

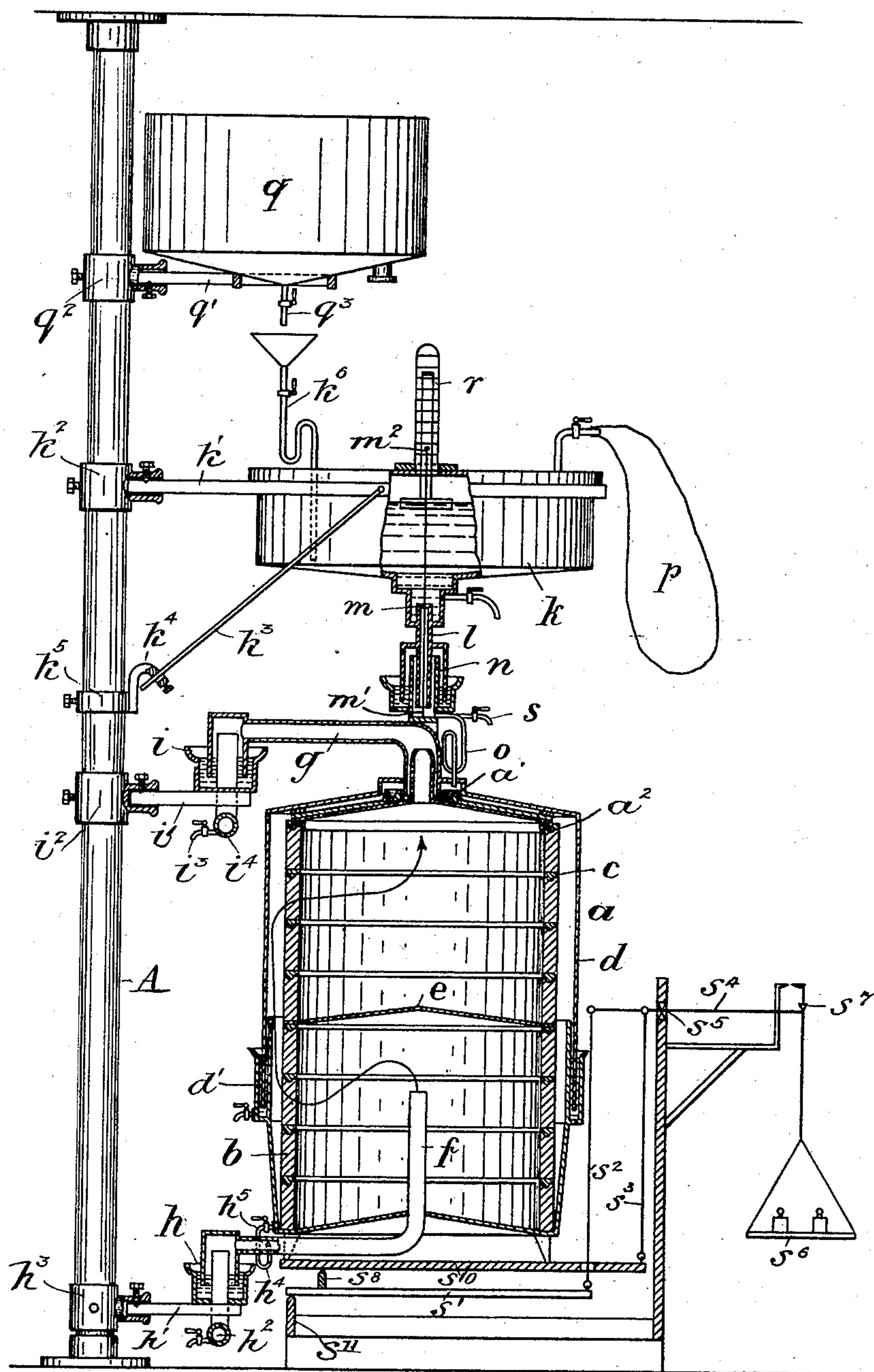
No. 671,052.

Patented Apr. 2, 1901.

F. KELLER KURZ.
CARBURETER.

(Application filed Oct. 5, 1900.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

FRANZ KELLER KURZ, OF LUCERNE, SWITZERLAND.

CARBURETER.

SPECIFICATION forming part of Letters Patent No. 671,052, dated April 2, 1901.

Application filed October 5, 1900. Serial No. 32,129. (No model.)

To all whom it may concern:

Be it known that I, FRANZ KELLER KURZ, a citizen of the Republic of Switzerland, residing at Lucerne, Switzerland, have invented certain new and useful Improvements in Apparatus for Carbureting Gas by the Vapor of Liquid, of which the following is a specification.

This invention relates to an apparatus for carbureting gas with the vapor of an appropriate liquid, particularly applicable to the manufacture of air-gas—that is to say, of a combustible mixture made by pressing air over a porous mass saturated with gasolene or the like. As is known, such a mixture may be used as a substitute for coal-gas.

The essence of the invention resides in the fact that the supply of gasolene is automatically regulated to correspond with the consumption of the gas. The compressed air necessary for working the apparatus is derived either from a holder or from an appropriate blower, which may be set in action at the beginning of the gas consumption and supplies a current of air to the carbureter. In the latter case the whole working may be automatic.

By way of example there is shown in elevation, partly in section, in the accompanying drawing an apparatus constructed according to this invention.

The carbureter *a* is in this instance counterbalanced on an ordinary weigh-bridge. The counterweight mechanism is shown to be composed of a platform *s*¹⁰, supported near one end upon the knife-edge *s*⁸ of a lever *s*¹, which is in turn supported upon knife-edge *s*¹¹. The platform and lever are respectively connected by rods *s*² *s*³ with the scale-beam *s*⁴, supported upon knife-edge *s*⁵ and from which the scale *s*⁶ is suspended at knife-edge *s*⁷. The drawing illustrates only a diagrammatic representation of the counterweight mechanism. The carbureter *a* consists of a number of superimposed rings *b*, of porous material, such as gypsum or clay. Between the contiguous surfaces of these rings is inserted a packing *c*, of fibrous porous material, preferably held in grooves in the surfaces. This porous cylinder is inclosed by a sheath *d*, advantageously made in two parts and divided into two chambers by a transverse

partition *e*, which, however, extends only across the interior of the porous cylinder. The air enters into the interior of the lower compartment of the cylinder through the pipe *f* and passes through the porous wall into the space between the sheath and the cylinder, and thence it again passes through the porous wall into the upper compartment and finally flows out through a pipe *g*. The connection of the pipes *f* and *g* with the fixed parts of the pipe which conducts the air to the apparatus and that which leads away the gas, respectively, are made telescopic with liquid seals *h* *i* in order to allow free movement of the carbureter. The seal *i* is connected to post A by arm *i*¹ and collar *i*². A draw-off cock *i*³ serves to remove any possible accumulation of liquid from the gas-discharge pipe *i*⁴. The seal *h* has the air-pipe *h*² and is connected to the vertical post A by arm *h*¹ and collar *h*³. A small coil *h*⁴, having cock *h*⁵, serves to discharge any possible accumulation of gasolene from the carbureter. The two parts of the carbureter-sheath are also connected by a liquid seal *d*¹.

Vertically above the carbureter is supported a gasolene-tank *k*, adapted to be filled through siphon-tube *k*⁶ and of a capacity sufficient for, say, a two-days' supply. The tank *k* is connected to post A by arm *k*¹ and collar *k*². The arm *k*¹ is, by brace *k*³ and bent arm *k*⁴, connected to a second collar *k*⁵ of post A, so that any vertical displacement of tank *k* is prevented. At the bottom of the tank is a pipe *l*, closed at its upper end by a valve *m* and opening at its lower end in a vessel *n*, supported on the carbureter. The connection between the pipe *l* and this vessel is a water seal. The valve *m* is attached to a wire or rod *m*¹, which at a certain height of the carbureter bears at its lower end on the bottom of the vessel *n*. This vessel is, through pipe *g*, connected to carbureter *a*, and thus rises and falls together with the same. A bent siphon-tube *o* leads the gasolene from the vessel *n* to the carbureter. The height of the column of liquid which remains in this siphon-tube *o* is so chosen that a pressure in the carbureter will not cause gas to flow by way of the vessel *n*. From the tube *o* the gasolene flows into a gutter *a*¹ on the conical cover of the carbureter-cylinder *b*, which gut-

ter, as well as the cover, is coated with porous material, so that the gasolene is equally distributed on all sides. At the edge of the cover the gasolene drops into a gutter a^2 in the top surface of the cylinder-wall and thence is uniformly distributed over the whole surface of the cylinder—a result which is aided by the packing between the rings of which the cylinder is composed.

10 The tank k is closed above and is in communication with a bag p , which receives the gas or vapor expelled when the tank is filled. The filling is effected through a stop-cock funnel from a vessel q , also provided with a
15 cock q^3 and which discharges the gasolene into tank k through tube k^6 . The vessel q is connected to post A by arm q' and collar q^2 . The cover of the tank k also carries a glass tube r , in which is the end of a wire m^2 , carried by the valve m , the position of this end
20 in the tube serving to indicate the position of the valve. A float with an indicator, also extending into the glass tube, shows the level of the liquid in the tank k . The vessel n is
25 provided at its lower part with a draw-off cock s .

The apparatus works as follows: The tank k is first filled with gasolene. There being no weights on the counterbalancing-pan of
30 the weigh-bridge, the carbureter is in its lowest position and the valve-rod m' is out of contact with the bottom of the vessel n , so that the valve m remains closed. By placing weights on the scale-pan the carbureter is
35 raised and the valve m is lifted to a certain extent by the upward pressure of the bottom of vessel n on the valve-rod. Gasolene thereupon flows into the vessel n and thence through siphon o into the gutter a' , lined
40 with porous material. The gasolene overflows the gutter and passes over the porous material which covers the conical cover of the carbureter. At the edge of the cover it falls in drops into the gutter a^2 of the upper-
45 most ring b and descends gradually through the pores of such rings, while the rings c will

cause a uniform distribution of the liquid. In this way the weight of the porous cylinder is increased, so that the carbureter sinks and the valve m closes. By proper adjustment
50 of the weights the amount of gasolene admitted may be regulated to the proper proportion for the air. If it is undesirable that the whole of the gasolene should enter the carbureter, a portion can be drawn off from the
55 vessel n by the cock s . As the air passes through the carbureter and carries away a part of the gasolene the carbureter becomes lighter and is raised until it opens the valve and admits more gasolene. While gas is being
60 produced the apparatus and weights should be in equilibrium, which may be observed on the indicator of the weigh-bridge.

The degree of carbureting may be varied in this apparatus accordingly as illuminating or
65 heating gas is required.

I claim—

1. In a carbureting apparatus, the combination of a counterbalanced porous gasifier, with an air-inlet pipe, a gas-delivery pipe, and
70 a gasolene-tank communicating therewith, and with a valve between the gasolene-tank and the gasifier which is automatically set by the latter, substantially as specified.

2. In a carbureting apparatus, a gasifier
75 composed of a series of porous rings, intervening porous packings, a surrounding jacket, and a partition, combined with an air-inlet pipe entering the lower section of the gasifier, a gas-delivery pipe entering the upper section
80 of the gasifier, a gasolene-tank communicating with the upper section of the gasifier, an intervening valve which is automatically set by the latter, and means for counterbalancing
85 the gasifier, substantially as specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

FRANZ KELLER KURZ.

Witnesses:

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