

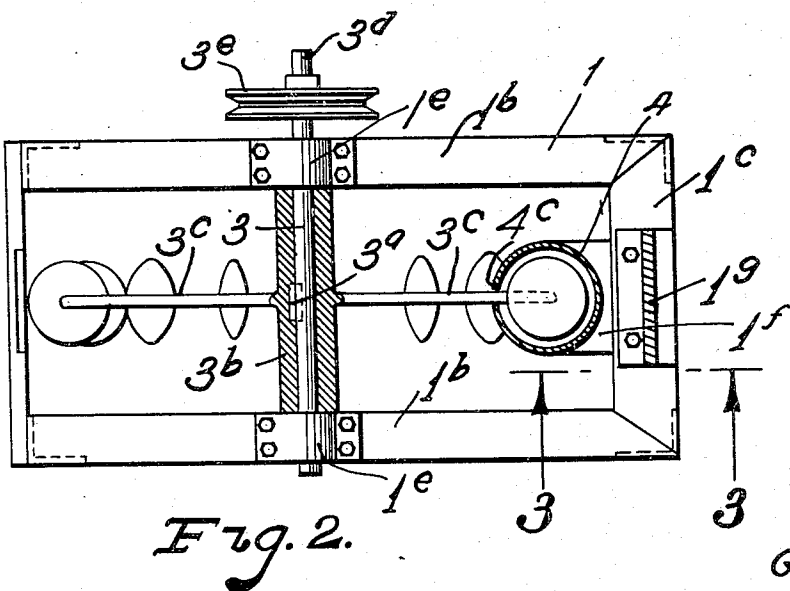
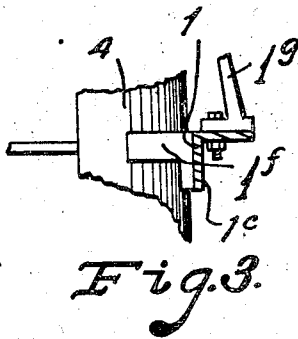
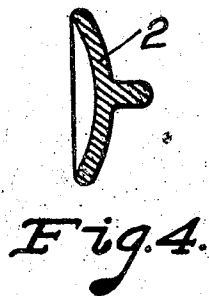
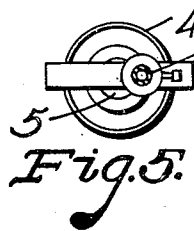
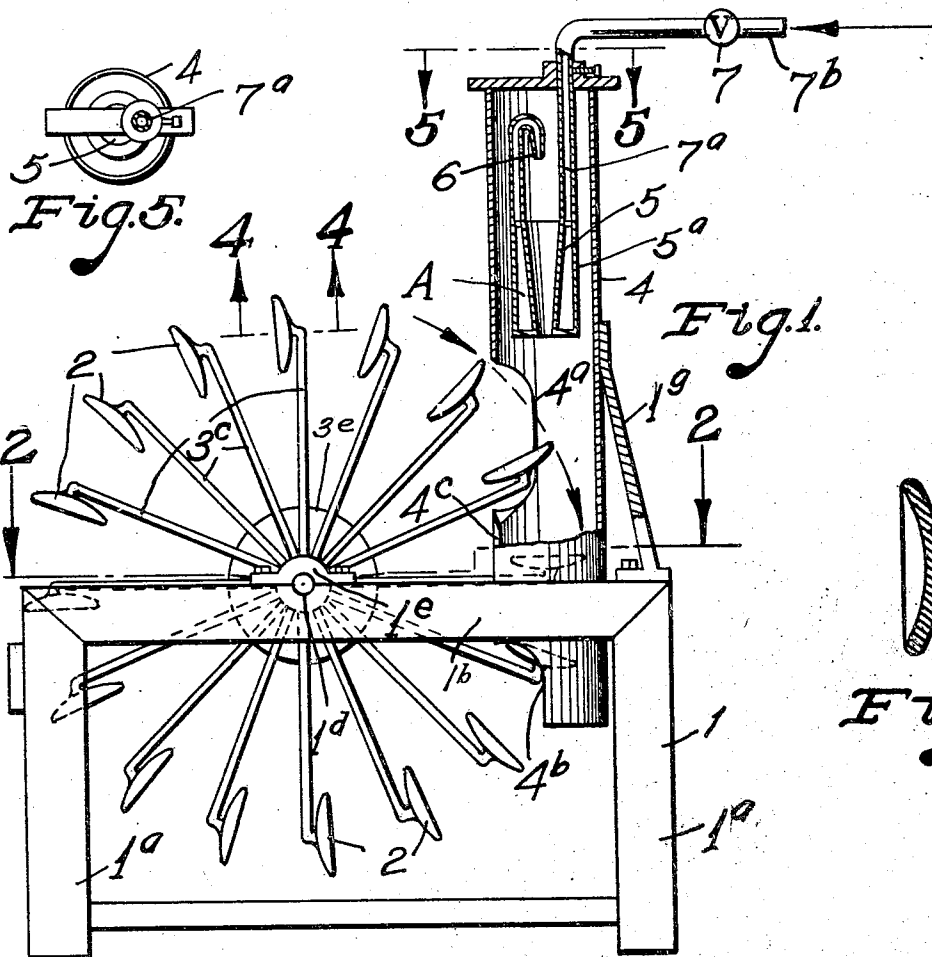
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2,304,136

POWER GENERATOR

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2,304,136

POWER GENERATOR

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1 Claim. (Cl. 60—41)

My invention relates to a power generator of the gas impact type and the objects of my invention are:

First, to provide a power generator of this class in which a forceful torch gas blast is arranged to operate a long leverage impact receiving impeller wheel thereby attaining very smooth and flexible cyclic power producing operation;

Second, to provide a power generator of this class which is arranged to operate on crude fuels and therefore provides very economical power production;

Third, to provide a power generator of this class in which the impact receiving impeller members are effectively air cooled;

Fourth, to provide a power generator of this class which converts crude fuel into highly combustible vapors for creating an efficient and powerful gaseous draft when operating the impact receiving wheel of my power generator;

Fifth, to provide a power generator of this class in which the torch-like gas blast is so forceful that the gases exert considerable pressure on the impact receiving impeller members in smooth consecutive order; and

Sixth, to provide a power generator of this class which is very simple and economical of construction, efficient in its action and which will not readily deteriorate or get out of order.

With these and other objects in view as will appear hereinafter, my invention consists of certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail and particularly set forth in the appended claim, reference being had to the accompanying drawing and to the characters of reference thereon which form a part of this application in which:

Figure 1 is a side elevational view of my power producing apparatus showing portions broken away and in section to facilitate the illustration; Fig. 2 is a plan sectional view thereof, taken from the line 2—2 of Fig. 1; Fig. 3 is a fragmentary sectional view taken from the line 3—3 of Fig. 2; Fig. 4 is an enlarged sectional view taken from the line 4—4 of Fig. 1 and Fig. 5 is a sectional view taken from the line 5—5 of Fig. 1.

Similar characters of reference refer to similar parts and portions throughout the several views of the drawing.

The supporting frame 1, impact receiving impeller members 2, impeller wheel shaft 3, main casing 4, draft directing casing 5, fuel jet 6 and the fuel valve 7 constitute the principal parts and portions of my power generator.

The supporting frame 1 is provided with substantially vertical leg members 1a and substantially horizontal frame portions 1b which are secured on the upper end of the legs 1a, as shown best in Figs. 1 and 2 of the drawing. This supporting frame 1 is also provided with an end member 1c which is secured between the frame portions 1b, as shown best in Fig. 2 of the drawing. The frame portions 1b are each provided with a journal portion 1d in which the impeller wheel shaft 3 is journaled and secured therein by means of the bearing cap member 1e, as shown best in Figs. 1 and 2 of the drawing. Fixed on this impeller wheel shaft 3 by means of the key 3a, is the impeller wheel hub member 3b as shown best in Fig. 2 of the drawing. Welded or otherwise secured to the central portion of this hub member 3b are the radially extending impeller wheel arm members 3c. Secured on the extending ends of the arms 3c are the impact receiving impeller members 2, which are substantially the cross sectional shape, as shown in Fig. 4 of the drawing. These impact receiving impeller members 2, together with the arm members 3c and the hub member 3b form an impact receiving impeller wheel, as shown best in Fig. 1 of the drawing. Secured on the outwardly extending end 3d of the impeller wheel shaft 3 is a pulley 3e which is arranged to deliver the power from my power generator by means of a belt, not shown, which may be positioned thereon. The main casing 4 is substantially hollow and cylindrical in shape and is provided with openings 4a and 4b in its one side which are positioned in an arcuate path of the impact receiving impeller members 2, as shown best in Fig. 1 of the drawing. It is also provided with a substantially vertical slotted portion 4c which is arranged to receive the arm members 3c as they revolve therethrough, as shown best in Fig. 2 of the drawing. Positioned in the upper end of the main casing 4 is the draft directing casing 5 which is substantially frustoconical in cross section and is surrounded by a casing member 5a which is so positioned and arranged in cooperative relation with the main casing 4 that a substantially annular opening is formed intermediate the main casing 4 and the casing member 5a, as shown best in Fig. 1 of the drawing. It will be noted that a compartment A is positioned intermediate the draft directing casing 5 and the casing member 5a. Communicating with this compartment A is a fuel inlet tube 7a which is connected with the fuel valve 7 which is arranged to control the pressure flow of fuel from the fuel conducting tube 7b into the

compartment A, all as shown best in Fig. 1 of the drawing. Communicating with the fuel in the compartment A is a fuel jet 6 which is positioned in concentric communicative relation with the interior of the draft directing casing 5 and is arranged to direct a torch-like jet of burning fuel downwardly through the draft directing casing 5. It will be noted that when the jet 6 is operating in a torch-like manner, air enters the upper end of the casing 4 around the casing member 5a and in the upper end of the draft directing casing 5 around the fuel jet 6 and accelerates the combustion of gases in the casing 5 and creates a forceful gaseous draft downwardly into the main casing 4 below the draft directing casing 5. The main casing 4 is rigidly supported on the frame 1 by means of the bracket member 1f in connection with the end frame member 1c and the upwardly extending bracket 1g which is secured to the main casing 4 intermediate its upper end and the bracket member 1f, all as shown best in Figs. 1 and 3 of the drawing.

The operation of my power generator is substantially as follows: When it is desired to operate my power generator, the fuel valve 7 is opened slightly permitting fuel to enter the compartment A and pass downwardly through the fuel jet 6. The fuel passing downwardly into the fuel jet 6 is ignited at the end of the fuel jet 6 and the heat created from the combustion of fuel in the draft directing casing 5 causes the fuel in the compartment A to be heated to a volatile state in communication with the fuel jet 6. It will be noted that crude fuels are readily combustible when preheated in the compartment A and then conducted through the fuel jet 6. The torch-like draft passing downwardly through the draft directing casing 5 and the draft of air around the casing 5a causes forceful impact on the impact receiving impeller members 2 which revolves the impeller wheel in the direction as indicated by arrows in Fig. 1 of the drawing. It will be noted that the impact receiving impeller members 2 are sufficiently air-cooled as they revolve around the impeller wheel shaft 3 after being

heated in the main casing 4 by the torch-like draft from the fuel jet 6 and draft directing casing 5. The pulley member 3e on the extending end of the impeller wheel shaft 3 provides suitable power take-off means for the delivery of power from my power generator.

Though I have shown and described a particular construction, combination and arrangement of parts and portions, I do not wish to be limited to this particular construction, combination and arrangement, but desire to include in the scope of my invention, the construction, combination and arrangement substantially as set forth in the appended claim.

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

In a power generator of the class described, the combination of a revoluble impact receiving wheel made of a plurality of radiating spokes separated from each other except at their inner connected ends and provided with turned portions at their free extended ends, separate spaced impact receiving impeller members positioned on the extended ends of each of said spokes, a torch-like fuel and impact fluid directing means arranged in cooperative relation with the impact receiving side of said impact impeller members, and a single straight tubular main casing provided with spaced cutaway portions in one side arranged to receive said impact receiving impeller members at the periphery of said impact receiving wheel, said torch-like fuel and impact fluid directing means positioned in said main casing and provided with an air inlet surrounding the same in said casing whereby air is drawn around said fluid directing means into said torch-like fuel and arranged to create a forceful gaseous impact on said impact receiving impeller members, said impact directing means forming an annular casing in spaced relation from said torch fuel impact directing means arranged to preheat fuel communicating with said fuel and impact directing means.

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