

No. 750,489.

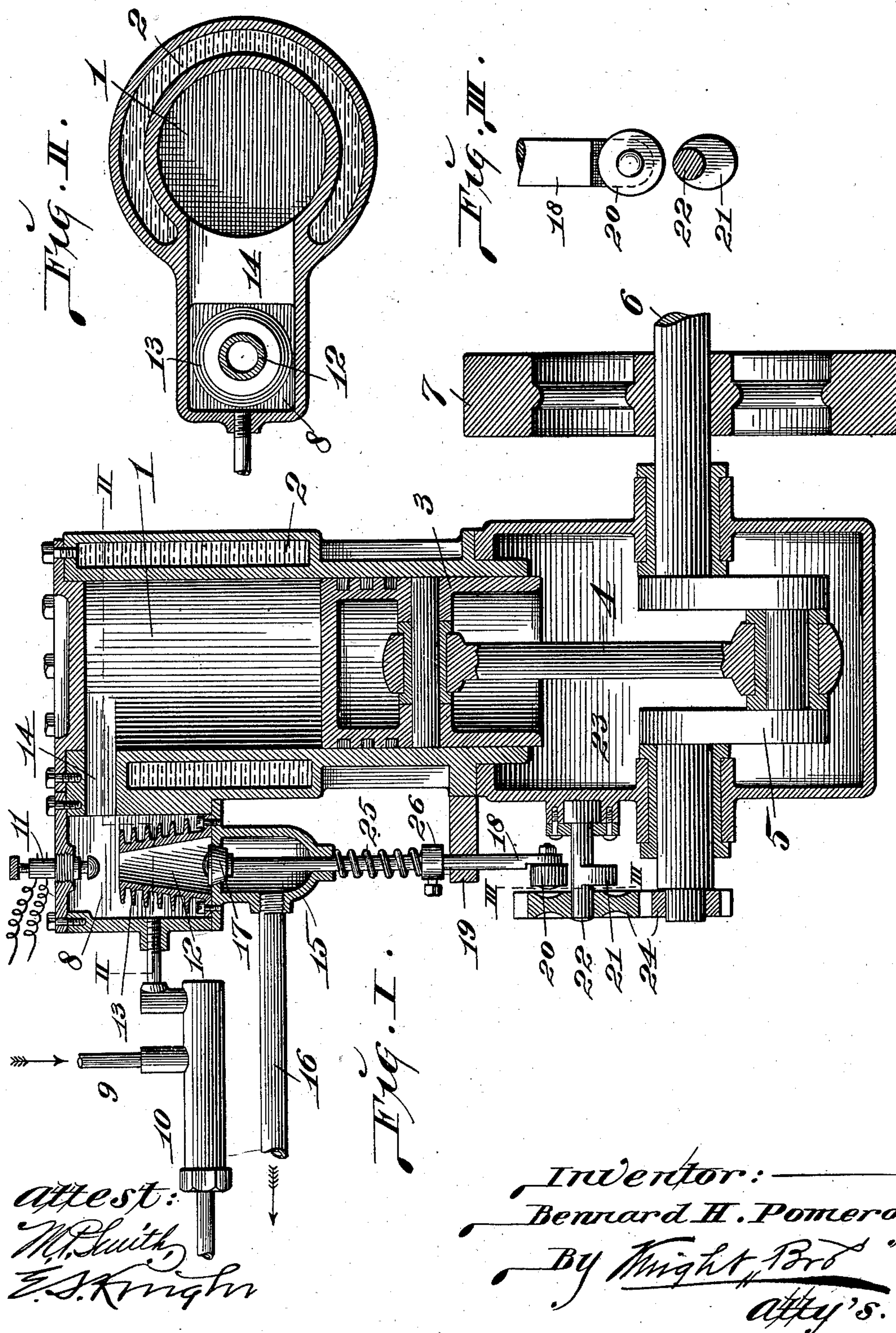
PATENTED JAN. 26, 1904.

B. H. POMEROY.

## PETROLEUM ENGINE.

APPLICATION FILED JULY 3, 1903.

NO MODEL.



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



# UNITED STATES PATENT OFFICE.

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## PETROLEUM-ENGINE.

SPECIFICATION forming part of Letters Patent No. 750,489, dated January 26, 1904.

Application filed July 3, 1903. Serial No. 164,171. (No model.)

*To all whom it may concern:*

Be it known that I, BENNARD H. POMEROY, a citizen of the United States, residing in the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Petroleum-Engines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an engine designed to use kerosene as a fuel and so constructed that the oil is admitted into a heated combined vaporizing and igniting chamber on its passage from the oil-supply to the cylinder of the machine.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claim.

Figure I is a vertical section of my improved engine, part in elevation. Fig. II is a horizontal transverse section taken on line II II, Fig. I. Fig. III is a detail section taken on line III III, Fig. I.

Referring to the drawings, 1 represents a cylinder, which is preferably provided with a water-jacket 2. Within the cylinder is a piston 3, connected by a rod or pitman 4 to the crank 5 of the main shaft 6 of the engine, which shaft is provided with a driving-pulley 7. Located at one side of the cylinder is a chamber 8, into which the fuel-oil is forced from a supply-pipe 9 by means of a small pump 10, the piston of which is moved by any suitable motor. (Not shown.) The top of the chamber 8 is provided with an electric connection 11 for producing sparks in the chamber 8. Within the chamber 8 is a vaporizer 12, made in the form of a hollow conical cylinder having opened ends and external heat-radiating ribs 13. The upper part of the chamber 8 communicates with the upper part of the cylinder 1 through means of a port or passage 14. Beneath the cylinder is a chamber 15, to which is connected an exhaust-pipe 16.

17 represents an upwardly-opening valve that is seated in the upper end of the chamber 15 beneath the opened lower end of the vaporizer 12 and the stem 18 of which passes

downwardly through a guide-bracket 19 and is provided at its lower end with a friction-roller 20, adapted to be engaged by a cam 21 on a short shaft 22, journaled to the base 23 of the engine. The shaft 22 is geared to the shaft 6 by means of pinions 24.

25 represents a spring surrounding the stem 18 between the lower end of the chamber 15 and a collar 26, secured to the stem. This spring acts to close the valve 17 and to hold it closed except when the cam 21 strikes the roller 20.

The operation is as follows: The vaporizer 12 is initially heated by some convenient method, and during the operation of the engine it is kept heated by the hot exhausting gases, which as the piston 3 rises are forced back through the port or passage 14, down through the vaporizer 12, and out through the chamber 15 and pipe 16, the valve 17 being opened at the proper time to permit the exhaust by means of the cam 21 striking the roller 20. When the machine is in operation, the pump 10 forces oil into the chamber 8, where it is vaporized and ignited, and when ignition takes place the gases pass through the port or passage 14 into the cylinder 1 above the piston 3, causing the latter to be forced downwardly and effecting the turning of the shaft 6. These hot gases, as stated, are passed through the vaporizer 12 as the piston ascends, thus keeping the vaporizer heated to a high temperature to effect the vaporization of the oil as it enters the chamber 8.

I claim as my invention—

In a petroleum-engine, the combination of a cylinder provided with a piston, a chamber located on one side of the engine and communicating therewith through means of a combined inlet and exhaust port, a valve controlling the exhaust of gases from the chamber, means for operating said valve, and an open-ended vaporizer located in said chamber over said valve, substantially as set forth.

BENNARD H. POMEROY.

In presence of—

E. S. KNIGHT,  
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