G. BOLTZ.

POWER GENERATOR.

APPLICATION FILED JULY 7, 1913.

1,141,308.

Patented June 1, 1915.

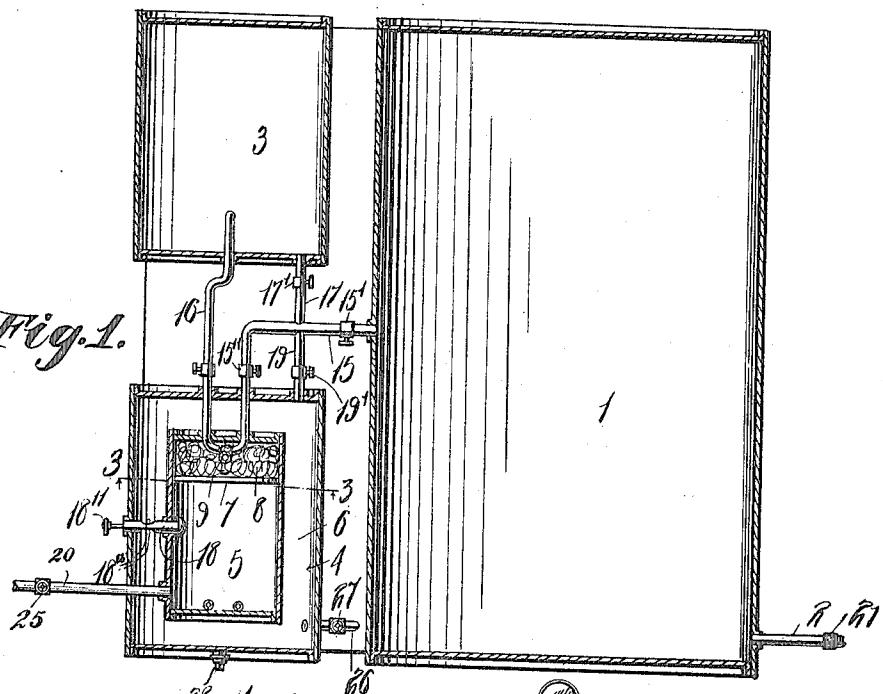


Fig. 1.

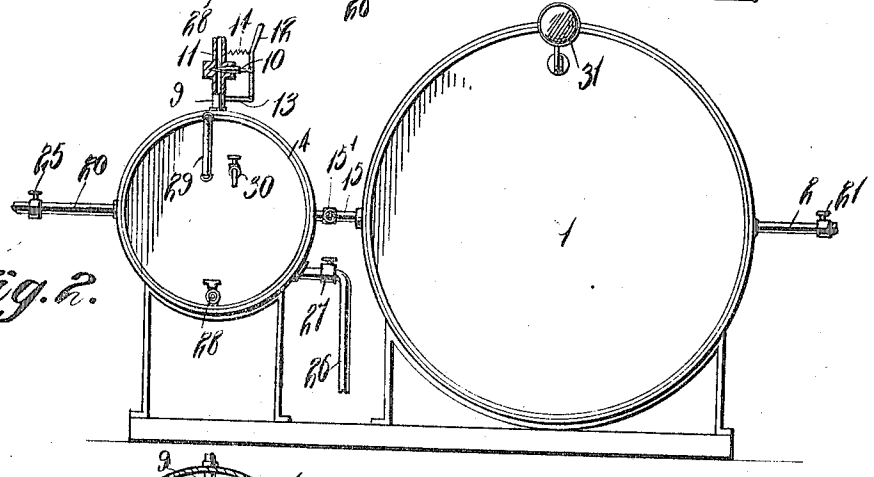


Fig. 2.

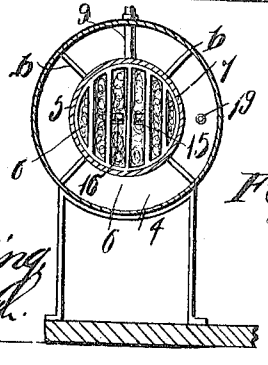


Fig. 3.

Witnesses

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THE NORRIS PETERS CO. PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE BOLTZ, OF AMY, KANSAS.

POWER-GENERATOR.

1,141,308. Specification of Letters Patent. Patented June 1, 1915.

Application filed July 7, 1913. Serial No. 777,751.

To all whom it may concern:

Be it known that I, GEORGE BOLTZ, a citizen of the United States, residing at Amy, in the county of Lane, State of Kansas, have invented certain new and useful Improvements in Power-Generators; 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.

The present invention relates to certain novel and useful improvements in an apparatus for generating power for operating engines.

In carrying out my invention it is my purpose to provide an apparatus embodying, among other features a chamber or tank wherein the combustion of a mixture of a hydrocarbon, such as gasolene, and air takes place, and into which combustion chamber is sprayed water which is introduced to the chamber under pressure, said spray of water, when it strikes the heated zone, flashing into steam, and passing from the combustion chamber with the heated gases is conducted to the engine to be operated.

A further object of my invention is the provision of an apparatus by means of which motive power may be quickly and economically generated.

With the above recited objects and others of a similar nature in view, my invention consists in the construction, combination and arrangement of parts set forth in and falling within the scope of the appended claim.

In the accompanying drawings: Figure 1 is a horizontal sectional view taken through a power generating apparatus embodying my invention. Fig. 2 is an end view. Fig. 3 is a view taken through the combustion or generator chamber and surrounding water tank on the line 2—2 of Fig. 1.

Referring now to the accompanying drawings in detail, the numeral 1 indicates a relatively large compressed air tank into which the air is forced or introduced under pressure through the pipe 2. Arranged adjacent to this air tank is a tank 3 for the hydrocarbon fluid, such as gasolene or oil, while spaced apart from the tanks 1 and 3, but adjacent thereto, is a water tank 4. Nested within this water tank is a generator 5, this latter being in the nature of a generator or tank which is similar in shape to the water tank 4, and is suitably spaced apart therefrom by braces *b* so that the space 6 between the tank 4 and the generator 5 is somewhat in the nature of a water jacket.

Arranged within the generating chamber is the grate 7 retaining a body of asbestos of some spongy form, as shown at 8, while 9 designates a tube leading to the asbestos held by the grate and extending through the adjacent wall of the chamber 5 and the wall of the water tank 4. When starting the fire at the grate, oil or other inflammable fluid is poured into this tube 9 and is ignited by any suitable means, such for instance, as a lighted oil sponge attached to the end of an iron rod which may be projected in through the tube to start the fire. This tube 9 is controlled by means of a plug valve 10 seated in the conical seat 11 formed in the pipe and actuated by the handle 12 which is pivotally mounted upon the stud 13. This plug valve is normally held in closed position by means of a coil spring 14.

Leading from the air tank 1 through the water tank 4 and into the combustion portion of the generating chamber is a pipe 15 for conducting air from the air tank to the generating chamber, while leading from the fluid or oil tank 3 is a second pipe 16 which is adapted to conduct the hydrocarbon fluid to the burner where the hydrocarbon mixes with the air entering through the pipe 15, the mixture being ignited at the grate, the ends of the two pipes 15 and 16 at the grate being turned toward each other.

In order to introduce the hydrocarbon fluid under pressure to the grate, a branch pipe 17 having a valve 17′ leads from the air pipe 15 to the hydrocarbon fluid tank 3 so that the fluid is forced from this tank under pressure through the pipe 16 and so on into the grate section of the generating chamber where it mixes with the air therein under pressure from the tank 1.

As will be seen, the mixture of the hydrocarbon and the air at the grate section of the tank being ignited, creates an intense heat within the generating chamber. Into this generating chamber is admitted water from the tank 4, this water passing under pressure through the spray pipe 18, which leads through the wall of the generating chamber 5 and the water tank 4, said pipe having inlet openings 18ª controlled by the valve 18″. In order to force the water under

pressure from the tank 4 into the chamber 5, I provide a branch pipe 19 controlled by the valve 19′ and which pipe leads from one section of the pipe 15 to and through the wall of the tank 4. It will thus be seen that the compressed air chamber which is connected with the hydrocarbon tank 2, the water tank 4 and the generating chamber 5, and the water tank and the hydrocarbon tank are also connected with this generating chamber, so that the water, the oil and air are all introduced under pressure to the generating chamber. It will thus be seen that the instant the water enters the highly heated generating chamber in the form of a spray it flashes into steam and mixes with the heated gases formed by the burning mixture of air and hydrocarbon, and this mixture of steam and gas passes through the outlet pipe 20 to the point of use, such as the engine cylinder.

It is further to be understood that controlling valves are provided for the various pipe connections. For instance, the pipe 2 leading from the compressor to the air tank is provided with a valve 21, while the pipe 15 leading from the air tank is provided with valves 15′ and 15″. Likewise the outlet pipe 20 leading from the generator to the engine is provided with a valve 25, while the pipe 26 for conducting water into the tank 4 is provided with a valve 27. The oil tank is filled through any suitable filler opening.

It will be seen that I have provided an exceedingly simple form of apparatus by which motive fluid for engines may be rapidly generated at a relatively low cost and, furthermore, I believe the power so generated will develop greater efficiency than steam made in the ordinary manner.

The tank 4 is also provided with a drain cock 28, glass gage tube 29, and water gage cock 30, while the air tank is equipped with any suitable form of pressure gage 31.

While I have herein shown and described one particular embodiment of my invention, I wish it to be understood that I do not limit myself to all the precise details of construction herein set forth by way of illustration, as modification and variation may be made without departing from the spirit of the invention or exceeding the scope of the appended claim.

What I claim is:

The combination with a tank for compressed air, a reservoir for a hydrocarbon fluid, a water tank and a generating chamber arranged spaced apart within the water tank, of a body of asbestos arranged at one end of the generating chamber, a grate member extending transversely of the generating chamber and confining the asbestos at the end of such chamber, a valved spray pipe extending through the water tank and into the generating chamber in the front of the grate, said spray pipe having a lateral port therein through which the water in the water tank may pass, said water being admitted to the generating chamber in the form of a spray, a pipe leading from the hydrocarbon reservoir to the asbestos body to supply hydrocarbon fluid thereto, a valved pipe for conducting air under pressure to the reservoir to force the hydrocarbon fluid therefrom into the generating chamber, a valved pipe for conducting air from the compressed air tank to the generating chamber where it is mixed with the hydrocarbon fluid at the asbestos body within the generating chamber, a valved pipe for conducting air to the water tank to force the water into the generating chamber, and a valved pipe for conducting the steam and heated gases generated in the generating chamber to the point of use.

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

GEORGE BOLTZ.

Witnesses:
CALEB DAGG,
BERTHA BOLTZ.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."