatus is adapted.

I claim as new and desire to secure by Letters Patent—

25 1. An apparatus for the purification of gas, consisting of a cylindrical vessel closed at either end and provided with a transverse partition dividing the same into two compart-
 30 ments, a shaft in one of said compartments hollow at one end and journaled in the partition and in one end of the vessel, and a plurality of pipes wound spirally around said shaft and rotatable with the same having their

open ends diametrically the farthest distance from the shaft and their other ends terminat- 35
 ing in the hollow end of the shaft for discharging their contents into the other compartment, substantially as set forth.

2. An apparatus for the purification of gas, consisting of a cylindrical vessel closed at 40
 either end and provided with a transverse partition dividing the same into two compartments, a shaft in one of said compartments hollow at one end and journaled in the parti-
 tion and in one end of the vessel, a plurality 45
 of pipes wound spirally around said shaft and rotatable with the same, having their open ends diametrically the farthest distance from the shaft and their other ends terminating in the hollow end of the shaft for discharging 50
 their contents into the other compartments, an inclined plate in said last-named compartment below the discharge end of the shaft, a
 chamber connecting the compartments for re- 55
 turning the liquid from the last-named compartment to the compartment containing the pipes, and a valve for said chamber, substan-
 tially as set forth.

In testimony whereof I have signed this specification in the presence of two subscrib- 60
 ing witnesses.

FRANÇOIS JAS.

Witnesses:

EMILE LEDRET,
 J. ALLISON BOWEN.