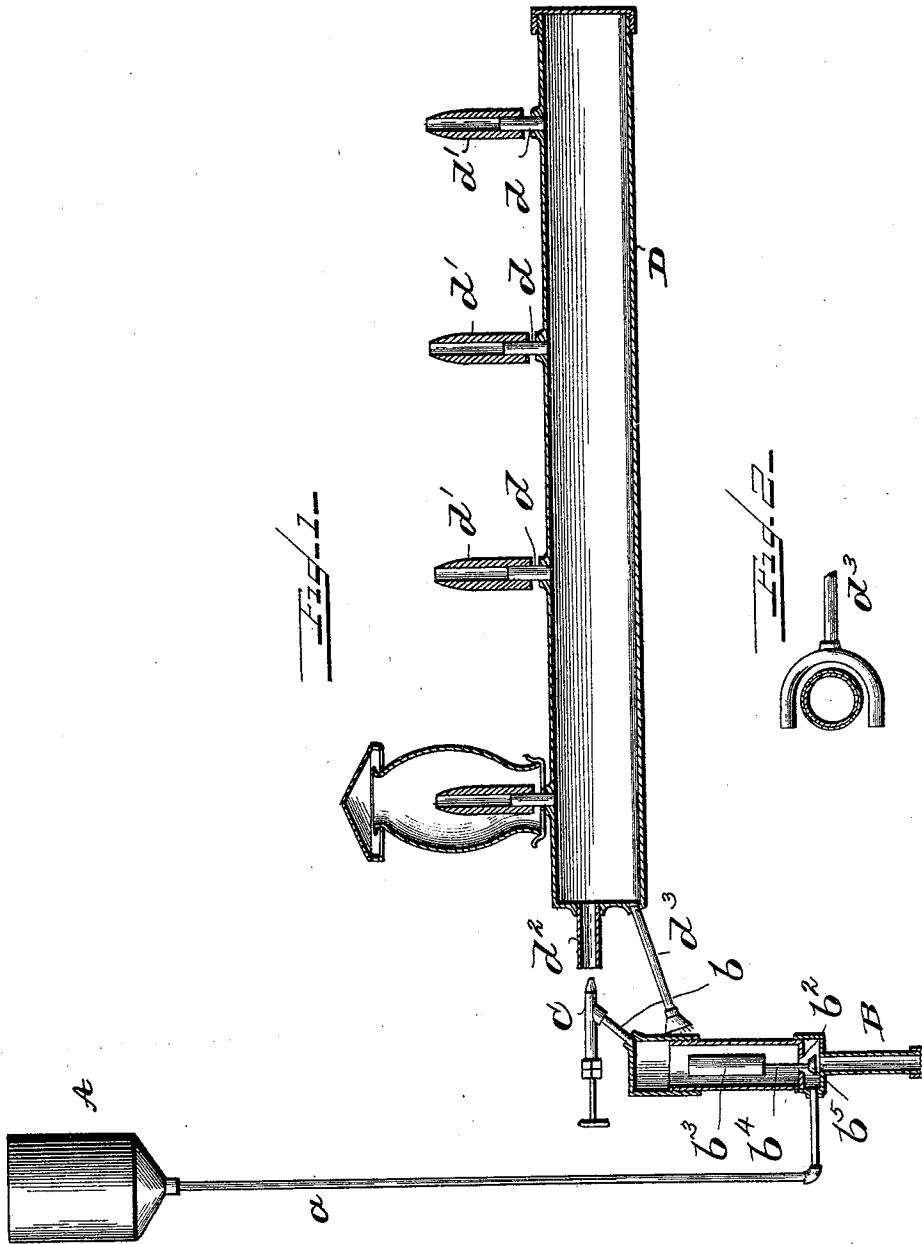


(No Model)

C. H. ENGLISH.
GAS BURNER.

No. 582,626.

Patented May 18, 1897.



WITNESSES—

J. A. Pauberschmidt,
August Donath,

INVENTOR—

Charles H. English
By Edwin S. Clarkson
his attorney

UNITED STATES PATENT OFFICE.

CHARLES H. ENGLISH, OF WASHINGTON, DISTRICT OF COLUMBIA.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 582,626, dated May 18, 1897.

Application filed June 25, 1896. Serial No. 596,917. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. ENGLISH, a citizen of the United States, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Gas-Machines; 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 gas-machines.

It consists of a hydrocarbon-vaporizing retort, a burner for heating the same, a mixing-tube, and a chamber in which the mixed vapor and air accumulates, having one or more gas-outlets surmounted with hoods of refractory material susceptible of being heated to a point of incandescence.

The object of my invention is to produce a cheap, simple, and efficient gas-machine that can be placed in stores, depots, pleasure-grounds, dwellings, &c., at a minimum cost.

In the drawings, Figure 1 is a central longitudinal section of my machine. Fig. 2 is a detail view of the vaporizing-burner.

A represents an oil-reservoir of approved pattern; *a*, the supply pipe or tube from the reservoir.

B is the generator, from which extends a tube *b*, through which the vapor passes from the generator.

b' is a false bottom in the generator, having an aperture *b*².

*b*³ is a float in the generator, having a depending stem *b*⁴, to which is secured a conical valve-plug *b*⁵, which is adapted to be seated in the aperture *b*².

C is an air-jet immediately above the vapor-tube *b*.

D is the vapor and air accumulating and equalizing chamber for the mixed vapor and air. Said equalizer and accumulator, it will be seen, is of greater diameter than the mixing-tube, thereby reducing the friction and equalizing the pressure of gas passing to the burners. I ascertained by experiment that an attempt to carry the gas through an ordinary pipe would result in the burner nearest the supply absorbing the greatest portion of the gas and each successive burner a less

quantity, and an attempt to increase the supply would result in the burner nearest the supply receiving an excess, the intermediate burner about the proper quantity, and the farthest burner an insufficient quantity.

d are the gas-outlets, of which there may be one or more, each of which is surmounted with hoods *d'* of refractory material susceptible of being heated to a point of incandescence.

*d*² is the mixing-tube, extending from the chamber D.

*d*³ is a small burner extending from the gas-conduit and provided with a flaring mouth semicircular in shape and when in proper position extending partially around the generator, whereby a larger surface of flame is directed against the generator.

The operation is as follows: Oil is permitted to flow from the reservoir into the generator or retort, and as soon as the generator has a certain amount of oil the float rises and stops the supply of oil by means of the valve *b*⁵ closing the opening *b*³ in the false bottom of the generator. The generator is then heated in any desired manner, thereby vaporizing the oil in the generator, such vapor passing up through the tube *b* to the tube *d*², where it is mixed with air supplied by the air-jet C. It then passes into the accumulator D, from whence it is consumed through the burners. The continued generation of gas flowing into the conduit forms a cushion which is not entirely relieved by the outlets *d*. Consequently there is a recoil. This recoil is relieved by the gas flowing out through the burner *d*³, where it is consumed and utilized to heat the generator and continue to vaporize the oil in the generator.

In actual use it has been found that this machine will furnish eight lights on a hundred-foot conduit at a cost of one and a quarter cents per hour.

What I claim, and desire to secure by Letters Patent, is—

1. The combination of a supply-reservoir, a hydrocarbon-vaporizing retort, a burner for heating the retort, a mixing-tube and a vapor and air accumulator and equalizer having one or more gas-outlets surmounted with hoods

of refractory material, susceptible of being heated to a point of incandescence, as and for the purpose described.

2. The combination with a supply-reservoir
5 and a hydrocarbon-vaporizing retort, of a vapor and air accumulator and equalizer having one or more gas-outlets surmounted with hoods, a mixing-tube and a burner-tube extending directly from the gas-conduit,

said burner being fed by a direct recoil of gas from the conduit to heat the retort, above referred to.

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

CHARLES H. ENGLISH.

Witnesses:

B. C. HALL,

F. A. SEBRING.