

987,438.

T. A. DAVIS.
GASOLENE GAS GENERATOR.
APPLICATION FILED APR. 5, 1909.

Patented Mar. 21, 1911.
2 SHEETS—SHEET 1.

Fig. 1.

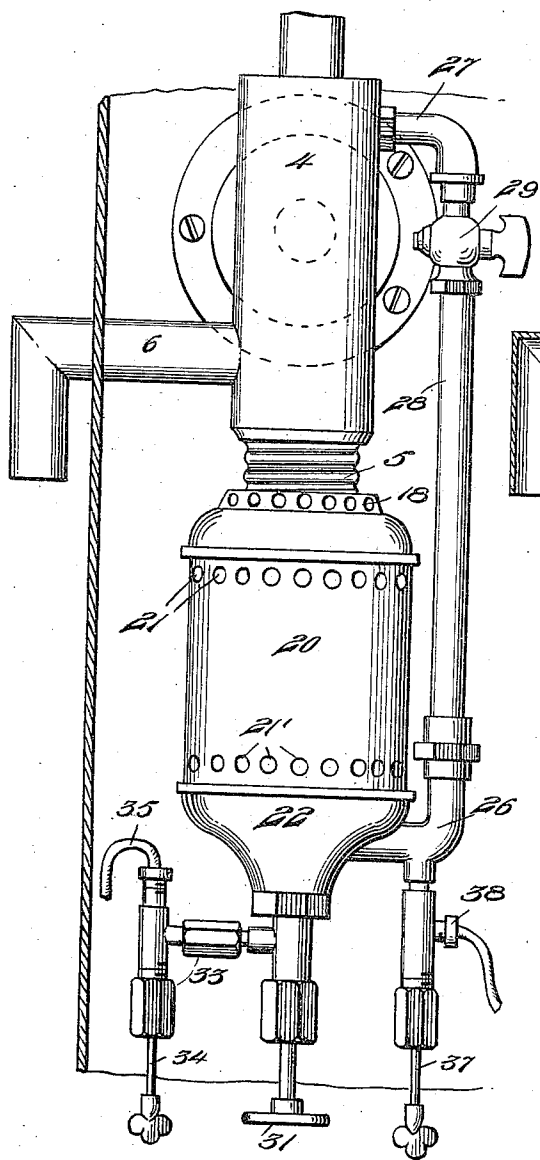
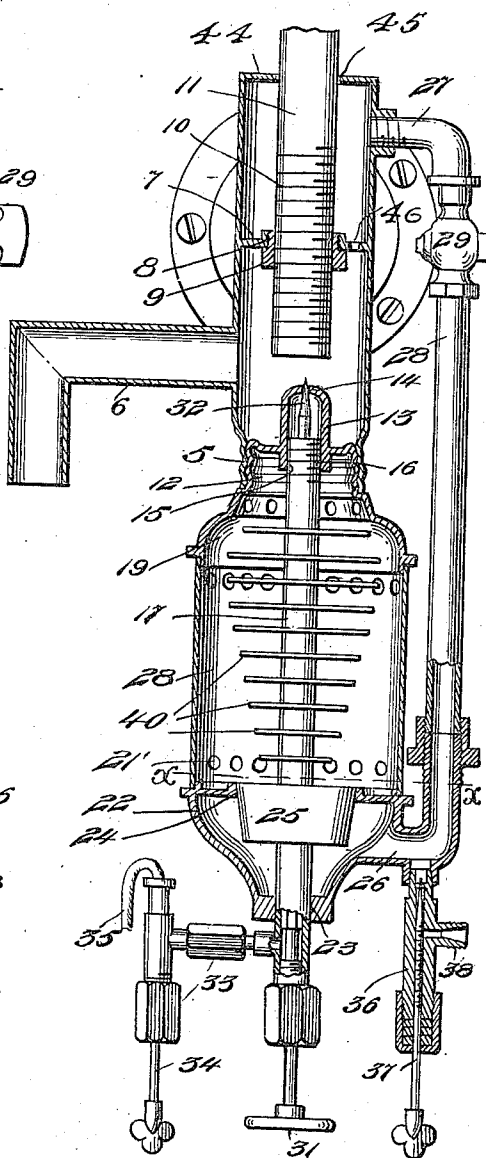


Fig. 2.



Thomas A. Davis.
Inventor

Witnesses
B. M. Offutt,
M. C. Moore

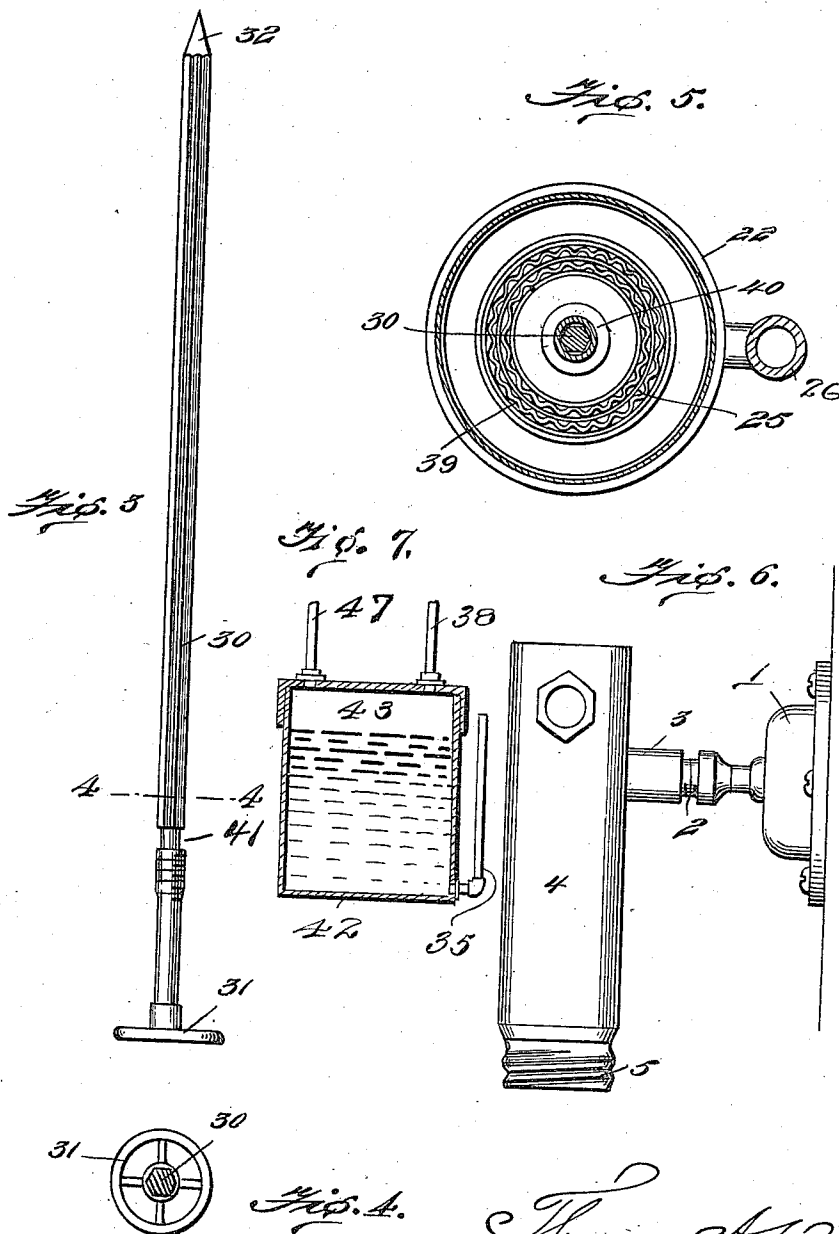
By J. P. Moore
Attorney

987,438.

T. A. DAVIS.
GASOLENE GAS GENERATOR.
APPLICATION FILED APR. 5, 1909.

Patented Mar. 21, 1911.

2 SHEETS—SHEET 2.



Witnesses
M. Offutt,
H. C. Moore.

Thomas A. Davis,
 Inventor
James Moore,
 Attorney

UNITED STATES PATENT OFFICE.

THOMAS A. DAVIS, OF FINDLAY, ILLINOIS.

GASOLENE-GAS GENERATOR.

987,438.

Specification of Letters Patent.

Patented Mar. 21, 1911.

Application filed April 5, 1909. Serial No. 487,880.

To all whom it may concern:

Be it known that I, THOMAS A. DAVIS, a citizen of the United States, residing at Findlay, in the county of Shelby and State of Illinois, have invented certain new and useful Improvements in Gasolene-Gas Generators, of which the following is a specification.

My invention relates to improvements in gas generators, and refers particularly to an apparatus for generating gas from gasolene or similar fluid, and the leading object of my invention is the production of an apparatus of this character in which a gas of high illuminating power will be produced from a small amount of fluid; which apparatus will be entirely safe, which is easy to operate and control and which is capable of production at a low price, thus insuring a gasolene gas generator which will be thoroughly practical from every point of view.

To attain the desired object, my invention consists of a gasolene gas generator embodying novel features of construction and combination of parts substantially as disclosed herein.

In order that the details of construction of my generator and its operation may be fully understood as well as its numerous advantages be fully appreciated, I have illustrated in the accompanying drawings a gasolene gas generator constructed in accordance with and embodying my invention.

Figure 1, represents a side elevation of my complete apparatus. Fig. 2, represents a view partly in elevation and partly in vertical section of the apparatus. Fig. 3 represents a side elevation of the needle. Fig. 4 represents a cross-sectional view of the needle valve on line 4-4 of Fig. 3. Fig. 5, represents a transverse sectional view on line $x-x$ of Fig. 2. Fig. 6, is a side elevation of the support and chamber, and Fig. 7 represents a vertical sectional view of the gasolene supply tank.

Referring by numerals to the drawings: the numeral 1 designates a support or bracket which is connected to the wall or other stationary support and is provided with a threaded stud 2 engaging the threaded nipple 3, provided on one side of the chamber 4, having its lower portion provided with a threaded collar 5, also formed with the air intake pipe 6, and having a central division wall 7, provided with threads to receive the threads 8 on the sleeve 9. The

sleeve 9 is interiorly threaded to receive the thread 10 on the gas mixing tube 11 which conveys the gas to the service pipes where it is consumed at the burners, said threads serving to adjust the tube to regulate the amount of air to be mixed with the gas. Engaging the threaded collar 5 is the cap plate 12, having a nipple 13, provided with a needle valve opening 14, and also provided with threads 15 to receive the upper threaded end 16 of the generator 17. The cap plate is also provided with a series of openings 18, and to the enlarged portion 19 of the cap plate is connected the upper end of the drum or casing 20, provided with a series of openings 21. To the lower portion of the drum below the openings 21' is fitted the casing 22, having the opening 23 to receive the oil tube, also provided with the tapered opening 24 to receive the burner casing 25, and at one side provided with the elbow 26, with which and the elbow 27, communicating with the upper portion of the chamber, is connected the pipe 28 provided with a valve or plug 29.

In the generator 17 which is located in the combustion chamber is fitted the vertically disposed rod 30, having the operating head 31 and the needle or pointed end 32 adapted to control the valve opening 14, and leading to one side of the generator 17 is the pipe 33, provided with the needle valve 34, and from said pipe leads the gasolene supply tube 35, which extends to the bottom of the tank 42 for supplying the gasolene. Communicating with the elbow 26, is the pipe 36, controlled by a needle valve 37, and provided at one side with an inlet 38, which is connected with the gasolene tank 42 at the top, and which feeds the gas charged air 43 at the top of the body of gasolene, air being supplied to the tank through the pipe 47.

In the seat provided at the lower portion of the combustion chamber fits the burner, which consists of a casing provided with a series of corrugated sections 39, arranged to provide a proper diffusion in the combustion chamber, and above the burner and surrounding the generator 17, are a series of disks 40, which are arranged parallel and extend the entire distance, practically, of the combustion chamber to provide a greater heating surface in said chamber.

To start the generator, close valve 29, and also valve 34, open valve 37, which allows the gas charged air from the pressure tank

to enter the burner, and the same can be lighted through the openings 21'; after the same has burned sufficient time to heat the burner, close the valve 37 and open valves 5 29 and 34, the latter allowing the gasolene to be discharged into the generator 17, whence its passage is regulated by the needle valve 32, while the opening of valve 29 permits the gas to come back and supply 10 the sub-flame.

It will be observed by reference to Fig. 2 that the chamber 4 is provided with a top 44 having a central opening 45 through which the pipe 11 extends, while formed in 15 the wall 7 is an opening 46 affording communication between the lower portion of the chamber 4 and the closed portion above the wall. Leading from the said upper portion is the pipe 27 which when the device is in operation receives the gas passing 20 into said upper portion through the opening 46 and feeds said gas to the burner.

From the foregoing description taken in connection with the drawings, the operation 25 of my generator will be readily understood, and briefly stated; the gasolene is fed to the lower portion of the vertical generator, and the gaseous vapor passes through the burner into the combustion chamber, where 30 said gaseous vapor is ignited and heats the combustion chamber to a high degree of heat, the gasolene in this condition passes through the vertical generator through the valve thereof into the mixing chamber 35 where it commingles in the lower portion of said chamber with the air from the outside and produces the gas of high illuminating power which then enters the supply pipe and is conducted to the service pipes where 40 it is utilized in the well known manner.

It will be noted that the entire apparatus is preferably placed in a suitable housing or casing, and it will also be observed that the rod which is located in the gas generating 45 pipe is of hexagonal shape throughout, and at its lower end communicates with the annular recess 41, which construction is of importance in that the fluid enters the chamber provided by said recess and passes 50 upward with ease through the passages provided by the hexagonal faces. The threads on this rod are below the annular recess for the admission of the fluid, and this arrangement takes a large part of the strain 55 caused by the pressure on the packing nut and thereby prevents leakage. Also in the manipulation of this valve to open the same, this arrangement prevents the same from

being unscrewed too far and blowing out, as it will only come down so far before en- 60 countering the packing nut. The peculiar hexagonal shape of the rod in addition to providing the oil ducts or channels, acts as a reaming or cleaning tool, in that the sharp edges serve to cut the sediment left by the 65 fluid, and thus it keeps the generating tube clean and entirely free from foreign matter, the rod being removed to permit said material to drop from the tube 17.

It is evident that I provide a generator 70 which, by heating with the gas charged air from the pressure tank, eliminates the use of other material for starting the sub-flame, that I provide a generator which will be self-cleaning, and which accomplishes all 75 the purposes for which it is intended in a thoroughly efficient manner, and which will commend itself as useful and desirable.

I claim:

1. In a carbureter, the combination with 80 a drum having a generator passing therethrough, of a series of horizontally disposed disks secured on the generator, means for supplying oil to said generator, an angular-stemmed needle valve in the gener- 85 ator for controlling the passage of fluid therefrom, a chamber supported by the drum above the generator, an air inlet for the chamber, pipes leading from said chamber, and connections between one of said 90 pipes and a burner, said burner being located at the base of the drum and serving to heat the generator and disks.

2. In a carbureter, the combination with 95 a drum, of a generator passing therethrough provided with heat absorption disks, means for supplying oil to said generator, an angular stemmed needle valve in the generator for regulating the flow of the oil, a burner surrounding the generator at the base of 100 the drum, a chamber supported by the drum at the upper end of the drum and generator, inlet and outlet passages for said chamber, a pipe leading from one of said outlet passages to the burner for feeding the same, 105 and means for supplying gas to the burner to start the operation thereof, said means being connected with the burner supply pipe for supplementing the action thereof.

In testimony whereof I affix my signature, in presence of two witnesses. 110

THOMAS A. DAVIS.

Witnesses:

FRANK P. AULD,
BRAY D. TULL.