No. 814,187. PATENTED MAR. 6, 1906.

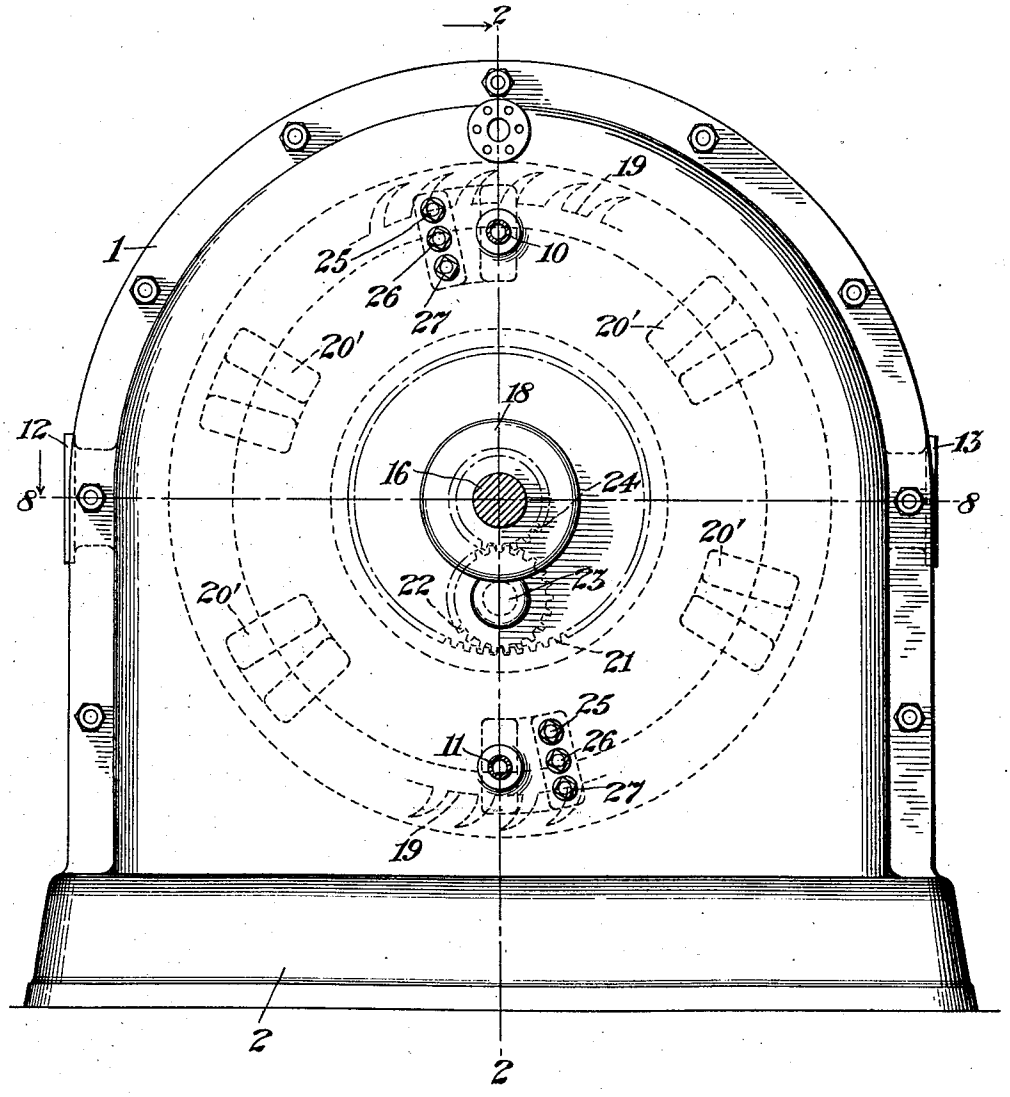
W. E. CLARK.

GAS TURBINE ENGINE.

APPLICATION FILED APR. 20, 1905.

4 SHEETS—SHEET 1.

Fig. 1



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4 SHEETS—SHEET 2.

Fig. 8

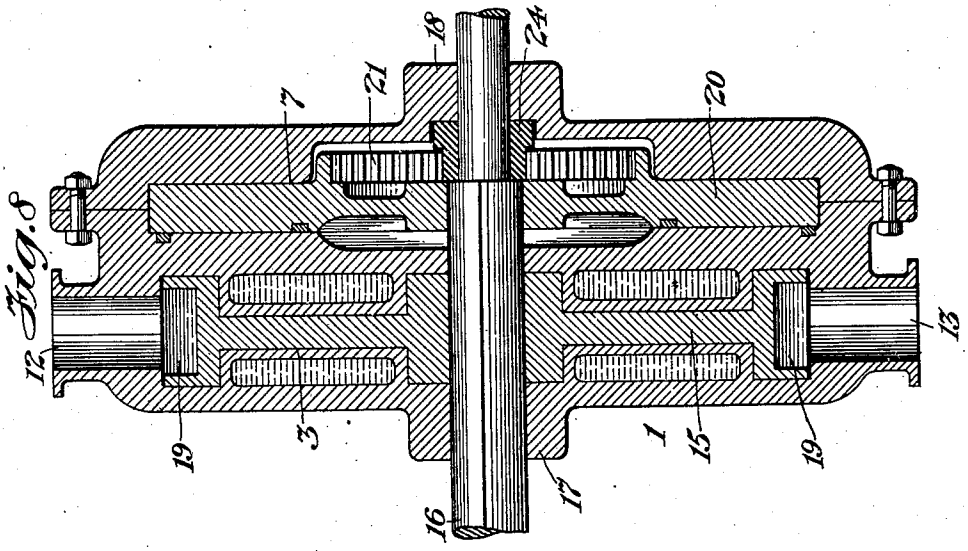
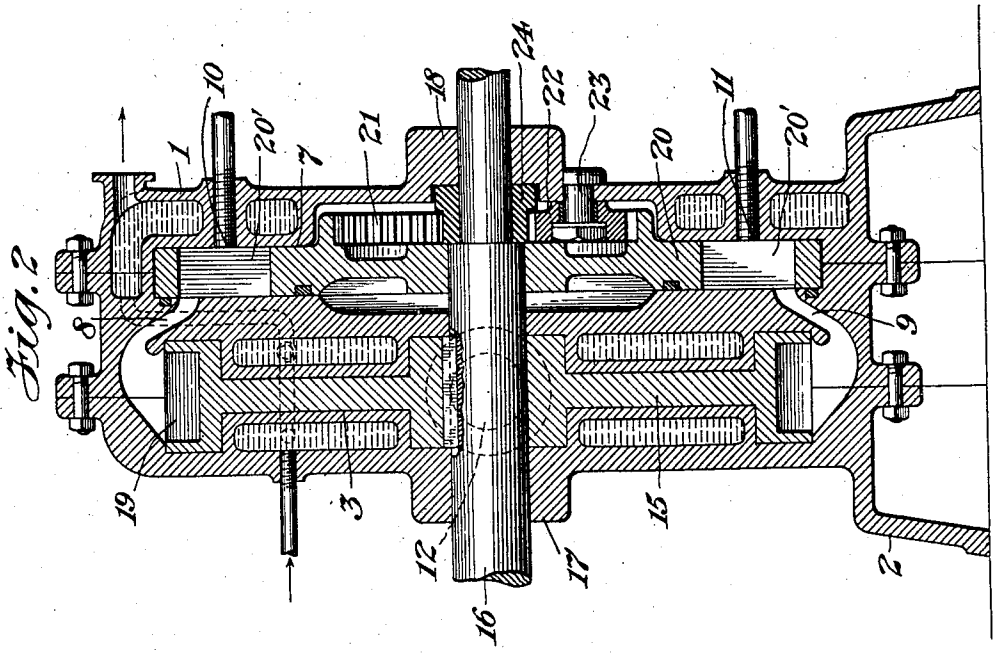


Fig. 2



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4 SHEETS—SHEET 3.

Fig. 5

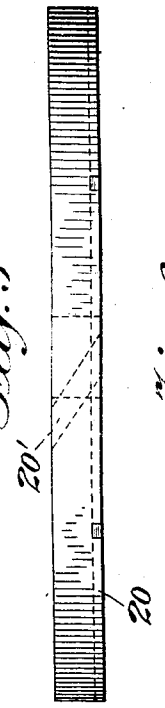


Fig. 6

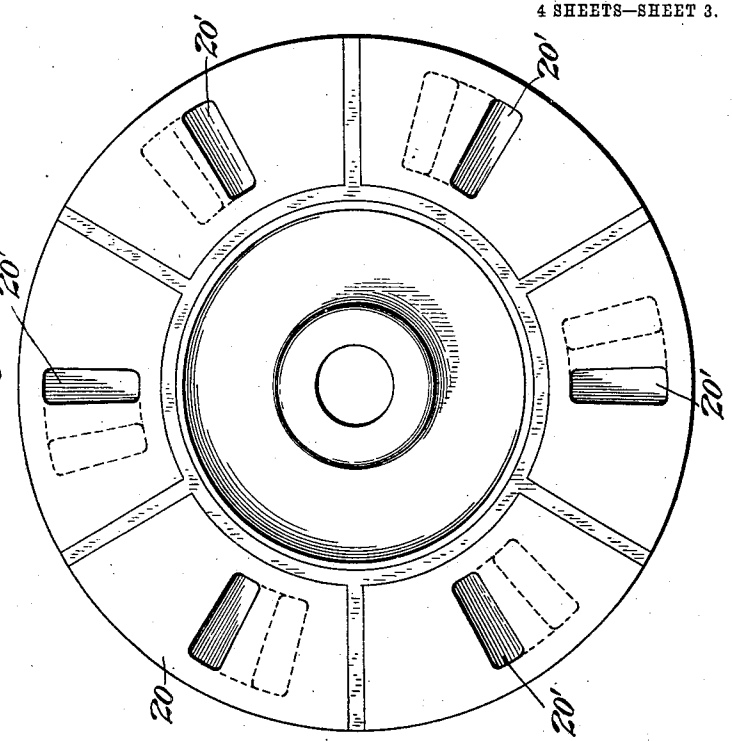


Fig. 3

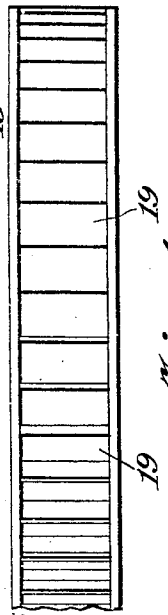
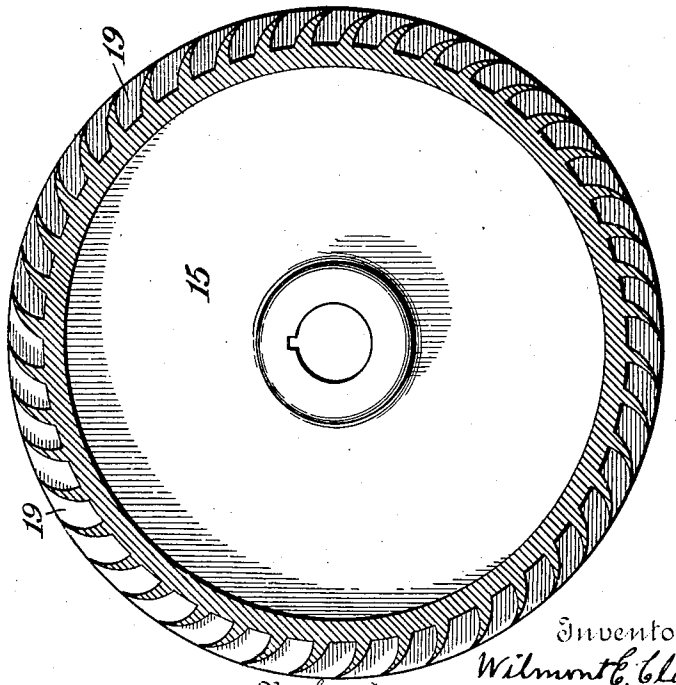


Fig. 4



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No. 814,187. PATENTED MAR. 6, 1906.

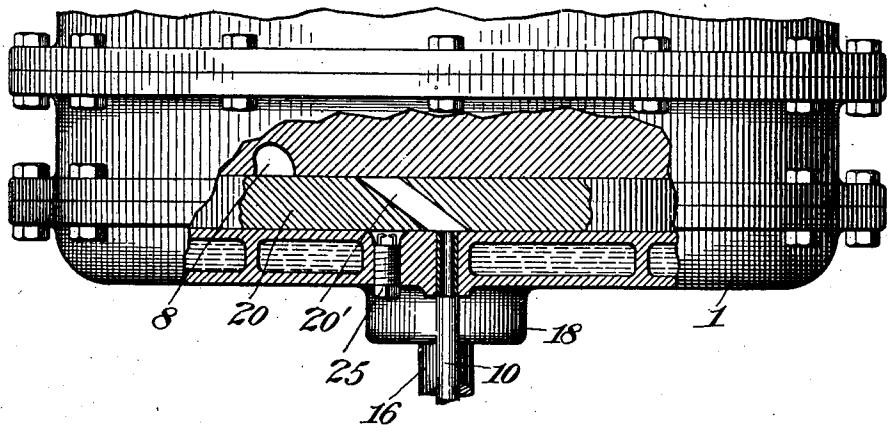
W. E. CLARK.

GAS TURBINE ENGINE.

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4 SHEETS—SHEET 4.

Fig. 7



Witnesses
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UNITED STATES PATENT OFFICE.

WILMONT E. CLARK, OF NEW YORK, N. Y.

GAS TURBINE-ENGINE.

No. 814,187. Specification of Letters Patent. Patented March 6, 1906.

Application filed April 20, 1905. Serial No. 256,589.

To all whom it may concern:

Be it known that I, WILMONT E. CLARK, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Gas Turbine-Engines, of which the following is a specification.

My invention relates to gas turbine-engines.

It has for its object to provide a gas turbine-engine having rotary explosion-chambers adapted to receive the explosive mixture, retain it while being exploded, and finally delivering the resultant gas to the turbine.

It has for a further object to provide a gas turbine-engine embodying advantages in point of perfect operation, simplicity and inexpensiveness of construction, and durability.

In the drawings, Figure 1 is a side view of the engine; Fig. 2, a vertical sectional view taken on the line 2 2 of Fig. 1. Fig. 3 is an edge view of the turbine. Fig. 4 is a vertical sectional view of the turbine. Fig. 5 is an edge view of the rotary disk having the explosion-chambers. Fig. 6 is a side view of the rotary disk having the explosion-chambers. Fig. 7 is a fragmentary top view of the engine, partly broken away to show the relative position at the upper part of the engine, of the upper charging-inlet, the sparking plugs, the port leading to the turbine-chamber, and one of the explosion-chambers when connected with the charging-inlet. Fig. 8 is a horizontal sectional view taken on the line 8 8 of Fig. 1.

In all the figures of the drawings illustrating my invention like reference characters designate corresponding parts.

Referring to the drawings, the casing of my engine, which is conveniently constructed of three sections bolted together, comprises an upper cylindrical portion 1, supported upon a base 2. The cylindrical portion is provided with a chamber 3 and a chamber 7, connected therewith by ports 8 and 9, said chambers being inclosed by a jacket through which water is adapted to be continuously circulated for the purpose of keeping the parts of the engine cool. Charging-inlets 10 and 11 for the introduction of the explosive mixture lead into the chamber 7, and exhaust-ports 12 and 13 lead from the chamber 3 to the outer air. The turbine 15 is located in the chambers 3 and keyed on the rotary shaft 16, journaled in the bearings 17 and 18 of the casing, and said turbine is provided with peripheral buckets 19. The rotary disk 20, which is journaled on the shaft 16 within the chamber 7, is provided near its outer edge with diagonal holes 20′, forming explosion-chambers, and on its side with a circular toothed rack 21, engaged by an intermediate pinion 22, journaled on a bearing 23 and engaging a pinion 24, secured on the shaft 16. At a point intermediate the port 8 and inlet 10 and port 9 and inlet 11 two sets of sparking plugs 25, 26, and 27 project into holes leading into the chamber 7 in the line of travel of the explosion-chambers, so that when the chambers come opposite the plugs the mixture therein will be exploded.

The operation is as follows: The disk 20 being revolved by turning the shaft 16, the explosion-chambers, two at a time, are registered or connected with the charging-inlets 10 and 11, receiving the explosive mixture therethrough, then come opposite the sparking plugs 25, 26, and 27, which explode the mixture, and finally register or connect with the ports 8 and 9, discharging the exploded mixture or gas therethrough into the buckets of the turbine 15, turning it, and as the buckets come opposite the ports 12 and 13 the spent gas is exhausted from the engine.

I do not wish to be understood as limiting myself to the precise details and arrangements of parts shown and described, but reserve the right to all modifications within the scope of my invention.

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

1. In a turbine-engine, a casing having a turbine-chamber, a turbine therein, a shaft on which said turbine is secured, a chamber connected by ports with the first-mentioned chamber and having charging-inlets, a disk in said last-mentioned chamber rotatably mounted on the turbine-shaft and having explosion-chambers, means for turning said disk on said shaft simultaneously with the turbine and sparking plugs projecting into holes in the casing leading to said last-mentioned chamber, substantially as described.

2. In a turbine-engine, a casing having turbine-chamber, a turbine therein, a shaft on which said turbine is secured, a chamber connected by ports with the first-mentioned

chamber and having charging-inlets, a disk in said last-mentioned chamber rotatably mounted on the turbine-shaft and having explosion-chambers, sparking plugs projecting into holes in the casing leading to said last-mentioned chamber, a rack on said disk, a pinion on the turbine-shaft, and an intermediate pinion meshing with said rack and first-mentioned pinion, substantially as described.

3. In a turbine-engine, a casing having a turbine-chamber, a turbine therein, a shaft on which said turbine is secured, a chamber connected by ports with the first-mentioned chamber and having charging-inlets, explosion-chambers in said last-mentioned chamber rotatably mounted on the turbine-shaft adapted to register with the first-mentioned inlets, means for turning said chambers on said shaft simultaneously with the turbine, and means for exploding the mixture in said explosion-chambers, substantially as described.

4. In a turbine-engine, a casing having a turbine-chamber, a turbine therein, a chamber connected by ports with the first-mentioned chamber and having charging-ports, a rotatable disk mounted in said last-mentioned chamber parallel with said turbine and having explosion-chambers, means for turning said disk simultaneously with said turbine and means for exploding the mixture in said explosion-chambers, substantially as described.

Signed at New York, in the county of New York and State of New York, this 14th day of April, A. D. 1905.

WILMONT E. CLARK.

Witnesses:

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A. B. BLACKWOOD.