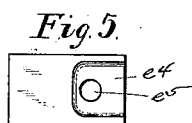
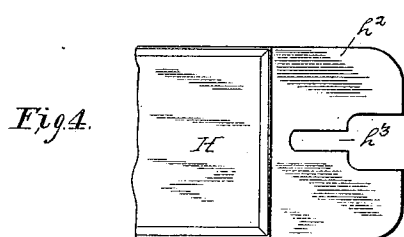
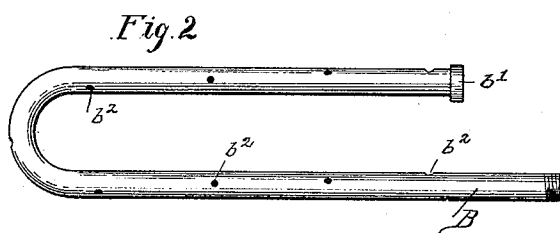
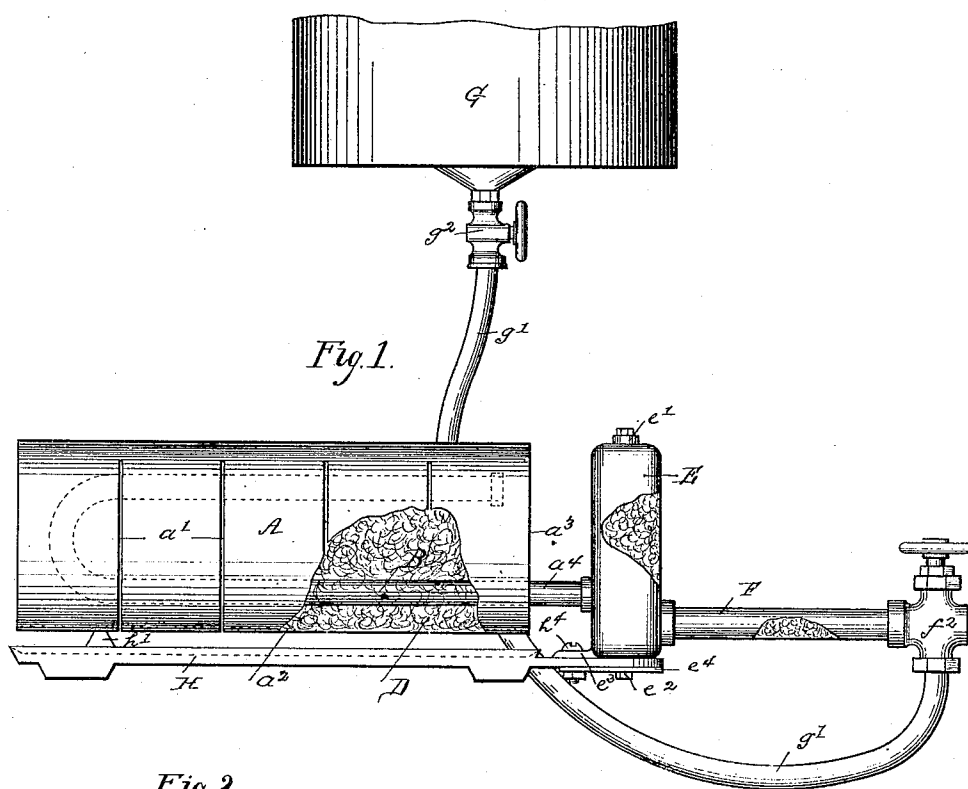


No. 807,327.

PATENTED DEC. 12, 1905.

E. SPENCER.  
HYDROCARBON FLUID BURNER.  
APPLICATION FILED DEC. 14, 1904.



*Witnesses:*

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# UNITED STATES PATENT OFFICE.

ELY SPENCER, OF JACKSONVILLE, FLORIDA.

## HYDROCARBON-FLUID BURNER.

No. 807,327.

Specification of Letters Patent.

Patented Dec. 12, 1905.

Application filed December 14, 1904. Serial No. 236,776

*To all whom it may concern:*

Be it known that I, ELY SPENCER, a citizen of the United States, residing at Jacksonville, in the county of Duval and State of Florida, have invented certain new and useful Improvements in Hydrocarbon-Fluid Burners, of which the following is a specification.

My invention relates to improvements in hydrocarbon fluid or oil burners of that class in which the burner is adapted to be placed in a cooking or heating stove or grate and to have the oil fed to same from a suitable tank by gravity; and the especial object of my improvements is to produce a burner which will be cheap to construct and which will secure a thorough distribution of the oil and a perfect generation of gas from the oil, thus effecting complete combustion.

A further object is to provide means by which the gas generated cannot exert sufficient pressure to check the inflow of oil to the burner.

My invention consists generally of a cylindrical burner, which also serves as a generating-chamber, of a storage-reservoir connected with said generator-burner, with means for conducting oil through said reservoir to the burner from a suitable tank, and in means for thoroughly distributing the oil through the generator-burner, the latter being packed with asbestos or other suitable non-combustible absorbent material.

Having the foregoing and other special objects of novelty and utility in view, I have designed the generator-burner, which will be hereinafter described in detail and which is illustrated in the accompanying drawings in the following views:

Figure 1 shows in elevation my improved burner with its attachments, a portion of the burner being broken away to show the arrangement of the oil-distributing tube, the packing, &c. Fig. 2 is a detail of the oil-distributing pipe. Fig. 3 is a detail of the reservoir used with my burner. Figs. 4 and 5 are details showing the supporting-base of the burner and means for attaching the storage-reservoir to the base.

Referring to the drawings in detail, A represents my improved generator-burner, which is formed of sheet metal of suitable thickness bent into cylindric form and having along its sides semiannular slots  $a'$  and along its bottom a longitudinal aperture  $a^2$ , said slots and aperture serving as vents for the escape

of gas generated within the burner. In the head  $a^3$  of the burner is a suitable opening through which extends a pipe  $a^4$ , the inner end of which is connected with the oil-distributing pipe B. This pipe is shown as a section of tubing bent into U shape and having one end closed by cap  $b'$  and having its sides perforated with a series of holes, as  $b^2$ , which are preferably arranged around the pipe in the form of a spiral. This pipe extends substantially the full length of the interior of the generator-burner and serves as a means of distributing the oil throughout the burner. The asbestos packing D, with which the cylinder is filled, surrounds the pipe B on all sides and takes up by capillary attraction the oil as it escapes through the holes  $b^2$ . Air entering the aperture at the bottom of the burner A will mix with the oil, and thus form a combustible gas in a manner well known in the art. The outer end of the pipe  $a^4$  is suitably connected with one side of the reservoir E, to the opposite side of which is connected one end of a feed-pipe F. The reservoir is of cast metal, preferably in the form shown, and is supplied with threaded apertures  $e'$   $e^2$  at the top and bottom, which are closed by suitable screw-plugs, which may be removed for the purpose of cleaning out the reservoir and removing and renewing the asbestos packing, with which said reservoir is preferably filled. This reservoir is supplied from the tank G and holds sufficient fluid to serve as a constant and regular supply of fluid to the burner and also serves as a check for the heat from the burner, working back through the pipes F and  $g'$  to the storage-tank. To the outer end of the pipe F is screwed an ordinary hand-operated valve  $f^2$ , with which is also connected the oil-supply pipe  $g'$ , which may be of any desired length and connected at its opposite end with oil-supply tank G, a tank-valve  $g^2$  being inserted in said pipe  $g'$  at a point near said tank. The tank in practice will be placed at a point above the burner, so that the oil will flow by gravity from the tank to the burner when the valves  $g^2$   $f^2$  are open. These valves control the outflow of the oil, and therefore the inflow into the burner A.

In order to furnish a suitable support for the burner, I provide a pan H, upon the upper side of which is formed a transverse rib  $h'$ , upon which one end of the burner rests. The pan is also formed with an extension  $h^2$ , which is bifurcated, as shown at  $h^3$ , to receive

the bolt  $h^4$ , which passes through a lug  $e^3$  on the bottom of the reservoir E and also through a washer  $e^4$ , which is placed under the platform  $h^3$ , with its opening  $e^5$  registering with the opening  $h^3$ . When the bolt  $h^4$  is inserted through said lug-opening  $h^3$  and hole  $e^5$  and the nut thereon screwed up, the reservoir will be locked in position. If the oil should by accident be fed to the generator-burner more rapidly than the gas could be generated, it would drip into the pan H and be consumed as soon as the gas was ignited in the use of the burner. The rib  $h'$  will hold the burner a sufficient distance above the pan to provide for free circulation of air around the burner, thus facilitating the mixture of the air with the gas as the latter escapes from the slots and apertures in the burner. While I have shown the slots  $a'$  as extending around three-quarters of the circumference of the cylinder, it will be apparent that they may be made longer or shorter as the necessities or use of the device may indicate.

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

In a burner for hydrocarbon fluids, a cylindrical burner having semi-annular slots and packed with a non-combustible absorbent, means for distributing fluid throughout said burner consisting of a pipe bent in U shape and having holes therethrough, a fluid-storage reservoir arranged exteriorly of said burner and communicating with said bent pipe, said reservoir supplied with a packing material, means for conducting fluid to said reservoir, a base supporting said burner and reservoir and means for detachably connecting the reservoir to the base.

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

ELY SPENCER.

Witnesses:

L. A. DAVIS,  
JULIAN H. DART.