A. A. OSBORN.

OIL GAS GENERATOR.

APPLICATION FILED APR. 13, 1908.

916,003. **Patented Mar. 23, 1909.**

Fig. I

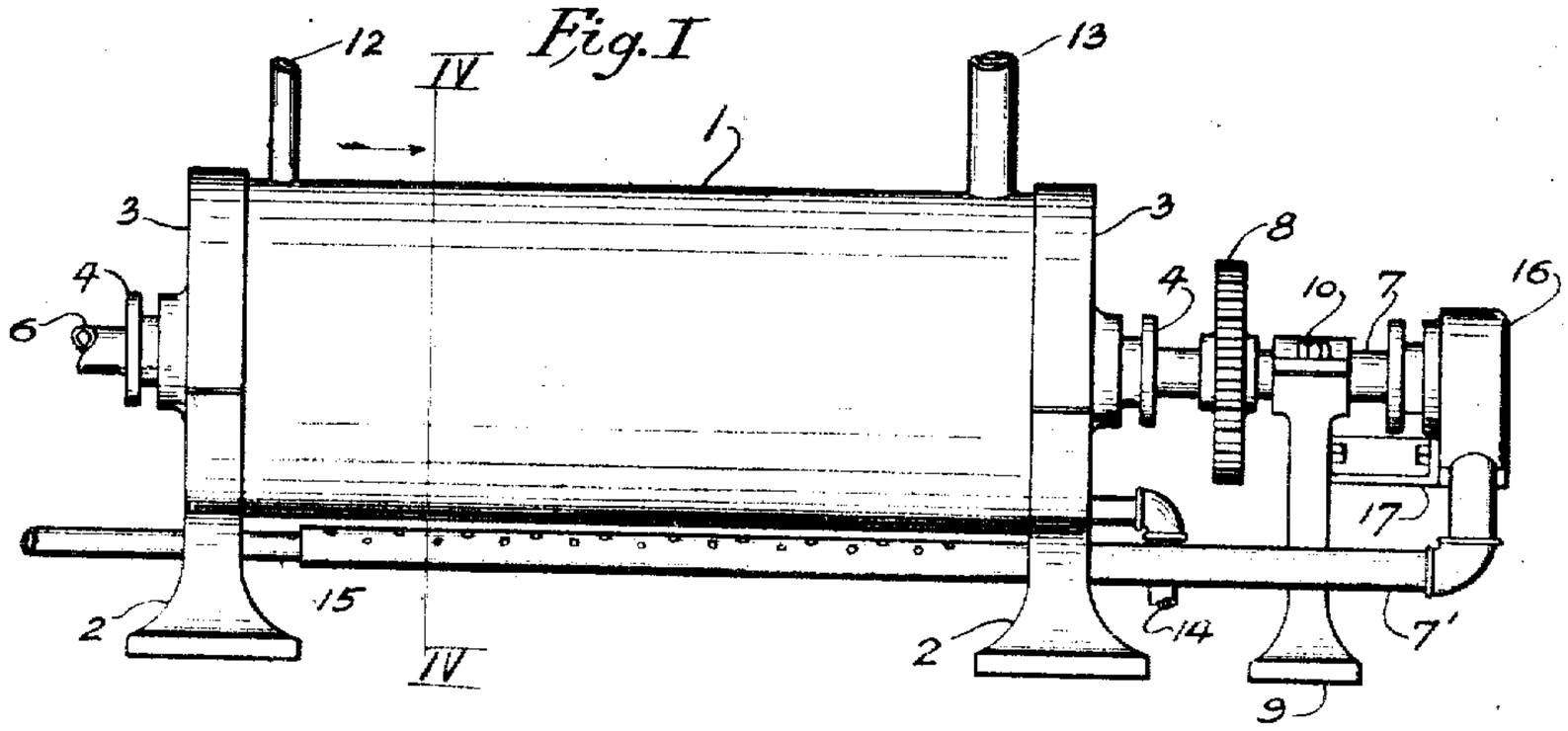


Fig. III

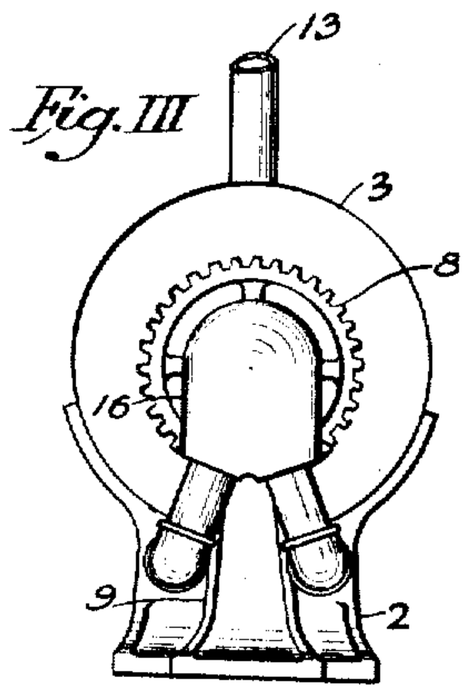


Fig. IV

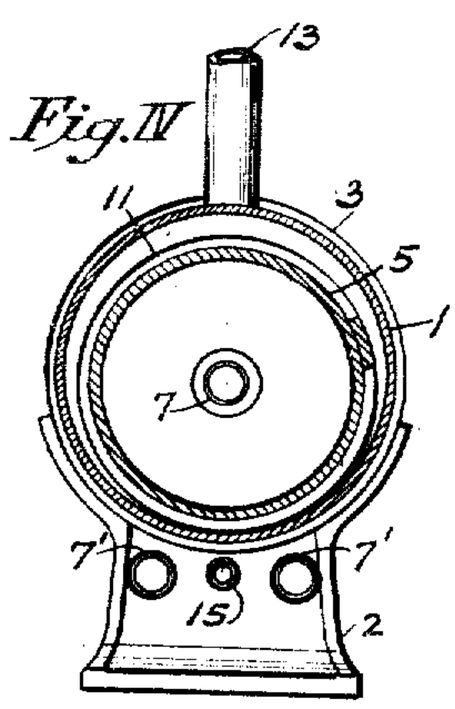


Fig. V

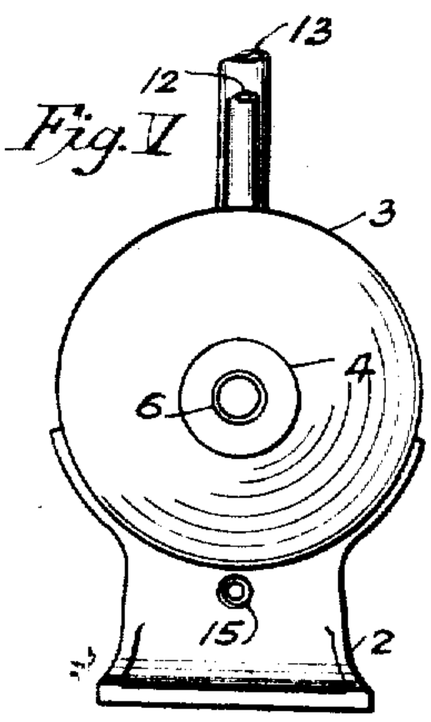
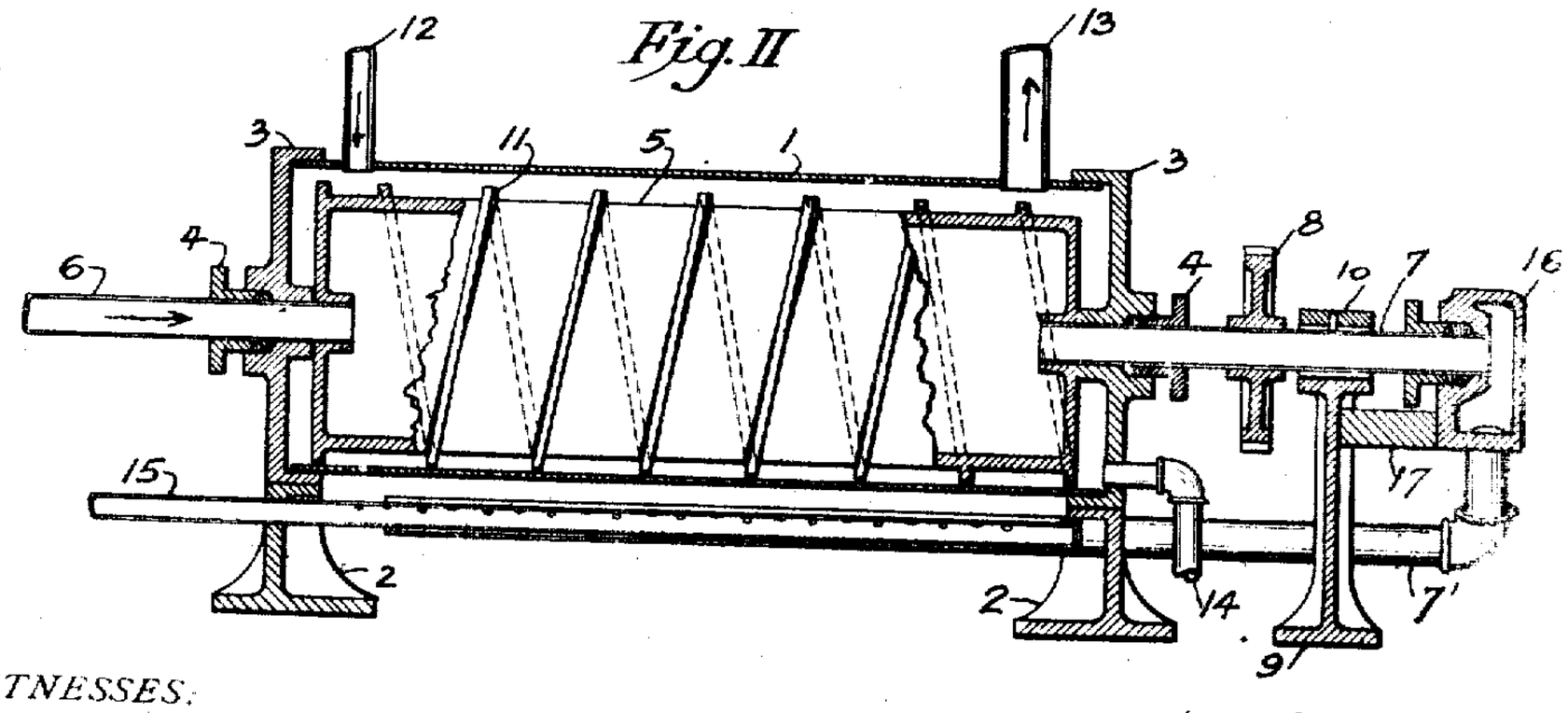


Fig. II



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OIL-GAS GENERATOR.

No. 916,003. Specification of Letters Patent. Patented March 23, 1909.

Application filed April 18, 1906. Serial No. 426,670.

To all whom it may concern:

Be it known that I, AMBROSE A. OSBORN, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Generators; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to generators, and more particularly to a device of that class for generating gas from crude oil; the object of my invention being to provide a device of that class which is simple and economical in construction and operation, and comprises the improved details of structure hereafter fully described and pointed out in the claims, reference being had to the accompanying drawings forming part of this specification, in which like reference numerals refer to like parts throughout the several views, and in which:—

Figure I is a view in side elevation, of a generator constructed according to my invention. Fig. II is a central longitudinal section of same, part of the inner drum being broken away to disclose its structure. Fig. III is a rear end elevation of same. Fig. IV is a vertical sectional view on the line IV—IV Fig 1. Fig. V is a front end view of the generator.

Referring more in detail to the parts:—1 designates a cylindrical casing which is mounted on standards 2 or other suitable supports.

Securely mounted on casing 1 are the end caps 3 having openings therein in which are seated the stuffing boxes 4; said openings being preferably located below the vertical center of said caps when the parts are assembled.

Located within casing 1 is a drum 5, which is supported a short distance from the bottom of the casing by the pipes 6—7 which latter project through the central openings in the drum ends, and are rigidly secured to said drum ends and packed at their entrances to prevent the passage of air or gas from the casing to the drum or vice versa.

The outer ends of pipes 6 and 7 project through the stuffing boxes 4 in the casing caps; pipe 6 leading to and connecting with the exhaust port of the engine (not shown), for which the generator supplies fuel gas, and pipe 7 discharging into a case 16, from which pipes 7′ lead back under casing 1 and discharges the air or steam exhausting from drum 5 against the bottom of the casing. Pipe 7 is provided with a gear or belt wheel 8 by which the drum may be revolved when connected with a suitable motor (not shown).

If necessary, pipe 7 may be supported at its outer end by a standard 9, having a journal box 10 in which said pipe may revolve; and case 16 may be supported by a bracket 17 carried by said standard.

On drum 5 is a peripheral worm 11 which extends from one end of said drum to the other, with its outer edge in close proximity to the bottom of the casing.

In the top of casing 1 near the exhaust inlet end, is a pipe 12 through which crude oil may be fed, and at the opposite end is an outlet pipe 13 for the gas generated within the casing; while projecting through the bottom of the casing at the end opposite the oil inlet is an outlet pipe 14, for the waste or residue which remains after the vaporization of the oil. Pipes 12, 13 and 14 are connected respectively with an oil supply, a gas tank, and a catch well, or similar devices, of any ordinary construction, and as no invention of such parts is claimed, they are not illustrated in the drawing.

Extending beneath casing 1 is a burner 15, which may be fed from any suitable source, and is adapted for aiding in heating the casing should the exhaust from the engine be insufficient for that purpose.

When in use, the drum 5 is revolved within the casing by revolving pipe 7 to which the drum is rigidly attached, and heated air or steam is fed into the drum through pipe 6. The heating medium passes through the drum and exhausts through pipe 7 into case 16, in its passage having heated the drum sides and the interior of casing 1. Oil is fed

through pipe 12 and dropped onto the heated drum body where it is vaporized, the gas rising to the top of the casing and escaping through pipe 13, the waste or residue left after such vaporization being discharged through pipe 14. Should a greater quantity of oil enter the casing than can readily be vaporized, it is carried along on the drum by the worm 11 until vaporization takes place, or drops to the bottom of the casing and is then lifted by the worm into contact with the drum to give it an opportunity for treatment by the heated drum sides.

Owing to the high temperature of the interior of the casing when the generator is in operation, the exhaust from drum 5 is adaptable for heating purposes, and I therefore provide the branch 7′ which extends back under the casing and assists in heating said casing, as noted.

By having the drum arranged as described the worm is brought into contact with the oil which has dropped to the bottom of the casing, in order that said oil may be lifted and agitated, and the residue moved forwardly to the outlet 14; such arrangement also providing a space in the top of the casing, above the drum, for the collection and drying of the gas before its exit through pipe 13.

Should the exhaust from the engine, and from the drum, be insufficient to generate gas from the oil, the burner beneath the casing may be lighted to make up the deficiency.

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

1. In a generator, a casing having an oil inlet and a gas outlet port, a drum in said casing adapted to revolve in proximity to the casing bottom and provide a chamber for the collection of gas within the casing above said drum, a worm integral with and projecting from the periphery of said drum, and means for heating said drum.

2. In a generator, a casing having an oil inlet and a gas outlet port, a drum in said casing adapted to revolve in proximity to the casing bottom and arranged to provide a gas chamber within the casing above said drum, a worm integral with and projecting from the periphery of said drum, means for heating said drum, and means for revolving said drum.

3. A generator comprising a casing having separate oil inlet and gas outlet ports, a drum revolubly mounted in said casing, means for conducting heat to the interior of said drum, a worm projecting from the periphery of and adapted for revolution with said drum, and means for revolving said drum.

4. A generator comprising a casing having an oil inlet and a gas outlet port and provided with end caps, pipes extending through and revolubly mounted in said end caps, a drum supported by said pipes with its interior in communication with the pipe channels and means connected with one of said pipes whereby said drum may be revolved.

5. A generator comprising a casing having end openings and provided with an oil inlet port and a gas outlet port, pipes extending through and revolubly mounted in said openings, a drum carried by said pipes, within said casing, with its interior in communication with the pipe channels, and a worm carried by and adapted for revolution with said drum.

6. In a generator, the combination of a casing having an oil inlet and a gas outlet port and provided with perforated end portions, a drum in said casing, hollow axles rigidly secured at opposite ends of said drum and projecting through and journaled in the ends of said casing, a worm integral with the periphery of said drum, and a driving mechanism connected with one of said hollow axles, said drum being adapted to receive and discharge a heating medium through said hollow axles, substantially as and for the purpose set forth.

7. In a generator, the combination of a casing having end openings provided with suitable bearings and provided with an oil inlet and a gas outlet port; a drum in said casing; a worm integral with the periphery of said drum and adapted for movement in close proximity to the bottom of said casing; hollow axles rigidly secured to the drum ends and projecting therethrough into communication with the drum interior, and extending through the bearings in the casing ends, a gear wheel on one of said axles without the casing, and a burner adjacent to said casing, substantially as set forth.

8. In a generator, the combination with a casing having end openings and suitable inlet and outlet ports, of a drum in said casing, hollow shafts projecting through said end openings in the casing and supporting said drum, a driving means on one of said shafts, and a worm on said drum adapted for revolution in close proximity to the bottom of said casing, substantially as set forth.

9. In a generator, the combination with a horizontally arranged casing, axle bearings in the ends of said casings, axles revolubly mounted in said bearings, a drum carried by said axles with its longitudinal center below the perpendicular center of the casing chamber, and means for actuating one of said axles, said axles being channeled to form heat intake and exhaust conduits for said drum substantially as set forth.

10. In a generator, the combination with

a horizontally arranged casing, of pipes revolubly mounted in and projecting through the casing ends, a drum carried by said pipes and wholly inclosed within the casing, a chambered case located adjacent to one end of said casing, a pipe leading from said chambered case and provided with perforations adapted for delivering heated air against the bottom of said casing, and means for revolving said drum.

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

AMBROSE A. OSBORN.

Witnesses:
GEO. HORN,
HAROLD E. RICHARDS.