

(No Model.)

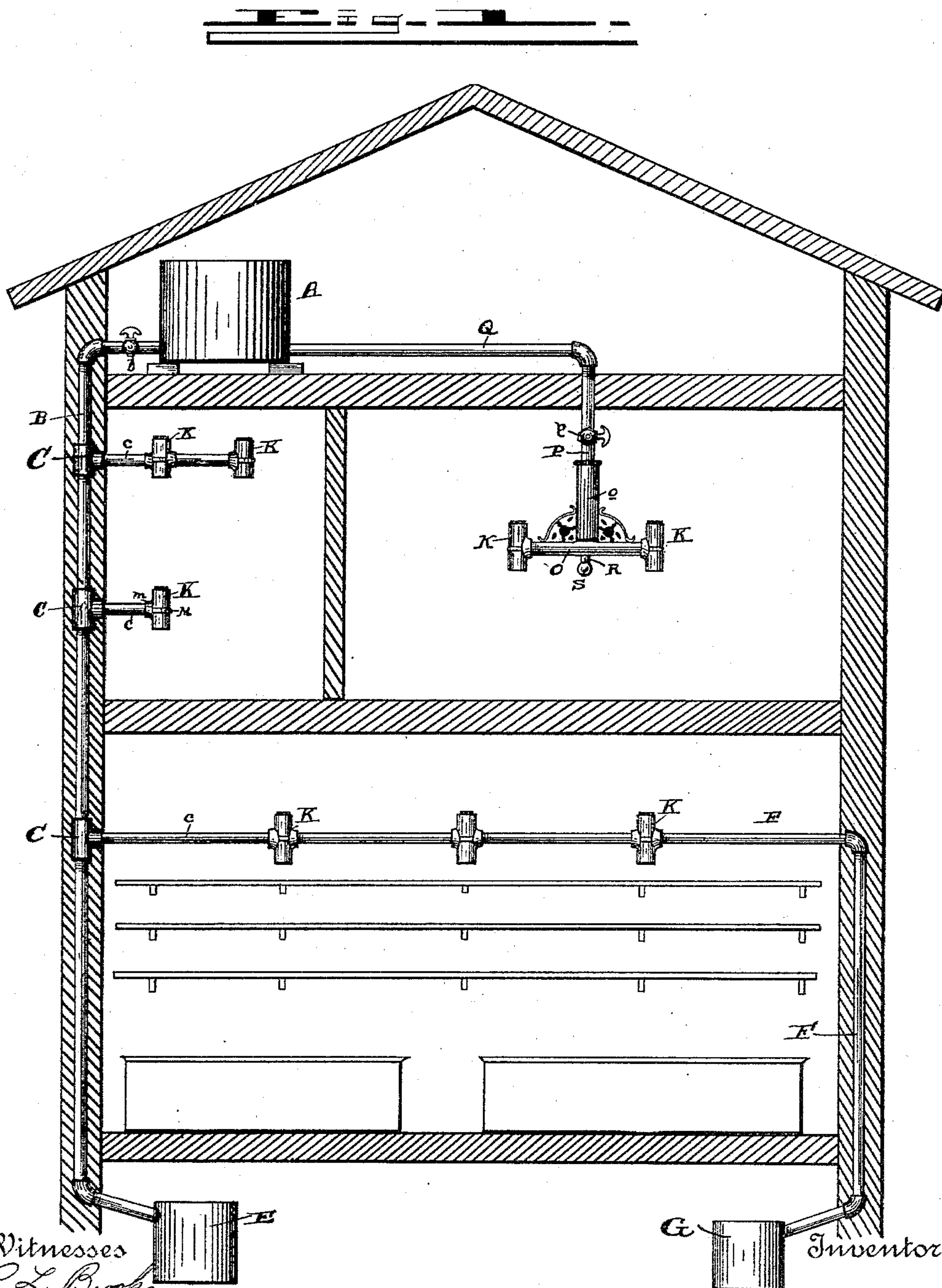
2 Sheets—Sheet i.

W. SNYDER.

APPARATUS FOR BURNING FLUID HYDROCARBONS.

No. 412,133.

Patented Oct. 1, 1889.



Witnesses

P. L. Brooks.

A. E. Towell

Inventor

Walter Snyder

By his Attorney

W. Alexander

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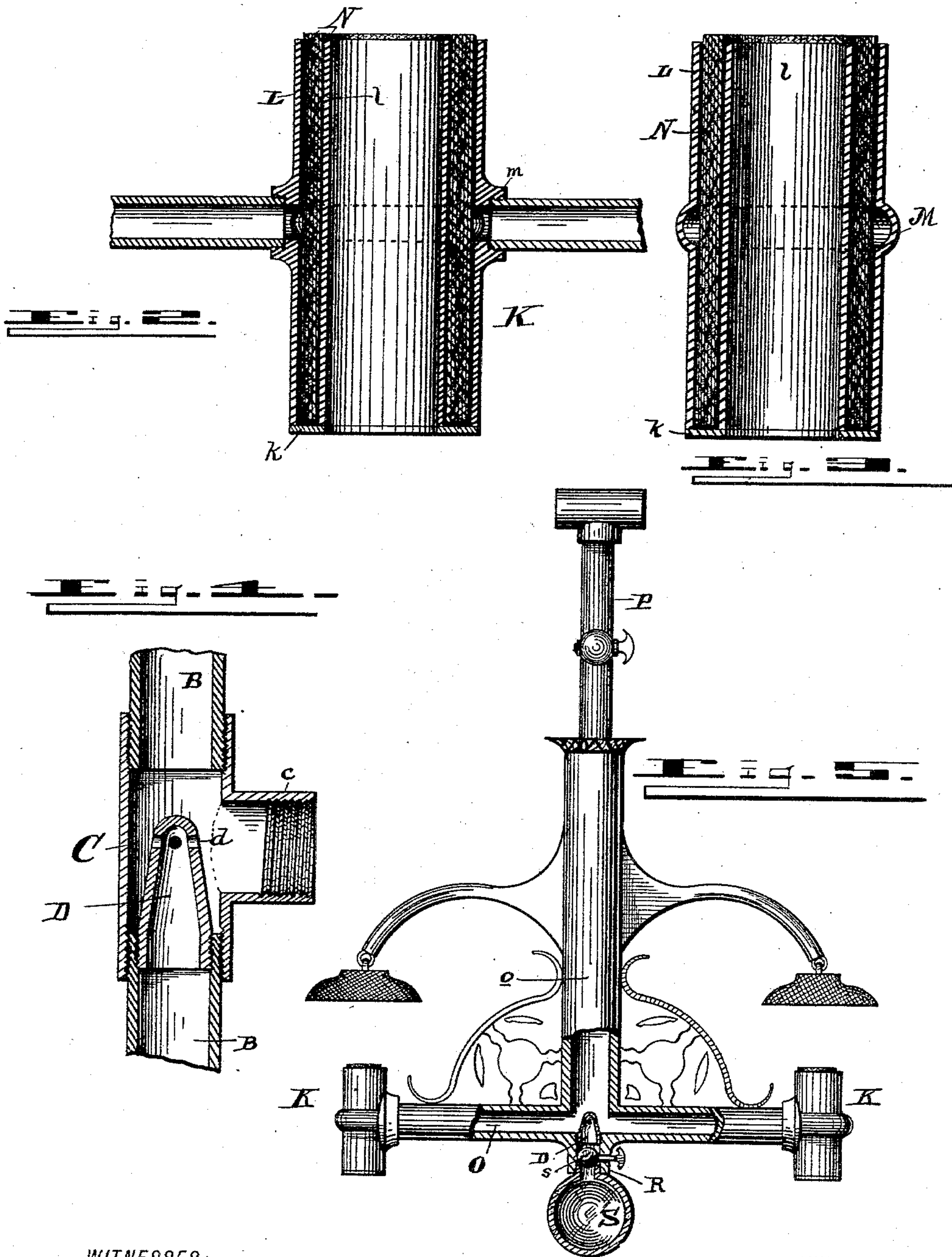
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A. E. Towell

INVENTOR

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UNITED STATES PATENT OFFICE.

WATSON SNYDER, OF PETOSKEY, MICHIGAN.

APPARATUS FOR BURNING FLUID HYDROCARBONS.

SPECIFICATION forming part of Letters Patent No. 412,133, dated October 1, 1889.

Application filed March 12, 1889. Serial No. 302,941. (No model.)

To all whom it may concern:

Be it known that I, WATSON SNYDER, of Petoskey, in the county of Emmett and State of Michigan, have invented certain new and
5 useful Improvements in Apparatus for Burning Fluid Hydrocarbons; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form
10 part of this specification, in which—

Figure 1 is a sectional elevation of a building equipped with my improved illuminating devices and system. Fig. 2 is a sectional view
15 through one of the burners; Fig. 3, a similar view at right angles to the section in Fig. 2; Fig. 4, a detail sectional view of one of the drip-plugs; Fig. 5, a sectional elevation of a chandelier.

20 This invention is an improved apparatus to burn fluid hydrocarbons for illuminating purposes; and it consists in the novel construction of the burning devices and in the arrangement and construction of parts for supplying the hydrocarbon oils thereto, whereby
25 each burner may be supplied with a constant stream of oil and yet be prevented from overflowing, all of which will be hereinafter explained.

30 The invention is designed to take oil from a reservoir and distribute it through pipes to burners located in fixed positions and to pass oil through and around the burners successively, supplying each with the necessary
35 quantity for burning and conducting the oversupply or drip to a proper receptacle.

Referring to Fig. 1 of the drawings by letters, A designates the reservoir for containing hydrocarbon oils, located in the upper part
40 of the building, and from which the fluid is conducted off by piping.

B designates a pipe leading downward along the side wall of the house and provided with a stop-cock *b* near the reservoir.
45 It being desired to have a light in the upper room, a T-joint C is put into pipe B and a horizontal pipe-connection *c* is connected to the branch of the T. On the end of arm *c* is secured a burner K, which is
50 composed of two tubular concentric walls L *l*,

the outer one L being provided about centrally with a bulb or bead M and a screw-threaded nipple *m*, as shown in Figs. 2 and 3, by which it is connected to arm *c*. The lower
ends of the walls L *l* are connected by an annular ring *k*, as shown, and a wick N is inserted between the same, which may be of
55 any suitable material and may have proper raising and lowering devices (not shown in the drawings) which occupy the space between
60 walls L *l*, but bead M forms an annular chamber around the burner communicating with nipple *m*, and thus with pipe *c*.

D designates a conical drip-plug, which may be secured in the vertical lower end of
65 joint C, so that its upper end projects above the bottom of pipe *c*. The plug is perforated at its upper end, as at *d*, to permit the escape of oil from pipe *c* into the lower section of
70 pipe B, as shown. Now if oil is permitted to enter pipe B from the reservoir it will drop therethrough until it is stopped by plug D, when it passes into pipe *c* to burner K, saturating the wick therein and supplying oil
75 thereto, passing around the wick in the chamber formed by bead M, and rises therein and in pipe *c* until it escapes through the openings in plug D into the lower section of pipe B. Other burners may be similarly connected to
80 the vertical portion of pipe B, as is evident, the oil successively passing through the burners, the branch pipes, back to and through the drip-plugs, as is evident, said plugs controlling the amount of oil supplied to the
85 burners and preventing overflowing thereof.

Where two or more burners are employed in the same room they may be arranged in the manner indicated by providing them with additional nipples. For instance, in Fig. 1 a
90 series of three burners are shown in the lower apartment. The first burner is connected to the vertical limb of pipe B by a horizontal branch pipe *c*. The next burner is connected to the first by a second joint of pipe, which engages nipples projecting from beads M of
95 the burners, and the third burner is similarly connected to the second, and so on throughout the series. If arranged in the same plane, the oil will circulate through the horizontal joints of piping and annular cham-
100

bers of the burners back to supply-pipe B, being kept from overflowing by the perforated drip-plug, as above described, through which it escapes by suitable piping to a drip-reservoir E in the cellar of the building.

Where the burners are arranged in series, as described, I preferably connect the last one with a drip-pipe F, as shown, which conducts the surplus oil to a receiver G, as indicated. The oil in the latter instance flows past and around the several burners, supplying each in turn with fuel.

Fig. 5 shows the burners arranged in chandelier form. In this a horizontal pipe O bears at its ends burners K K, as described, and is connected centrally to a vertical tubular stem o, which telescopes with a vertical pipe P, so that the burners can be raised or lowered, the stem and pipe being mechanically connected in any proper manner to permit this adjustment. Pipe P is supplied with oil from reservoir A by a pipe Q, and is properly valved, as at p, to regulate the supply. Just below stem o is a short tubular depending nipple R, formed with or secured to pipe O and opening therein. In said nipple is secured a plug D, similar in construction to those already described, which will keep pipe O partly full of oil, but prevent entire filling thereof.

S designates a drip-receiver, preferably made of glass, which is screwed into the end of nipple R and receives the oil dripping through the plug, and s is a stop-cock above the receiver by which the flow of oil can be cut off while receiver S is being removed and emptied.

The supply of oil admitted to pipe O is readily regulated by valve p, so that only suf-

ficient oil is kept in pipe O to support the flame and little drip will enter receiver S.

The pipes should not be permitted to fill with oil, but instead the oil is let drip therein in sufficient quantity to only supply the burners, so that there shall be but little drip, and overflow is avoided.

Having thus described my invention, what I claim is—

1. The combination of a series of burners and an oil-receptacle with the supply-pipes connecting said oil-receptacle and burners, and the perforated drip-plugs in said supply-pipes, whereby overflow of the burners is prevented, and a drip-receptacle, all substantially as specified.

2. The combination of the reservoir supply-pipe, the tubular burner, the horizontal pipe connected to said burner and supply-pipe, and the conical drip-plug at the junction of and within said pipes, all substantially as set forth.

3. The combination of the reservoir, the valved supply-pipe connected therewith, the horizontal pipe connected to supply-pipe, the plug D at the junction of said pipes, the series of burners K K, connected to said horizontal pipe, and drip-pipe and receiver, all substantially in the manner and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WATSON SNYDER.

Witnesses:

T. H. ALEXANDER,
P. L. BROOKS.