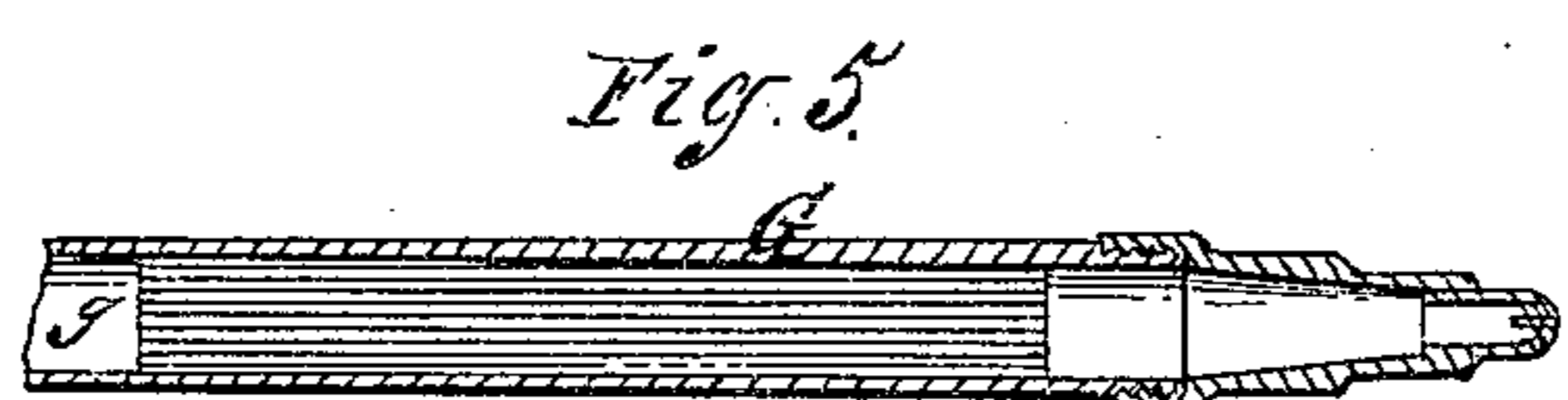
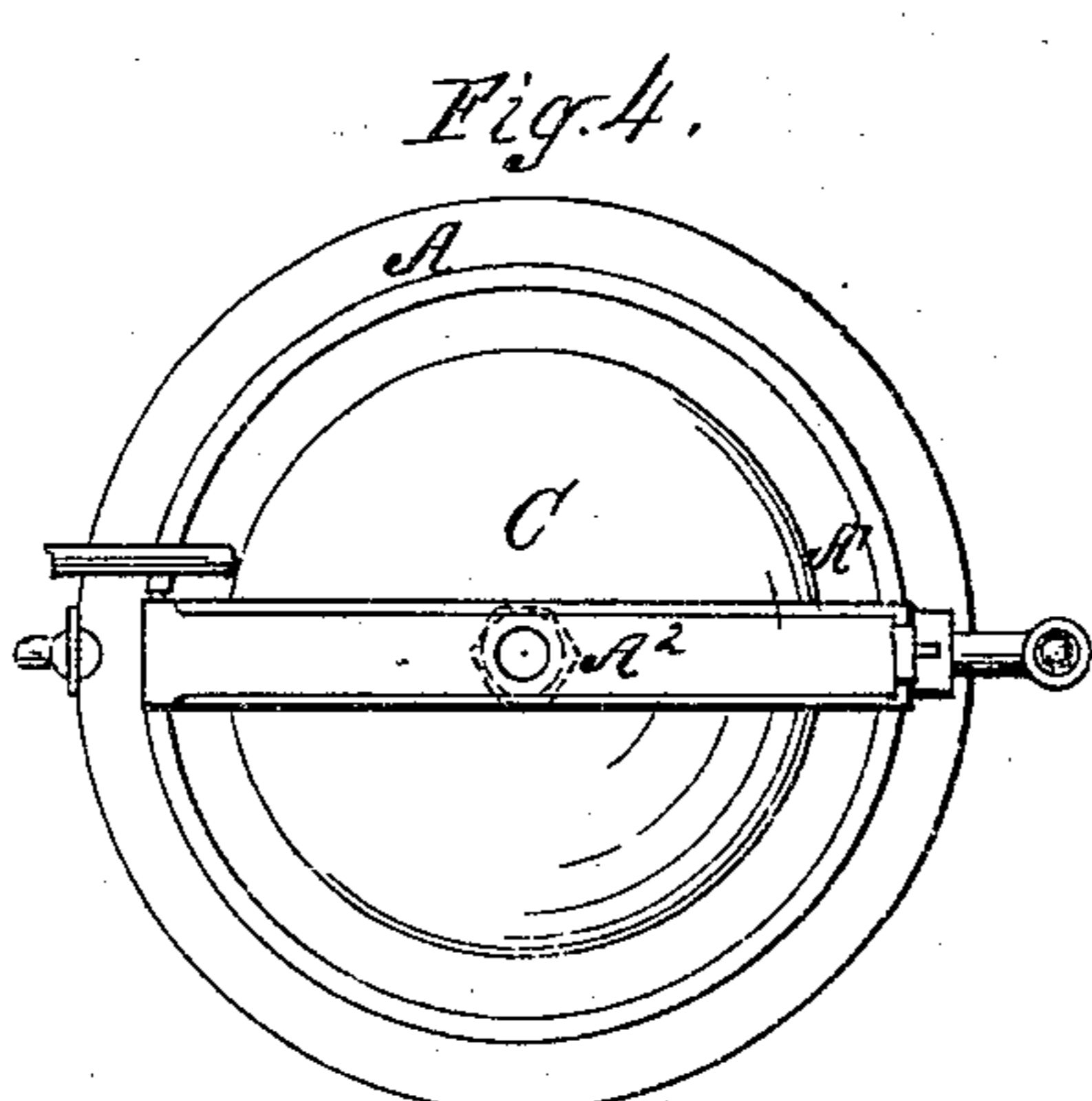
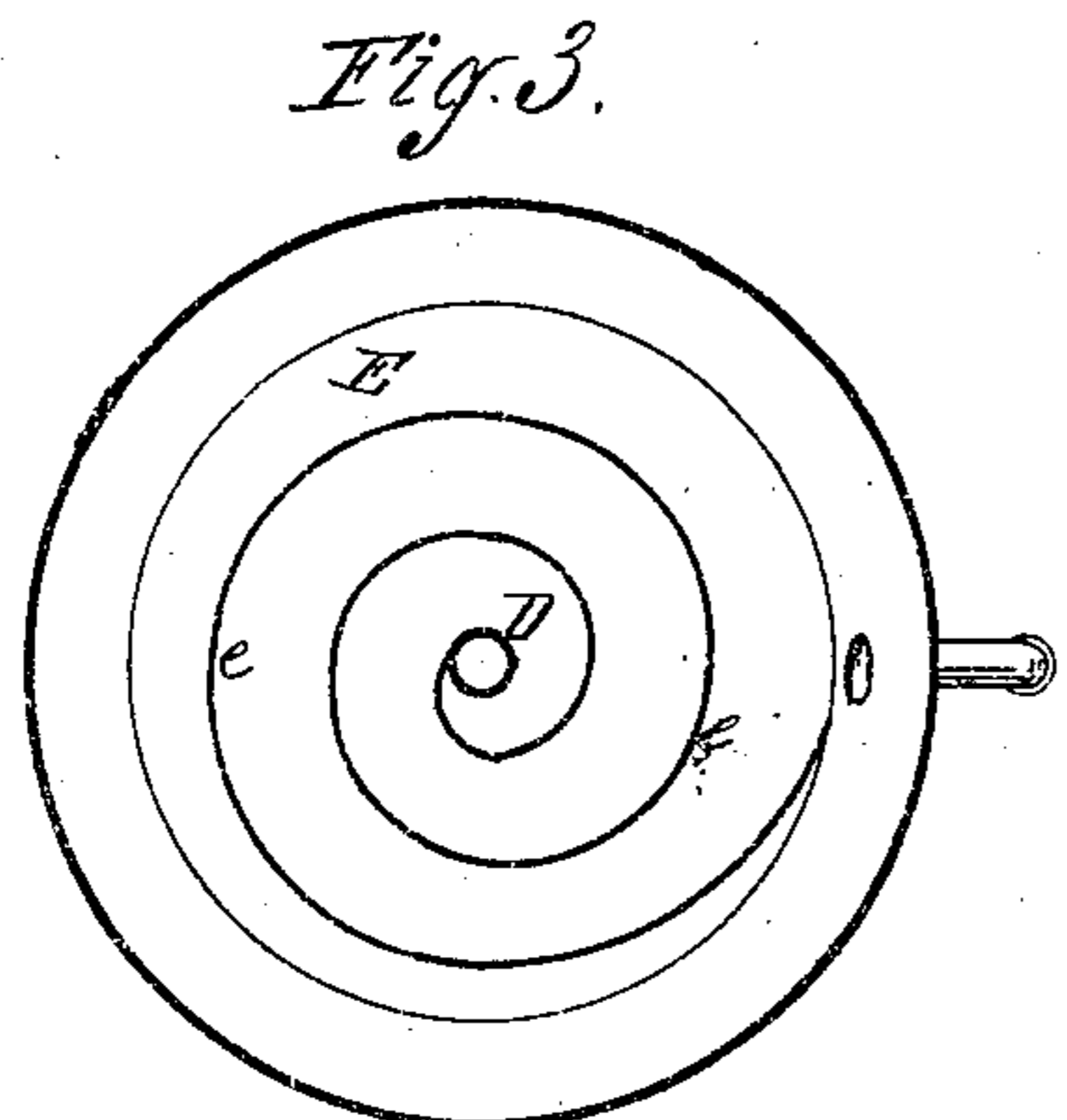
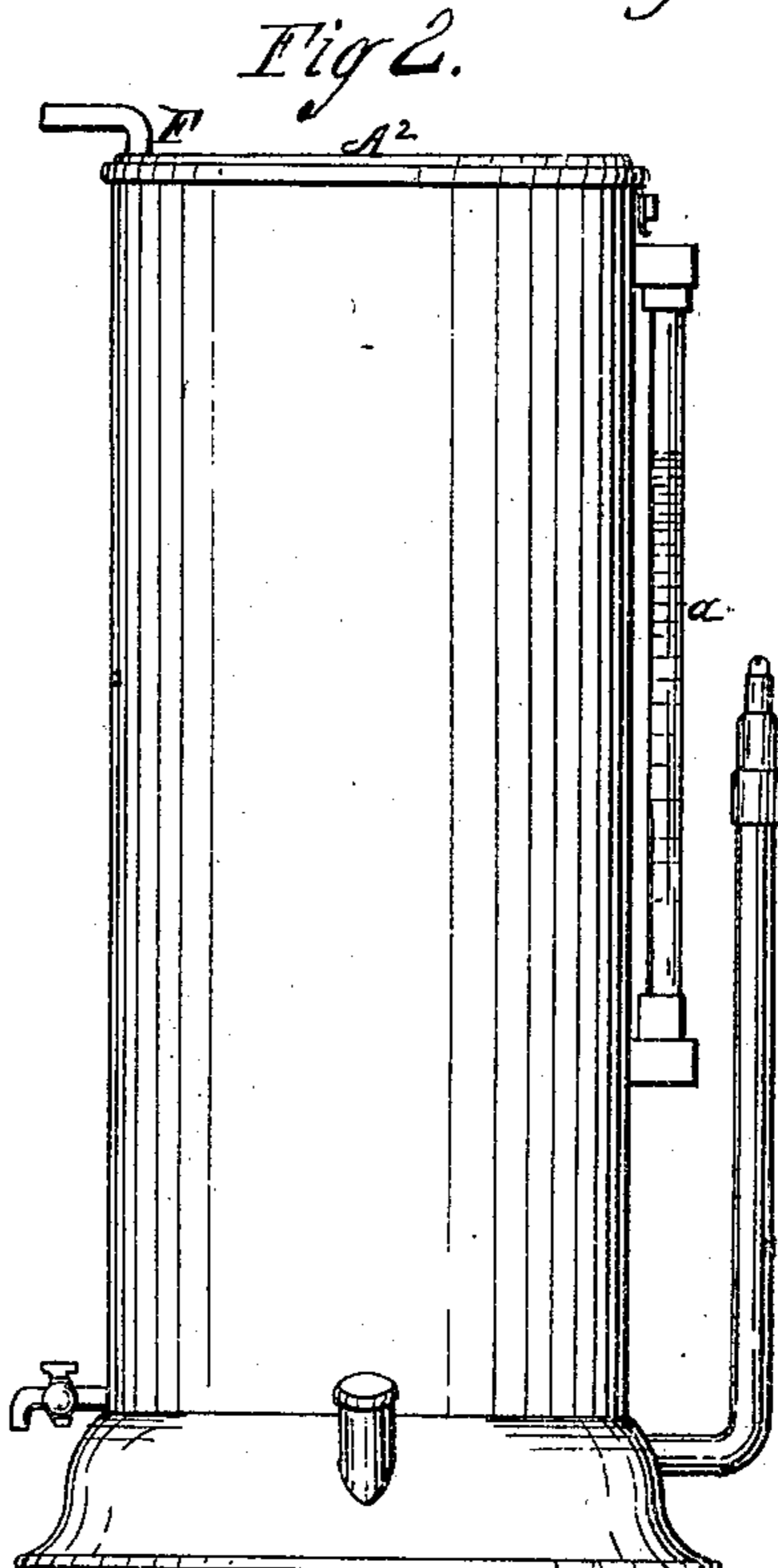
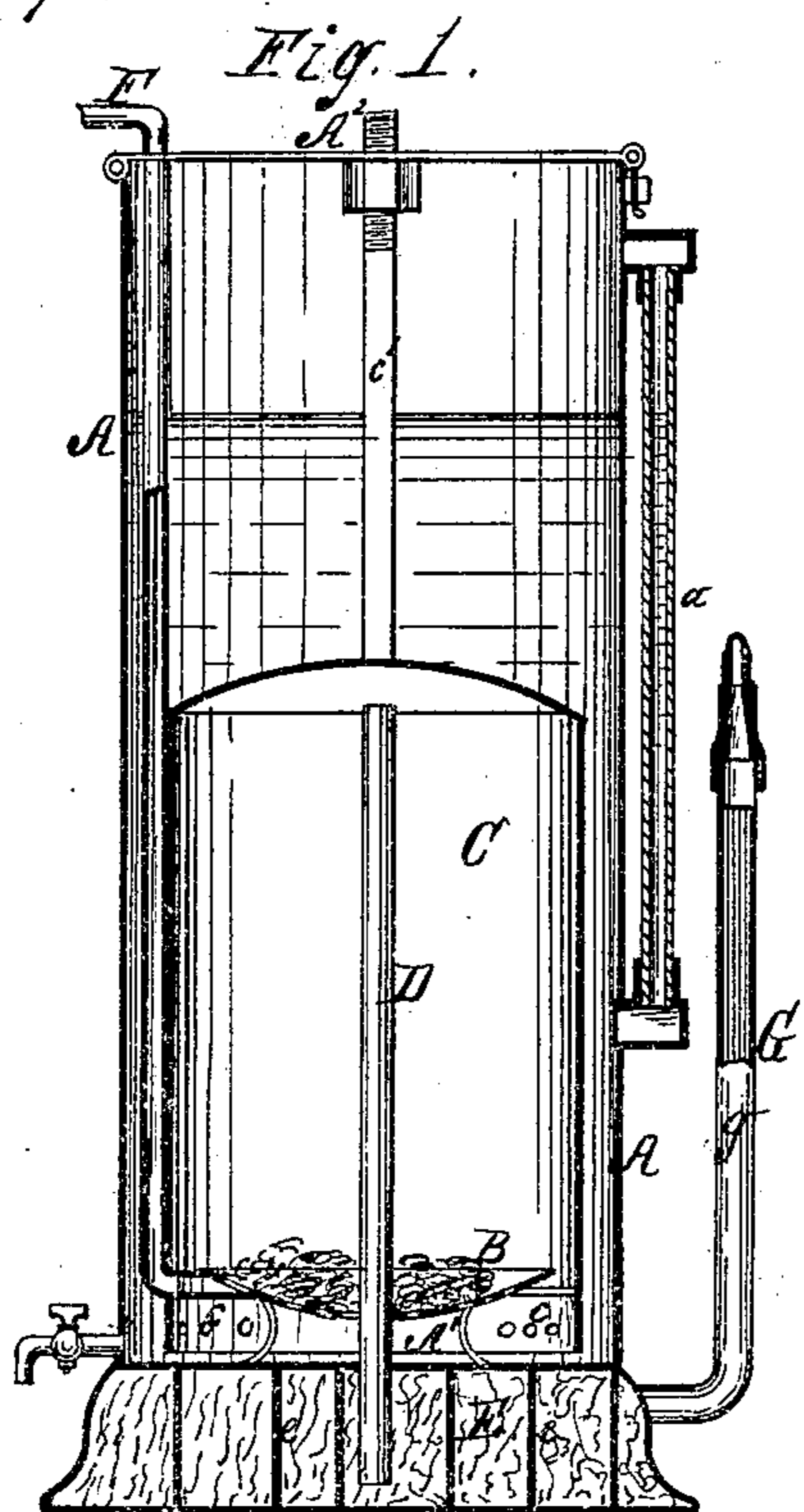


B. Sloper Hydrogen Generator & Carburetter.

No 92,892.

Patented July 20. 1869.



Witnesses.
Jno W. Herchel
Robert Burns

Inventor.
Byron Sloper by his
attys.
Herchel & Co.

United States Patent Office.

BYRON SLOPER, OF ST. LOUIS, MISSOURI.

Letters Patent No. 92,892, dated July 20, 1869.

IMPROVED HYDROGEN-GENERATOR AND CARBURETER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, BYRON SLOPER, of St. Louis, in the county of St. Louis and State of Missouri, did make certain new and useful Improvements in Automatic Machines for Generating Hydrogen-Gas and Carbureting the same, and for other and similar purposes; and I do hereby declare that the following is a full and true description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

This invention relates to machines used principally for forming illuminating-gas. For said purpose hydrogen-gas is generated and passed through gasoline or other light oil of the petroleum series, the so-carbureted mixture being burned in the usual manner.

The nature of this invention is—

First, in the manner of regulating the height of the gas-holder in accordance with the sediment and fluid accumulation thereunder;

Secondly, in the arrangement of said gas-holder to be rotated with the tray whereon the metal for generating gas is placed, so as to wash said metal and cleanse it of the salt formed by the action of the chemicals used; and

Said nature is, lastly, in the arrangement of a glass or other gauge with the stationary but adjustable gas-holder, so that by the level of the fluid in said gauge the action of the acid may be ascertained.

To enable those herein skilled to make and use my said invention, I will now more fully describe the same, referring herein to the accompanying

Figure 1 as a sectional elevation; to

Figure 2 as an elevation; to

Figure 3 as a sectional plan of the carbureting device; to

Figure 4 as a general plan; and to

Figure 5 as a section of the safety-burner.

All said figures represent the devices here to be described in one of the forms in which they are practicable.

I construct a proper vessel, A, in which hydrogen-gas is to be generated.

Near the base of said vessel is a false bottom, A¹, whereon a perforated tray, B, is placed. Said tray bears granulated zinc, iron filings, or similar metal, which, in the presence of a strong acid, will decompose water.

Over said tray and connected therewith is arranged the bell C, having perforations c near its lower edge, and a vertical shaft, c¹.

When this bell is in proper position the shaft c¹ is directly under the cross-bar A², which is hinged to the vessel A and otherwise secured by a hasp. The height of the bell is regulated by the set-screw c² under the cross-bar.

The usual admixture of water and sulphuric or other similar acid is placed in the vessel A, causing the generation of hydrogen-gas under the bell C in the usual manner.

During said evolution of gas the bell C is held down by the cross-bar A² over its shaft c¹, as above described. The fluid is therefore forced out of the bell C, and it is plain that if the gas is not drawn off the fluid will pass below the tray B and its metal, and thus the generation of gas cease.

To indicate the rise of fluid in the vessel A a gauge, a, of glass, will be arranged on said vessel. If by the weakening of the acid or the complete oxidation of the metal upon the tray B the generation of gas is suspended, the gauge a will indicate such interruption of the process and diminution of gas generation by the lowered level of the fluid.

A central pipe, D, passes the generated gas from the bell C to the carbureter E. The latter is usually arranged under the false bottom A¹, so that the gas enters centrally and is compelled to pass circuitously by the spiral partition e. The space between is filled with curled-hair or other distributing medium.

Gasoline or similar oil is filled into the sub-chamber through a proper inlet, and by capillary attraction the mass of hair becomes charged with said oil, so that the hydrogen-gas in passing through takes up the carbureted hydrogen vapors and becomes a fit illuminating substance, burning at any ordinary burner when the same is connected with said sub-chamber.

The hydrogen acts, by its violent affinity for oxygen, to create an intense heat in combustion, causing incandescence of the carbon of said carbureted hydrogens and producing a brilliant white light.

When economy demands it atmospheric air is added to the hydrogen in the bell C by forcing the same in by a proper pump through a pipe, F. The hydrogen and air mixture is then carbureted in the manner before described, and is led from the carbureter E to a burner, G.

The admixture of air has formed to an extent an explosive compound, and it is therefore advisable to use a burner in which the flame shall not cause ignition prematurely. To effect this I have arranged the burner-pipe g, as shown in fig. 5, full of wire or similar porous metallic medium, the object thereof being to chill any flame which may tend to pass, while it allows the gas mixture to pass. The burner-tip is placed on the pipe g in the usual manner.

When the accumulation of sulphate upon the zinc or metal resists the action of the acid the tray B will be revolved by turning the rod c¹ and bell C, and thus the fluid in the vessel A will wash off the salt accumulation and present fresh metallic surface to the acid.

Having thus fully described my invention,

What I claim is—

1. The arrangement of the gas-holder so as to be adjusted in accordance with the accumulation of salt and sediment thereunder, substantially as set forth.

2. The arrangement of the gas-holder to be rotated with its tray, and thus wash the metal on the latter, substantially as set forth.

3. The gauge *a* arranged on the vessel A, acting with the fluid and stationary gas-holder to indicate the acid action in generating gas, substantially as set forth.

4. The vessel A, gauge *a*, adjustable holder C, connected tray B, carbureter E, pipe F, service-pipe G, and its safety stuffing, when combined and arranged substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of—

BYRON SLOPER.

Witnesses:

GEO. P. HERTHEL, Jr.,
WILLIAM W. HERTHEL.