(No Model.)

E. A. EDWARDS.

HYDROCARBON GAS GENERATOR AND BURNER.

No. 495,726. Patented Apr. 18, 1893.

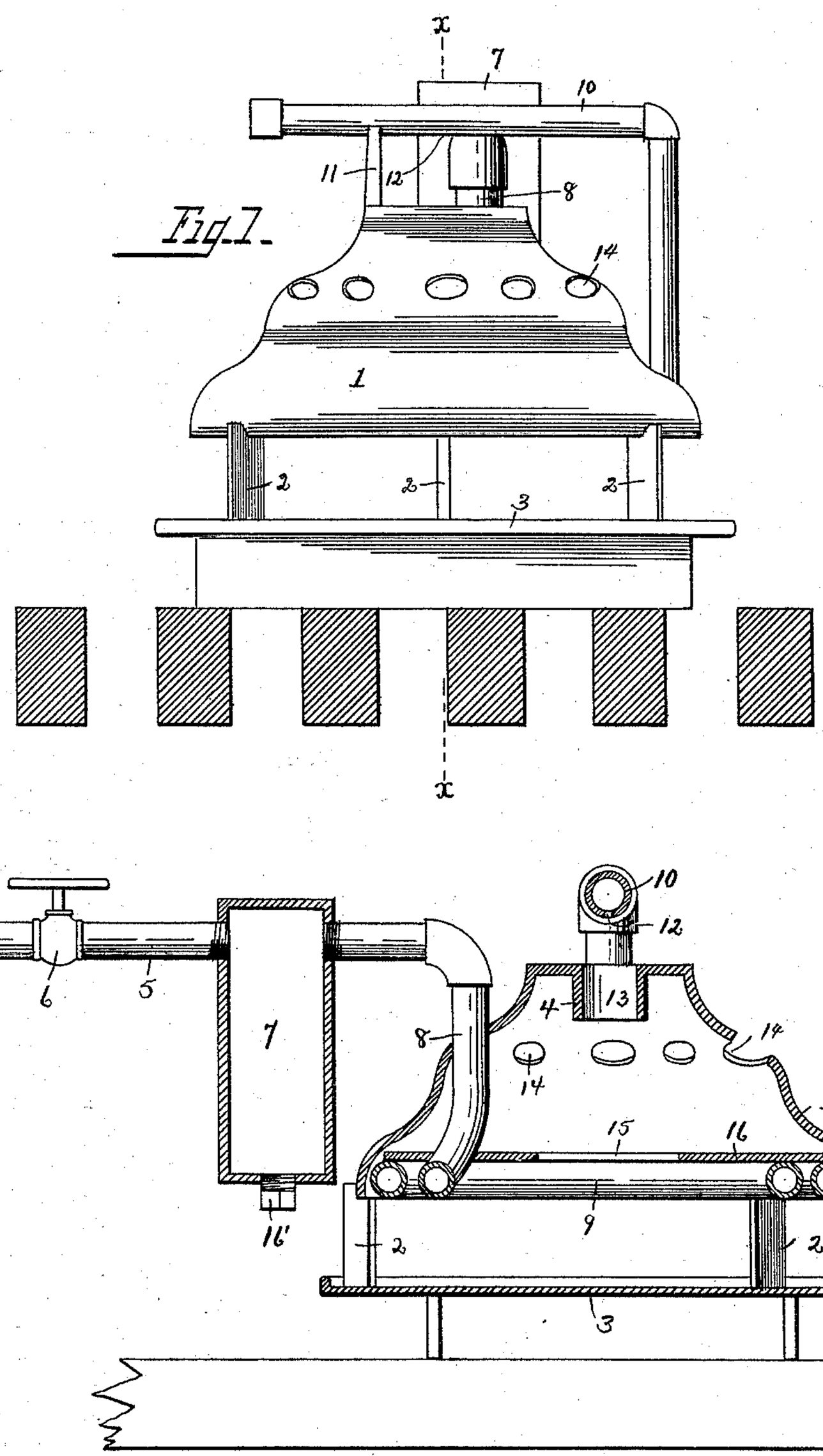

Fig. 1.

Fig. 2.

WITNESSES.

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EVAN A. EDWARDS, OF TOLEDO, OHIO.

HYDROCARBON-GAS GENERATOR AND BURNER.

SPECIFICATION forming part of Letters Patent No. 495,726, dated April 18, 1893.

Application filed January 12, 1892. Serial No. 417,784. (No model.)

To all whom it may concern:

Be it known that I, EVAN A. EDWARDS, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Hydrocarbon-Gas Generators and Burners; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

This invention relates generally to hydrocarbon burners, and particularly to that class thereof known as retort vaporizers, and it is the object of my invention to provide a burner of this description that shall be exceedingly cheap, in construction, efficient in operation, and one in which all sediment can be removed from the burner.

My invention consists in the peculiar construction of the various parts and their novel combinations or arrangements, all of which will be fully explained hereinafter, and pointed out in the claim.

In the drawings forming a part of this specification Figure 1 is a front elevation of my improved burner, arranged upon the grate of a stove, and Fig. 2 is a sectional view of the same.

In carrying out my invention I employ a shell or casing 1, essentially conical in shape, open at the bottom, and supported by means of the legs 2, 2, upon a flash pan 3, which pan rests upon the grate of the stove, said grate being shown in section. The apex of the shell is also open and provided with a depending annular flange 4, thereby producing a cylindrical chamber 13 at the top of the shell, as clearly shown in Fig. 2.

5 indicates an oil supply pipe, which conveys the oil to the vapor generator 7, the supply of oil being regulated by means of a valve cock 6. A vapor conveying pipe 8 leads from the generator 7 into the shell 1, and within this shell near the base the said pipe is coiled several times, as shown at 9, (Fig. 2) and then carried without the shell and above the same, as shown at 10, the free end of the pipe being closed and resting upon a lug 11, formed upon the top of the shell 1. An orifice 12 is produced in the pipe 10 directly above the apex of the shell 1. A series of openings 14 is produced in this shell for the purpose of admitting air, and within the shell is arranged a plate 16, resting on the coils 9, said plate having a central opening 15 to permit the mingling of air and vapor and the combustion of the same. A screw plug 6′ is arranged in the bottom of the generator 7, and by removing said plug, all sediment, &c., can be withdrawn from the chamber.

In operation the valve cock 6 is opened, permitting the oil to flow into the generating chamber 7, whence it flows through pipe 8, coil 9, and pipe 10, through orifice 12 onto the pan 3, it here being ignited, and the heat of the oil thus burned, serves to convert the oil into a vapor, and as the chamber 7, is very close to the point of combustion, the oil within the same will be vaporized. The vapor will then be projected down through the annulus 4, into the shell where it is mixed with air which enters through openings 14 and 15 and perfect combustion ensues. The annulus 4 guides the vapor into the shell and the plate 16 serves to produce a combustion chamber, and still permit the influx of air into said chamber.

What I claim is—

In a hydro-carbon gas generator and burner, a casing, an oil supply pipe, a generator, a gas pipe leading from the generator and passing into the casing and coiled, then passing over the casing and having a discharge orifice, a primary mixer below the orifice, and a secondary mixer below the primary mixer.

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

EVAN A. EDWARDS.

Witnesses:

CARROLL J. WEBSTER,

GRACE E. LEHANEY.