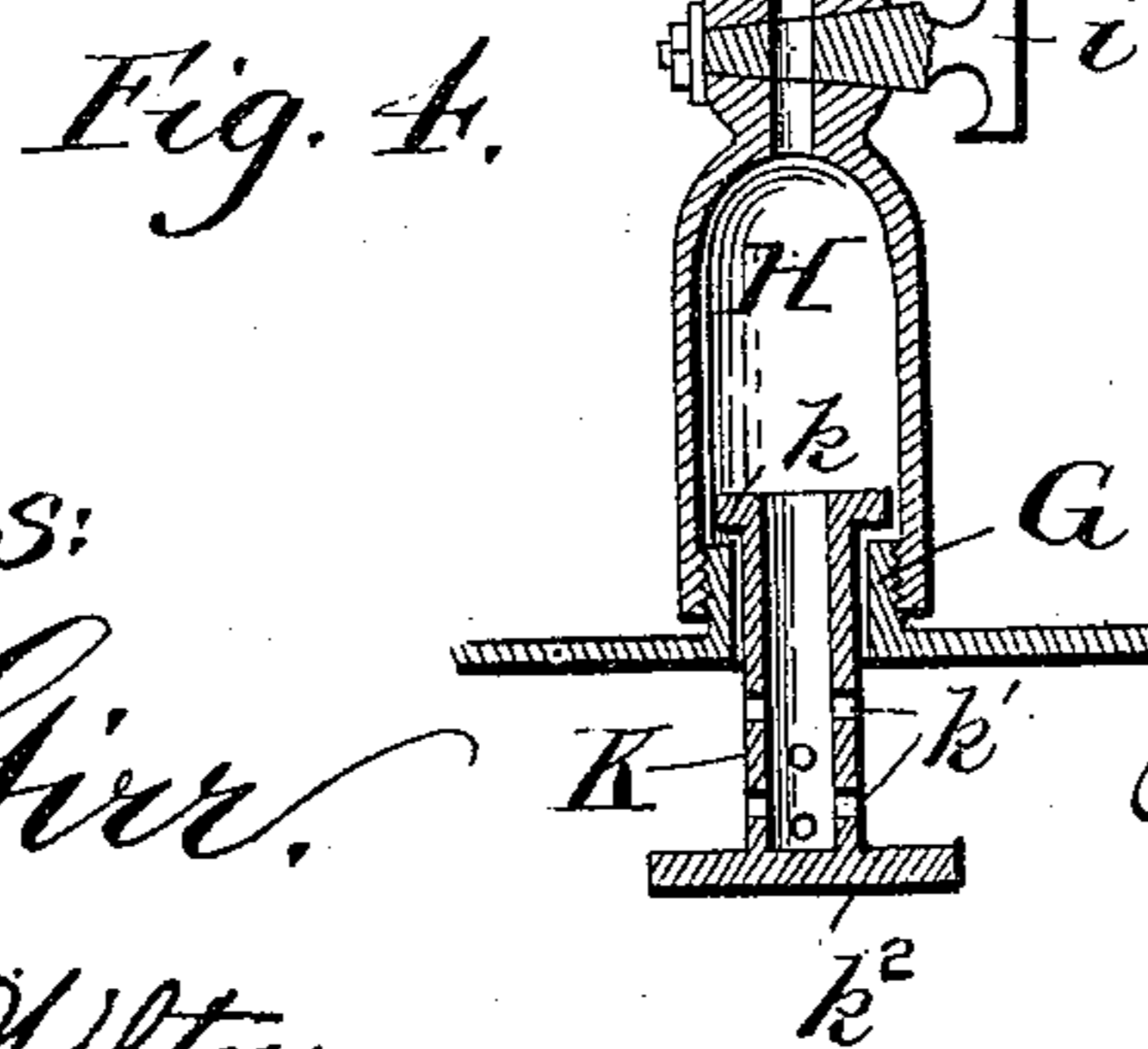
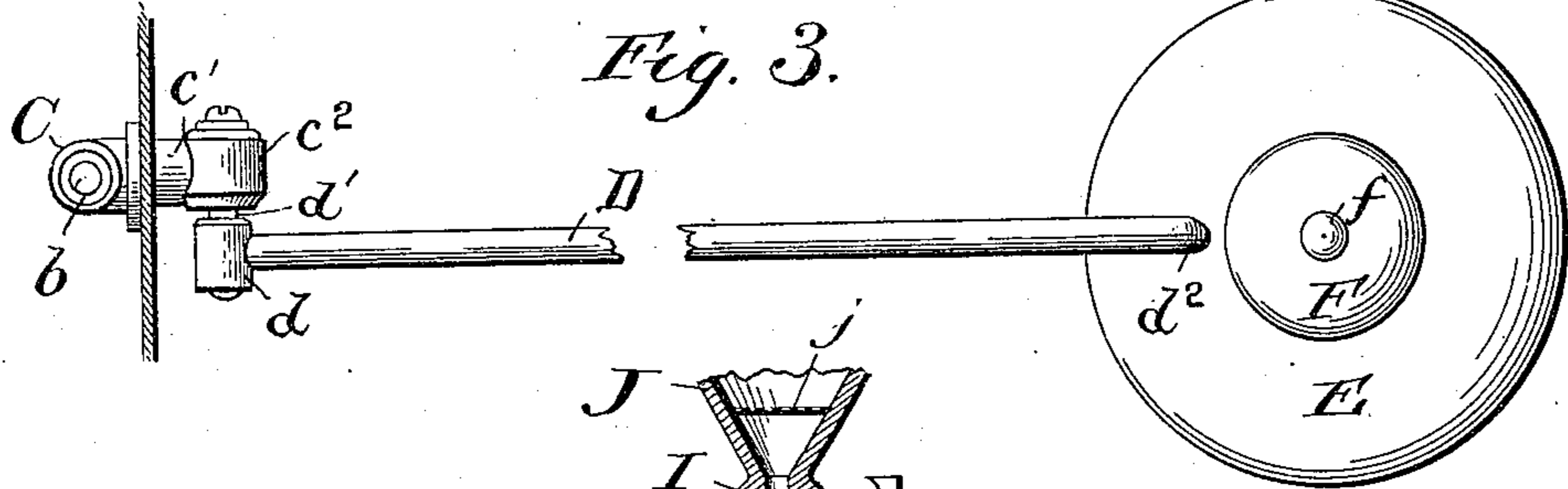
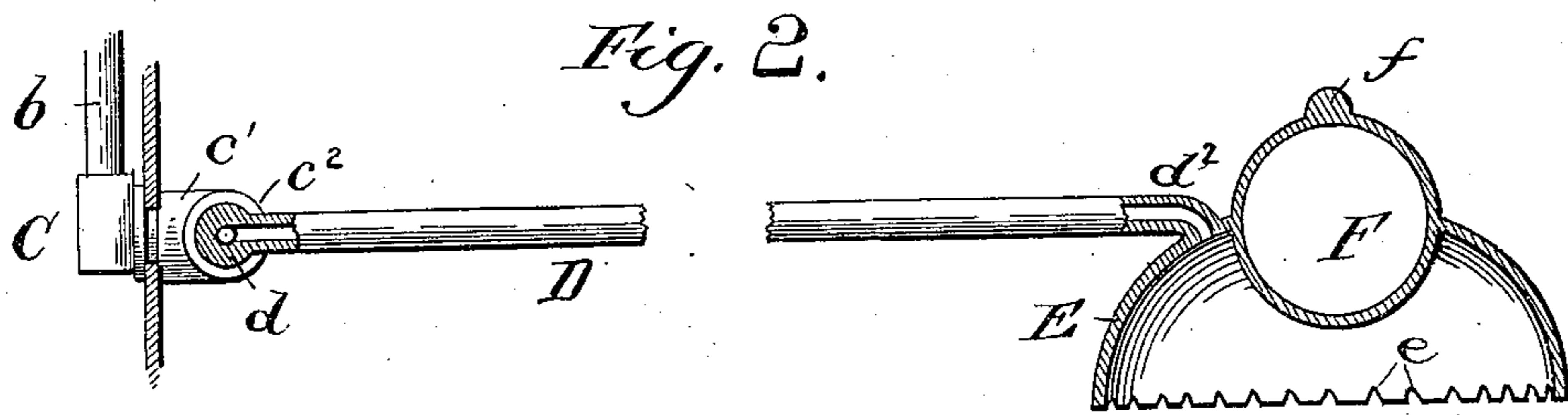
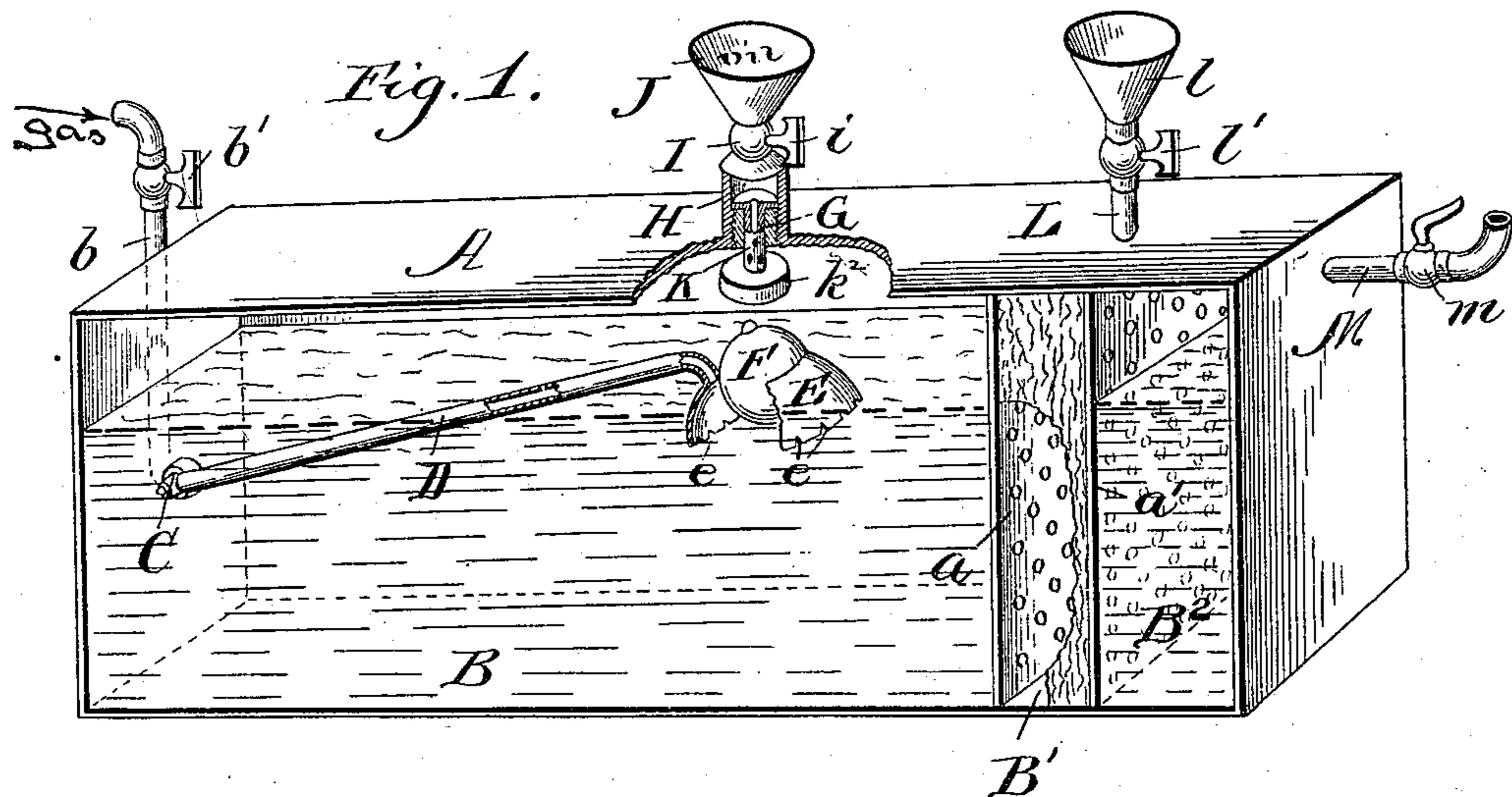


(No Model.)

G. G. SCHROEDER.
GAS ENRICHER.

No. 557,086.

Patented Mar. 24, 1896.



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE G. SCHROEDER, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR OF ONE-FOURTH TO HENRY P. HOLDEN, OF SAME PLACE.

GAS-ENRICHER.

SPECIFICATION forming part of Letters Patent No. 557,086, dated March 24, 1896.

Application filed January 15, 1896. Serial No. 575,635. (No model.)

To all whom it may concern:

Be it known that I, GEORGE G. SCHROEDER, a citizen of the United States, residing at Washington, in the District of Columbia, have
5 invented certain new and useful Improvements in Gas-Enrichers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable
10 others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The invention relates to improvements in
15 gas-enrichers, the main objects being to provide an apparatus of simple construction whereby the gas may be caused to ascend through an oil sufficiently far to permit it to absorb enough of the oil to give it the desired
20 degree of illuminating power, and to so construct and arrange the parts of the apparatus that the amount of oil absorbed by the gas shall not be subject to variation, but shall remain about constant, however much the
25 amount of oil in the receptacle or tank may vary.

A further object of the invention is to provide means whereby the apparatus may be readily and quickly fed with the necessary
30 amount of oil and purifiers as those in the tank are being used up or rendered inefficient or when the sponges become dry.

To these ends the invention consists in the novel construction and combination of parts
35 hereinafter described and claimed.

In the drawings accompanying and forming part of this specification, Figure 1 represents a perspective view, sectioned vertically and longitudinally, of a carburetor embodying the
40 invention. Fig. 2 represents a detail side view, partly in section, of the inlet-pipe, float, and attachments. Fig. 3 represents a plan view of the parts shown in Fig. 2. Fig. 4 represents a vertical sectional detail view of the
45 oil-feeding device hereinafter described.

Referring to the drawings by letter, A designates the box or case of the apparatus of rectangular shape and divided by the vertical perforated partitions *a a'* into the three
50 compartments or chambers B, B' and B².

B designates the oil-chamber into which the gas passes through the vertical pipe *b*, the lower end of which is attached to and opens into the outer end of the case A and chamber B at a suitable point at or near its center, this
55 attachment being made by a suitable coupling-piece hereinafter more fully described. The upper end of the pipe *b* is adapted for attachment to a pipe from any proper source of gas-supply and is provided with a valve *b'*
60 to regulate the inward flow of gas.

C designates the coupling-piece referred to, the construction of which is plainly shown in Figs. 2 and 3. The said coupling-piece comprises the vertical portion *c*, internally
65 threaded to receive the meeting externally-threaded end of the pipe *b* and an internal horizontal portion *c'*, having at its end the hollow cylindrical socket *c²* to form a joint with the adjacent end of the vertically-swinging inlet-pipe D. The said end is enlarged
70 and formed into a cylindrical hollow head *d* and is connected by a short tubular piece *d'* to the cylindrical socket *c²*, so that gas will flow freely through the joint at whatever inclination the pipe D may stand. The pipe
75 D extends a suitable distance inward and has its inner end *d²* curved downward and secured to the hemispherical deflecting-plate E, into which it opens near the top thereof, the said
80 plate being notched around its edge at *e e* to permit the gas to escape more readily thereunder and to cause it to break up into globules or particles, so that it will come into more intimate contact with the oil and, consequently,
85 take up more thereof.

F is a float of any suitable form and light material, but preferably hollow and globular and of sheet metal, provided on its top with a knob *f*, the purpose of which is hereinafter
90 explained.

G is a short, vertical, externally-threaded nipple rising from the top of the casing A at a proper point, and H is a tubular cap, internally threaded at its lower end to screw
95 down on said nipple. Above the tubular cap H is a vertically perforated or tubular enlargement I, provided with the transverse cut-off cock *i*, and above the said enlargement is the funnel or hopper J, provided with the
100

transverse removable screen or sieve *j*, as shown in Fig. 4. The cap H, enlargement I and hopper J are preferably made in one piece, as shown in Fig. 4.

5 K, Figs. 1 and 4, is a tube passing through the nipple G and having a flange *k* surrounding its upper end and resting on the nipple to hold it from falling inward. The tube K is perforated at suitable points *k'* *k'*, and has its
10 lower end closed by the disk *k*², against which the knob *f* of the float F is adapted to impinge.

L is a tube rising vertically from the top of the casing A, communicating with the purifying-chamber B', and provided on its top with a suitable feeding-funnel *l*, and below
15 said funnel with a stop cock or valve *l'*.

By means of the funnel *l* and tube L the sponges in the chamber may be kept moist or
20 saturated with any purifying liquid.

M is the outlet-pipe for the gas after it has been enriched and purified. The said pipe leads from the upper part of the compartment B² to any proper point of storage or consump-
25 tion and is controlled by the valve *m* at a suitable point near the apparatus. This compartment provides a storage-chamber for the enriched and purified gas, so that a free flow through the outlet-pipe may be had, which
30 would not be the case if the mouth of said pipe impinged upon the sponge of the purifying-chamber.

In operation the oil is fed to the chamber B through the funnel J, passing through the
35 openings *k'* *k'* into said chamber. Now when the chamber has a sufficient quantity of oil, the latter raises the float F till the knob *f* presses up the disk *k*², so that the apertures *k'* are moved up into the nipple or sleeve G
40 and communication through them closed, thereby cutting off the feed from the funnel or hopper J. When the level of the oil in the tank sinks, the disk *k*² falls, the said apertures are uncovered and the automatic feed
45 again begins.

By means of the hopper *l* and pipe L a suitable heavy oil carrying a purifying agent, such as powdered alum, may be fed to the
50 sponge in the chamber B', so that the sponge is at all times suitably moistened, and at all times carries the purifying agent in proper quantity to absorb or remove impurities, such as coal-tar, by a process like that of filtration.

I am aware that gas-enrichers or carburetors having compartments separated by perforated partitions have been used, and such I do not desire to claim, broadly; but

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

60 1. In a gas-enricher the combination with the oil-compartment, of a vertically-swinging gas-supply pipe entering said compartment, a deflecting-plate and a float secured to the free end of said pipe, and an oil-feeding valve
65 communicating with said compartment and located in the path of movement of the swing-

ing gas-supply pipe, whereby the feed of oil is cut off when the compartment contains the desired quantity, substantially as described.

2. In a gas-enricher, the combination with 70 the casing divided by vertical, perforated partitions into an oil-receiving chamber, an oil-delivering chamber and a purifying-chamber, situated between the oil receiving and delivering chambers, of means for delivering 75 a purifying agent to the purifying-chamber, a vertically-swinging gas-supply pipe entering the oil-receiving chamber, and an oil-feed valve communicating with said chamber and located in the path of movement of the swing- 80 ing gas-supply pipe, substantially as described for the purpose set forth.

3. In a gas-enricher, the combination with the tank, the vertically-swinging tube there- 85 in, adapted to receive gas from any proper source of supply, and the concave depending plate, attached to a proper float and receiving gas near its upper edge, from the upper end of said swinging tube, of the automati- 90 cally-closing oil-feeding device, essentially composed of a vertical nipple rising from the top of the tank, at a proper point, the per- 95 forated tube, movable vertically in said nipple, flanged around its upper end to prevent its falling through said nipple, and having a closed lower end against which the top of the float impinges when the tank has a sufficient quantity of oil; thereby stopping the inflow of oil through the perforations in said tube by moving them upward against the inside of 100 the nipple, substantially as specified.

4. In a gas-enricher, the combination with the receiving-tank, the feed-pipe opening into one end of the receiving-tank, the movable gas-pipe, free at its inner end, and pivoted at 105 its outer end to a suitable coupling-piece secured to the inner surface of the outer end of the receiving-tank, and having communication through said coupling-piece with the feed-pipe and the float, substantially as de- 110 scribed, secured to the inner end of the movable gas-pipe; of the oil-feeding device, composed of the nipple G, tube H having a suit- 115 able stop-cock and feeding-funnel, at its upper end, and the perforated tube provided with the flange *k* at its upper end and disk *k*² at its lower end; all constructed and arranged substantially as shown and described for the purposes specified.

5. In a gas-enricher, the combination with 120 the casing, the gas-delivery pipe secured to the outside of the casing, the vertically-swinging gas-delivery pipe, pivoted at its outer end, to a bracket secured to the inner side of the end of the casing and communicating through 125 said bracket with the outside delivery-pipe and the float attached to the inner, free end of the swinging delivery-pipe and composed of the hollow sphere F and hemispherical de- 130 flecting-plate E notched at *e*, *e*, in its edge, and opening near its connection with the sphere F into the gas-delivery pipe; of the

automatic feed device consisting of the tube
H and attached funnel and stop-cock, the
tubular nipple secured within the tube H, and
the perforated, tubular piece K provided with
5 the upper and lower flanges k, k^2 , respectively,
and with the perforations k', k' , substan-
tially as specified.

In testimony whereof I affix my signature
in presence of two witnesses.

GEORGE G. SCHROEDER.

Witnesses:

E. E. RAMEY,

R. C. WILTON.