

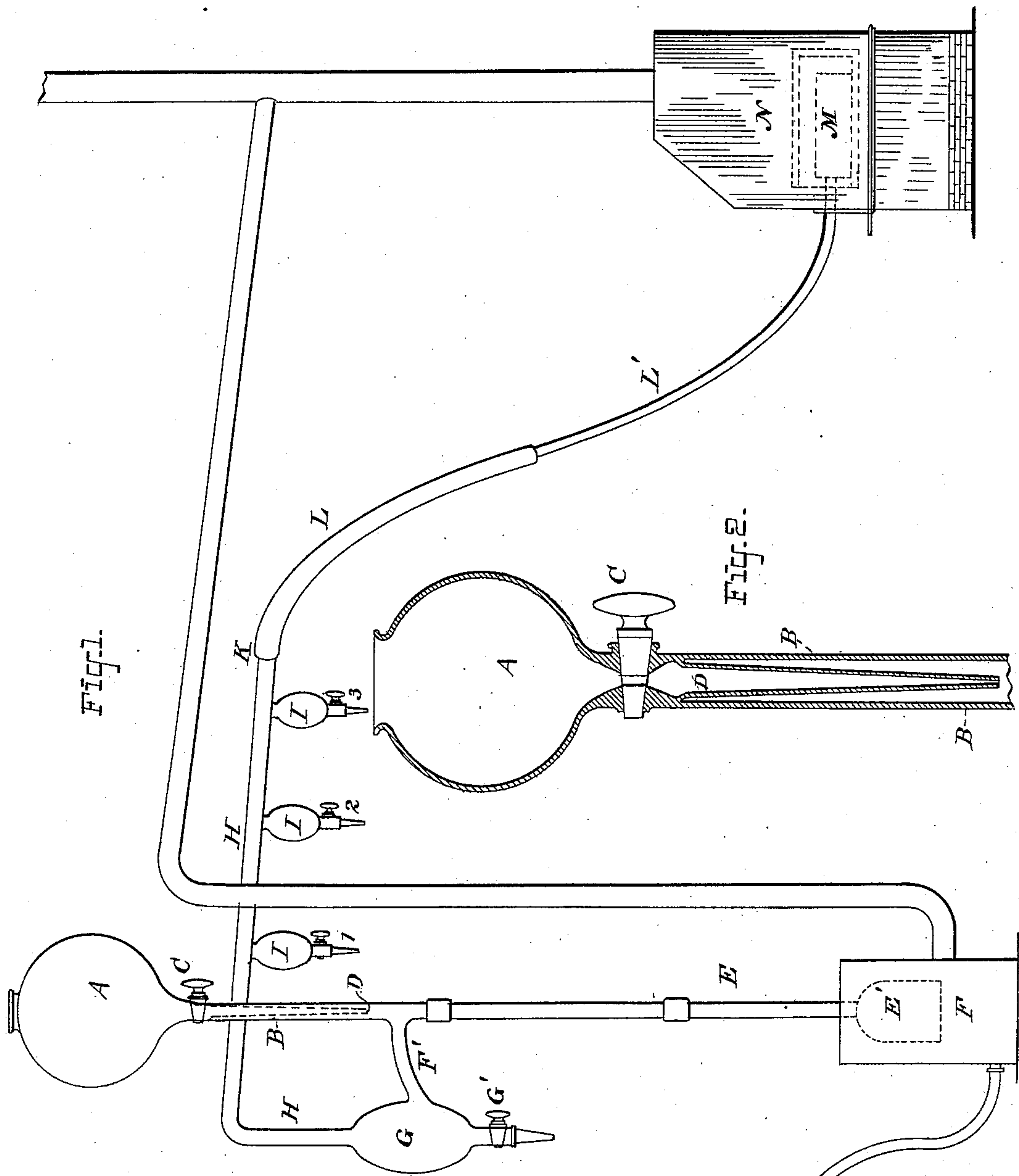
(No Model.)

C. G. PERKINS.

APPARATUS FOR CARBONIZING INCANDESCENTS.

No. 287,316.

Patented Oct. 23, 1883.



ATTEST:
John F. Meyer
E. Wm. Edwards

INVENTOR:
Charles G. Perkins
Per. J. A. Hurdle
att.

UNITED STATES PATENT OFFICE.

CHARLES G. PERKINS, OF NEW YORK, N. Y., ASSIGNOR TO THE IMPERIAL
ELECTRIC LIGHT COMPANY, OF SAME PLACE.

APPARATUS FOR CARBONIZING INCANDESCENTS.

SPECIFICATION forming part of Letters Patent No. 287,316, dated October 23, 1883.

Application filed March 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHAS. G. PERKINS, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in a Carbonizing Apparatus, of which the following is a specification.

My invention relates to an apparatus for the manufacture of hydrocarbon fumes from heavy oils, which are afterward discharged into a heated chamber for depositing carbon on the exposed surfaces of the carbon filaments which are placed therein for final treatment.

I am aware that heavy oils have heretofore been discharged into a heated chamber containing carbon filaments. This method is objectionable, from the fact that when the hydrogen and impurities of the oil are conveyed into the heated chamber they will adulterate the pure hydrocarbon which may be produced when said discharge takes place, thus preventing the carbon filaments from receiving a pure hydrocarbon deposit on the exposed surfaces thereof. This objection is obviated by my invention, fully described hereinafter.

The first part of my invention consists of an oil-reservoir, made of glass or other suitable material, provided with a tubular extension at its base. Said extension is connected with a metallic tube which passes into a chamber arranged within a furnace. The tubular extension is provided with a stop-cock, which shuts the oil off or on, also with a secondary tapering tube, which begins at the walls of the tubular extension, on the interior thereof, just a little below the stop-cock, and extends downward at any suitable distance therefrom. The tubular extension is also provided with a projecting tube on the side thereof. Said projection enters the side of a bulb or condenser having a tubular projection at the top thereof, and extending therefrom to a suitable distance. This latter portion is provided with a series of bulbs or condensers arranged on the under side thereof, with stop-cocks arranged on the lower extensions of the bulbs. The extreme end of the tube having the bulbs thereon is connected with a pipe leading into the chamber wherein the carbon filaments are placed for final treatment.

In the drawings, Figure 1 represents a general view of the apparatus complete. Fig. 2 represents a sectional detail view of the oil-reservoir and tubular extension, with the tapering tube integral therewith.

In the drawings, A is the oil-reservoir. B is the tubular extension. C is the stop-cock connected therewith. D is the secondary tapering tube arranged on the interior of the tube B. E is the metallic tube leading into a chamber, E', placed within a furnace, F. F' is the tube projecting from the tubular extension B, from which it passes to the base of the bulb or condenser G, provided with a stop-cock, G', and having a long tubular extension, H, at its top. Said extension is provided with bulbs I I I, having stop-cocks 1 2 3. The extreme end K of the tubular extension H is connected with one end of the rubber tube L, while the other end of said tube L is connected with the metallic pipe L', which enters the chamber M, in which the carbon filaments are placed for final treatment, said chamber M being placed within the furnace N.

Mode of operation: In order to deposit the hydrocarbon product on the carbon filaments for electric incandescent lamps, it will first be necessary to arrange the carbon filaments within the chamber M, then put the chamber into the heated furnace N. The pipe L' is then connected with the rubber tube L, which is again connected with the end K of the extension H. The chamber E' is properly heated before the chamber M is put into the heated furnace N. This is essential, from the fact that when the oil of the reservoir A is allowed to drop into the heated chamber E' it will produce a pressure that will force the fumes into the chamber M, which necessarily drives the oxygen therefrom before carbonization takes place, thus producing the desired result when the chamber M becomes sufficiently heated. Whenever the chamber E' becomes sufficiently heated, the stop-cock C is turned so as to allow the oil to pass from the reservoir to the tapering tube D, which is constructed in such a manner as to allow the oil to escape therefrom by drops, the intervals of which can be regulated by the stop-cock C. The oil drops from the end of the tapering tube D down into the heated chamber E', where it is immediately

burned, thus causing a smoke or fume to arise therefrom, which travels through the projecting tube F' to the bulb G, from which it passes to the tubular extension H, thence through
 5 the rubber tube L and metallic pipe L' to the interior of the heated chamber M, where it becomes ignited, thus depositing hydrocarbon products onto the exposed surfaces of the carbon filaments placed therein. The tapering
 10 tube D also answers as a safety-valve, so that if the main exit for the smoke or fumes becomes choked in any way it causes the pressure to act directly on the end of the tube D, thus causing the oil to cease dropping while
 5 the gases are forcing their way up and through the oil-reservoir A, thus preventing explosion, which would otherwise occur. During the process of depositing the product of hydrocarbon onto the carbon filaments a hydrous
 10 substance forms in the condensers, which is drained therefrom through the stop-cocks at the bottom thereof.

I am aware that an oil-reservoir having a tubular extension on the bottom thereof, and
 5 provided with a screw-rod arranged within its wall for regulating the flow of the oil therefrom, is not new. This construction is objectionable in my case, from the fact that the rod would tend to obstruct the passage, and thereby prevent the gas from escaping. In case of any
 10 accident it is prevented from passing into the chamber wherein carbon filaments are placed for final treatment. This being the case, an explosion would be inevitable.

Having thus described my invention, what I 35 claim as new, and desire to secure by Letters Patent, is—

1. The combination, substantially as shown and described, of the oil-reservoir A, stop-cock C, tapering tube D, tubes B and E, chamber E', tubular projection F', condenser G, stop-cock G', tubular extension H, condensers I I I, stop-cocks 1 2 3, tubes L and L', and chamber M, or their equivalents, for the purpose herein set forth. 45

2. In a hydrocarbonizing apparatus, an oil-reservoir having a delivery-tube with stop-cock and internal concentric delivery-jet, D, said delivery-tube being adjusted to enter a heated chamber or carbonizing-box, and
 50 having a projecting tube connected therewith leading into a condenser provided with a stop-cock on the base thereof, and having an extending tube on its top and extending horizontally therefrom, and provided with one or
 55 more condensers, said extension connected with a pipe leading into a chamber wherein carbon filaments are placed for final treatment.

Signed at New York, in the county of New York and State of New York, this 26th day 60 of March, A. D. 1883.

CHARLES G. PERKINS.

Witnesses:

JOHN A. O'BRIEN,
 J. A. HURDLE.