

(No Model.)

2 Sheets—Sheet 1.

J. LEEDE.  
AUTOMATIC CARBURETING LAMP.

No. 336,572.

Patented Feb. 23, 1886.

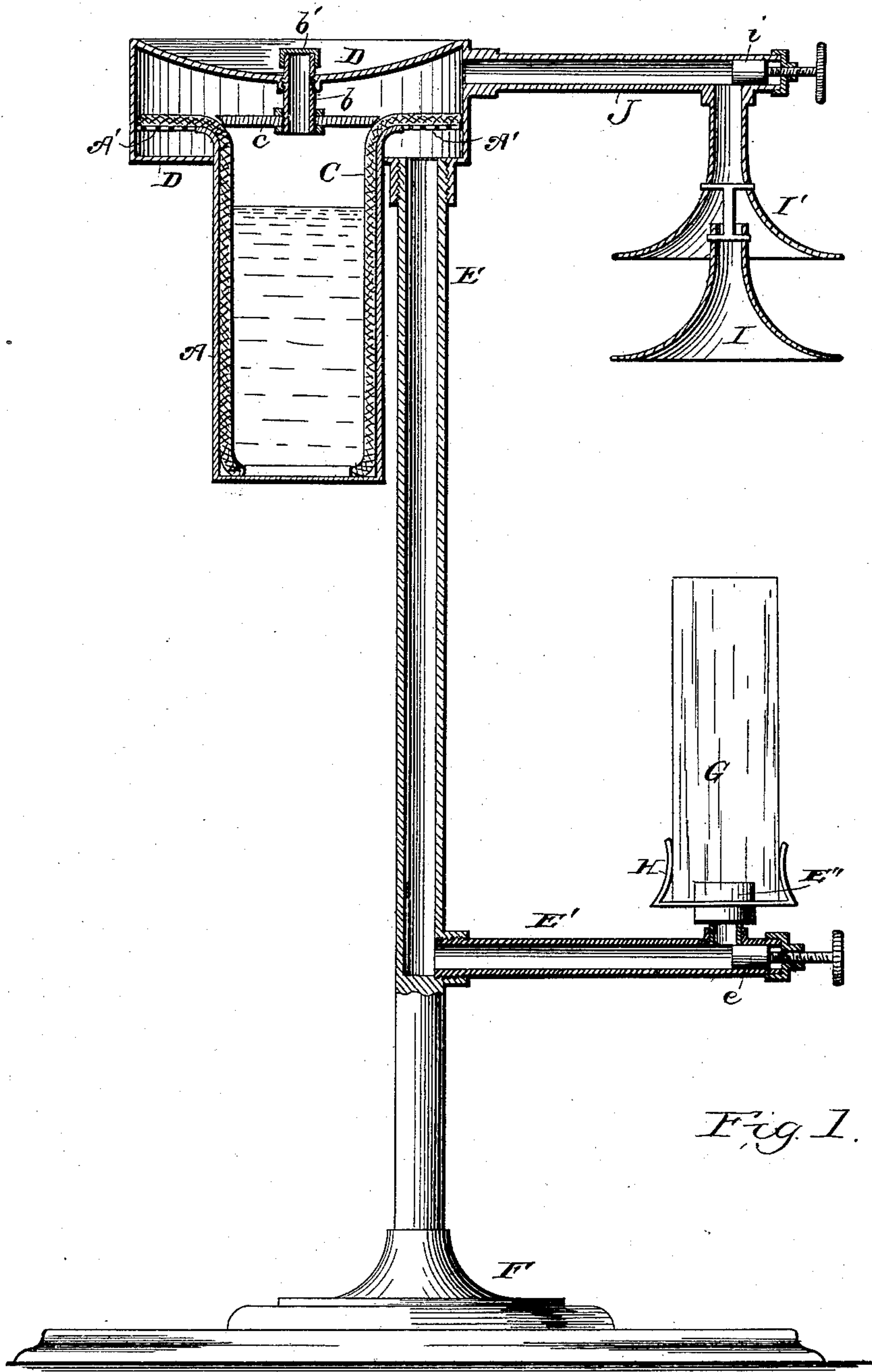


Fig. 1.

Witnesses:  
Wm. A. Rosinbaum  
Frank S. Ober

Inventor  
Julius Leede  
by V. D. Stockbridge  
Atty.

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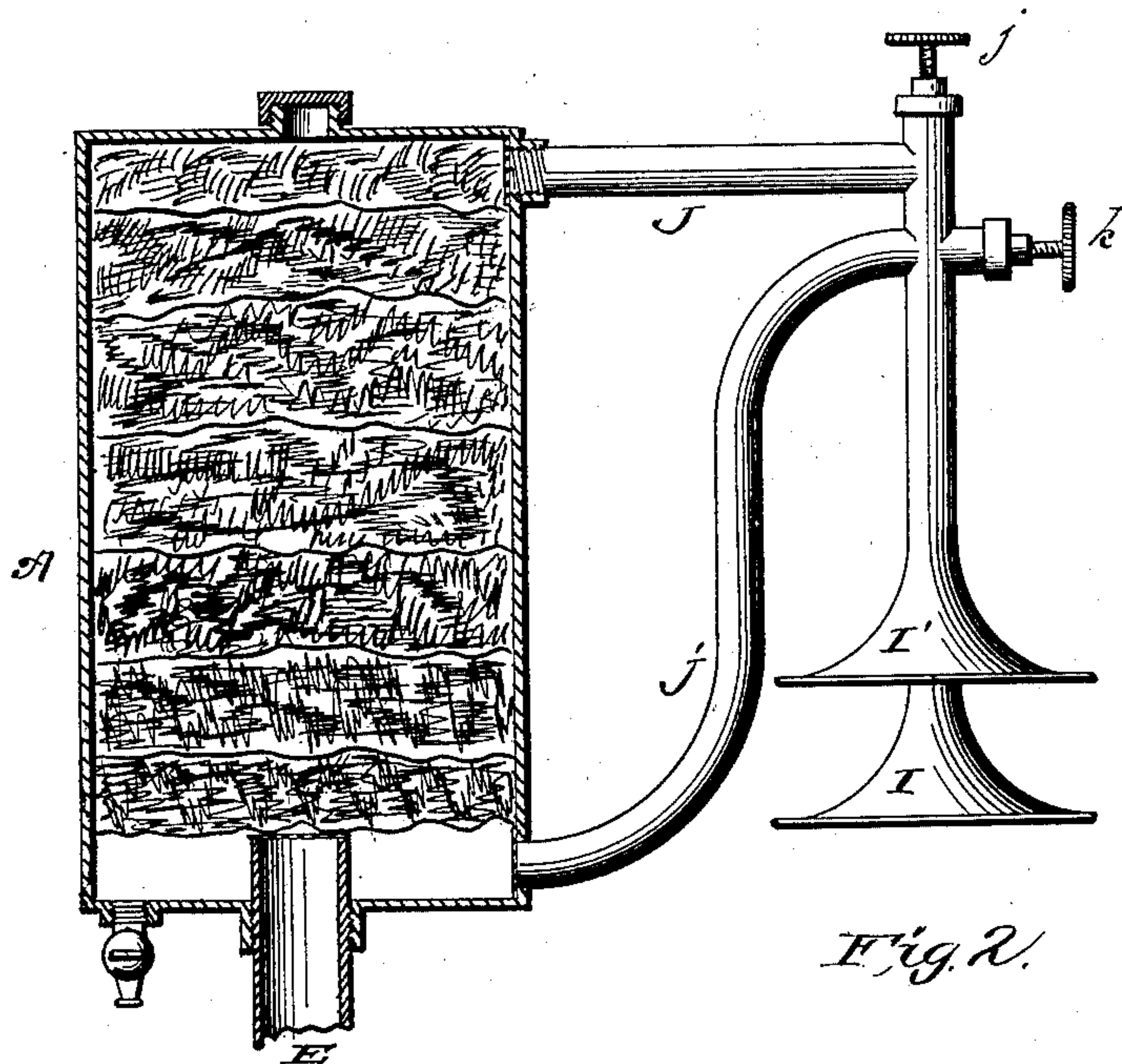


Fig. 2.

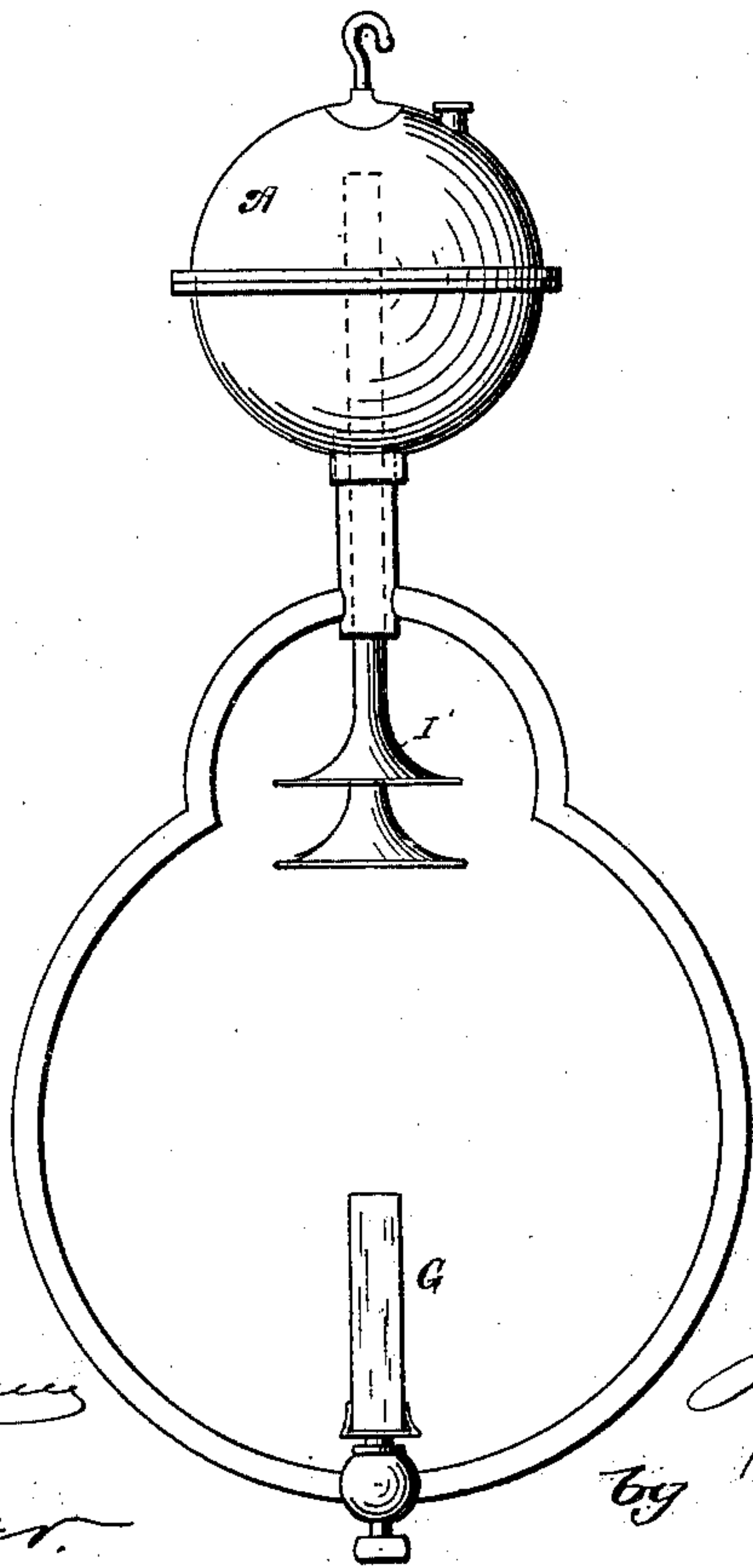


Fig. 3.

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# UNITED STATES PATENT OFFICE.

JULIUS LEEDE, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO  
JOHN LAWSHE, OF COLTON, CALIFORNIA.

## AUTOMATIC CARBURETING-LAMP.

SPECIFICATION forming part of Letters Patent No. 336,572, dated February 23, 1886.

Application filed November 10, 1885. Serial No. 182,393. (No model.)

*To all whom it may concern:*

Be it known that I, JULIUS LEEDE, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Automatic Carbureting-Lamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in automatic carbureting-lamps wherein a current or draft is produced, the volume of said current is carbureted, and the resultant gas is supplied to a burner by the heat generated by the flame of the lamp; and it consists of the means, hereinafter described, whereby a maximum of current is obtained, which current is comparatively free from incombustible elements.

In apparatus of this class, as heretofore constructed, either a separate pumping apparatus has been employed to force pure air through the hydrocarbon-reservoir, or the ascendant column of heated incombustible products of combustion has been driven through it and constituted the greater portion or volume of the elements to be carbureted. I pass the heated products of combustion through the reservoir, but by injecting atmospheric air I produce a stronger draft or pressure, and thereby obtain a mixture which serves not only the function of heating and vaporizing the hydrocarbon, but also produces a more perfectly combustible gas. As a result I secure a clear white flame at my burners, indicating complete or nearly complete combustion.

My invention consists, also, in certain details of construction, which, together with the more important features, will be described hereinafter, and particularly pointed out in the claims.

In the drawings which accompany and form a part of this specification, Figure 1 is an elevation, partly sectional, of my preferred form of lamp; and Figs. 2 and 3 are modifications thereof.

Referring to Fig. 1, A is a vessel or reservoir containing gasoline or some other hydrocarbon fluid. The vessel is provided at the top with a rim or ledge, A', which is perforated, as shown in the drawings. A wick, C,

is placed within the vessel in such a position that it will extend into the hydrocarbon fluid and lie over the rim or ledge A'. The vessel is also provided with a cap, D, which fits over and is soldered to it. The cap is large enough to form a chamber around the upper part of the vessel. The top of the cap is concaved, and has screwed into it a tube, b, through which the vessel may be filled. At the bottom of the tube b is screwed a disk, c, of the proper size, so that when the tube is screwed down it will bear gently against the wick C and keep it in place. The tube b has a cap, b', to keep out the dust and to prevent the ignition of the gas at the tube or its escape into the atmosphere. At the bottom of the chamber formed by the cap D a pipe or tube E is screwed in, which pipe is secured in a supporting-base F and forms the lamp-standard. A pipe, E', branches off horizontally from the pipe E at a convenient height, and in the pipe E' the burner E<sup>2</sup> is secured. G is the lamp-chimney, and H the chimney-holder. The pipe E may or may not be plugged below its juncture with the pipe E', as desired. A valve, e, is located in the pipe E' to regulate the flow of gas to the burner. Its shaft may be either screw-threaded, as shown, or it may simply fit tightly in its bearings and be operated by pushing or pulling on the thumb-piece at the outer end. Above the chimney G are two bells, I I', connected with each other by a T-piece, as shown, or by any other suitable hanger. The upper bell, I', is connected by a pipe, J, to the chamber or cap D. A valve, i, exactly like the valve e, is located in the pipe J.

In practice I cover each of the openings from the chamber of cap D with wire-gauze for purposes of safety. Now, at ordinary temperatures any light hydrocarbon fluid will give off a gas that is heavier than the atmosphere. That being the case, the operation of my lamp is as follows: When the lamp is not in use, gas is given off in the reservoir both from the surface of the hydrocarbon fluid and from the exposed parts of the wick. A portion of this gas falls in the tube E and passes out through the pipe E' to the burner. There will, therefore, always be gas enough at the burner to supply the initial flame. Before lighting the lamp the valves e and i will both be opened. As soon as combustion has once begun



the heated air formed thereby passes upward through the bells I I', and into the chamber of cap B through the pipe J. Here it both causes renewed vaporization and joins with the resulting gas in its passage to the burner. By this process combustion is constantly and automatically supplied until the hydrocarbon fluid is exhausted. By the use of the two bells I I', I secure better results than when I employ but one. It is in fact an application of the principle of the injector. If the lower bell is removed after the lamp is lighted, or if the space between the two outer rims of the bells is covered, the flame will immediately change from white to a dull red, thereby showing imperfect combustion. The lamp may be put out by closing either of the valves *e i*. In practice it would be better to close both. It will of course be understood that I may employ as many burners as I please without departing from the principle of my invention.

In the construction shown in Fig. 2 the carbureting-vessel is filled with rotten willow or other good absorbent, and then a hydrocarbon fluid is poured in at the opening *b* to saturate it. A piece of corrugated wire-gauze is laid over the top of the supply-pipe E, which in this instance extends directly from the bottom of the carburetor. The wire-gauze is corrugated, so as to prevent the packing of the rotten willow or other absorbent which is placed upon it. Whatever portion of the fluid succeeds in getting through the gauze can be drawn off by a cock, *p*, at the bottom of the reservoir. Besides the pipe J, a pipe, J', is added in this construction, the former entering at the top of the vessel A and the latter at the bottom. The valve *j* is for closing the pipe J, and the valve *k* is a two-way cock for closing either the pipe J' alone or both pipes at once in a manner that is well understood. I find that with both pipes open I can use a heavy hydrocarbon fluid with good results.

Fig. 3 represents a form of lamp adapted to be used as a hanging lamp. M is a hook for attaching the lamp to a fixture. In this construction the pipe J extends up into the carburetor, passing through the pipe E, so as to leave an annular space between them. The pipe E divides and leads to the burner by two branches, E' E'. For absolute security, all the passages to and from the carbureting-vessel should be protected by wire-gauze.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In combination, a burner, a hydrocarbon-reservoir, a plurality of bells located above the burner, and a continuous circuit between the bells and the burner through the reservoir, substantially as described.

2. As a means for producing a draft or pressure in an automatic carbureting-lamp, a pair of bells located over the burner thereof, substantially as shown and described, the said bells being connected by a pipe or pipes with the carbureting-vessel.

3. The combination, with a reservoir containing a hydrocarbon fluid and a wick adapted to rest partly in and out of the fluid, of a cap for the reservoir, and means, adjustably connected with the cap, whereby the wick can be kept in place by pressure, substantially as described.

4. The combination, with a hydrocarbon-reservoir provided with a perforated rim or ledge, of a wick adapted to overlap the said rim or ledge and a conduit leading to the lamp-burner, substantially as described.

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

JULIUS LEEDE.

Witnesses:

V. D. STOCKBRIDGE,  
WM. A. ROSENBAUM.