

No. 835,759.

PATENTED NOV. 13, 1906.

T. N. KELLETT.
GAS ENGINE.

APPLICATION FILED OCT. 16, 1905.

Fig. 1.

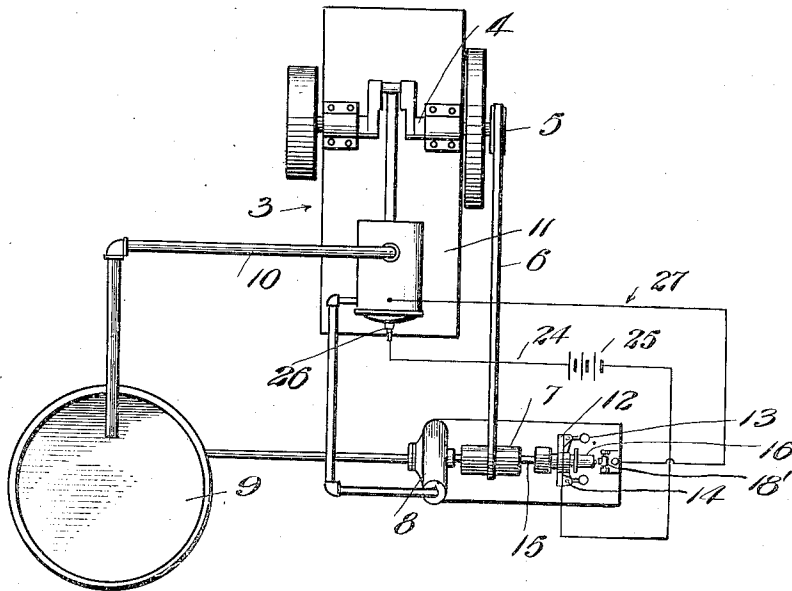
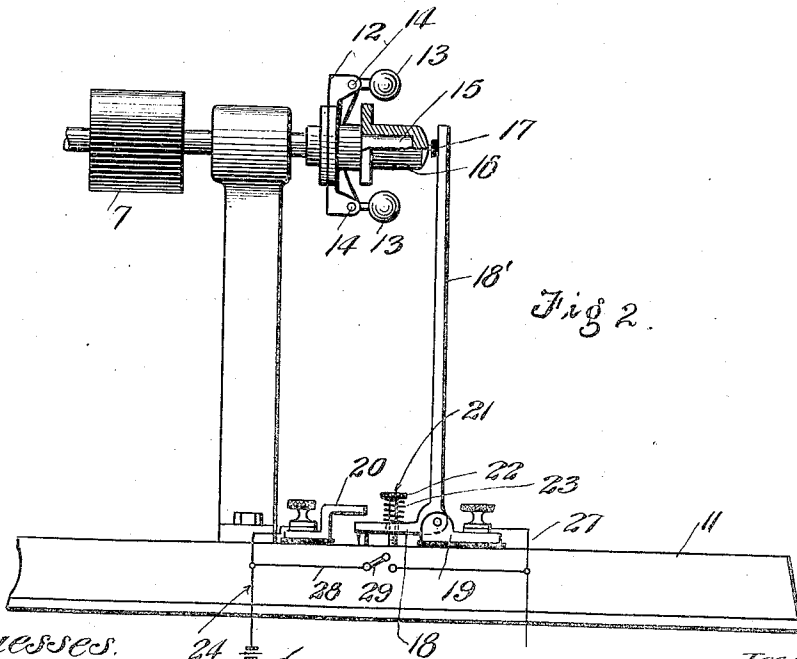


Fig 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

THOMAS N. KELLETT, OF LOS ANGELES, CALIFORNIA.

GAS-ENGINE.

No. 835,759.

Specification of Letters Patent.

Patented Nov. 13, 1906.

Application filed October 16, 1905. Serial No. 283,029.

To all whom it may concern:

Be it known that I, THOMAS N. KELLETT, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Gas-Engines, of which the following is a specification.

My invention relates to the sparking-circuit of the engine.

In operating a gas-engine where the combustion is accomplished by means of an electric sparking apparatus it often happens that the circulating-pump which controls the flow of water to the engine-jacket and which derives its power from the engine sometimes stops—for instance, when the belt from the engine-pulley slips off or is broken. When such an accident occurs, the flow of cool water to the engine-jacket is cut off and the water in the jacket stops circulating, the engine continues to work and becomes so hot that it often sustains great injury.

It is the object of my invention to obviate such accidents, and to this end I have provided mechanical means whereby when the circulating-pump is thrown out of action from any cause whatever the supply of current to the sparking apparatus is instantly cut out and the engine is brought to a stop, thereby preventing any injurious effects. I accomplish these objects by means of the device described herein and shown in the accompanying drawings, in which—

Figure 1 is a plan of a gas-engine circulating-pump and water-supply with my device applied thereto and showing a diagram of the sparking-circuit. Fig. 2 is an enlarged detail of my device applied to a portion of the circulating-pump.

Referring to the drawings, 3 is a gas-engine of the usual type, and 4 is the crank-shaft, to which is attached the pulley 5, from which a connection is made, by means of a belt 6, to the pulley 7 of the circulating-pump 8. This pump is preferably of the centrifugal type and derives its water-supply from a tank 9. The water from this tank is delivered by the pump to the engine-jacket, from which when it becomes hot it is forced back into the tank through the pipe 10.

At one end of the circulating-pump, which is mounted on a base 11, is a governor 12, which has the usual governor-arms 13, pivoted at 14. On the end of the pump-shaft 15 is a cap 16, which has an outward longi-

tudinal movement on the pump-shaft by means of the governor-arms. This cap contacts when the engine is started with the arm 18' of a bell-crank lever which is pivoted to an insulated bearing 19, mounted on the pump-base. The lower arm 18 of this bell-crank lever projects inwardly far enough so that when it is moved it engages contact-plate 20. This arm has an aperture through which passes a knurled screw 21, which is in threaded engagement with the pump-base. Interposed between the screw-head 22 and the arm 18 is a spring 23, which forces and holds the arm out of engagement with the contact-plate 20 when the circulating-pump is not operating.

Leading from contact-plate 20 is line 24, which passes through battery 25 to the spark-plug 26 in the engine-cylinder. Leading from bearing 19 is line 27, which is grounded at any convenient point on the engine-cylinder. Interposed between the lines of the circuit is a line 28, in which is located a switch 29.

In the operation when the engine is started switch 29 is closed temporarily until the engine attains sufficient speed to operate the governor on the pump when the switch is opened. The movement of the governor-arms forces the cap outwardly and rocks the bell-crank lever so as to form a connection between arm 18 of bell-crank and contact-plate 20, thus closing the sparking-circuit through the lever.

It will thus be seen that should the belt from the engine-pulley to the pump break or slip off the stopping of the pump will break the circuit through the medium of the bell-crank lever, thereby stopping the engine.

It will also be seen that if the engine is stopped from any other cause the circuit is broken, thus preventing any waste of the batteries.

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

1. In a gas-engine a circulating-pump; a normally open sparking-circuit; means to temporarily close the circuit upon starting; means to close the circuit during the operation of the pump comprising a bell-crank lever having one arm thereof adapted to be thrown against a contact whereby the circuit is closed; and means secured to the circulating-pump to cause the throw of the bell-

crank lever to bring its arm into engagement with the contact as soon as the speed of the engine reaches a predetermined point and to hold the same engaging the contact as long as the circulating-pump operates.

2. In a gas-engine a circulating-pump; a normally open sparking-circuit; a switch in said sparking-circuit adapted to close the same; and means secured to and operated by the circulating-pump to throw said switch to close the circuit while said pump is operating; and means to open said switch when said pump ceases operating.

3. In a gas-engine in combination; a circulating-pump; a normally open sparking-

circuit connected to a spark-plug in the cylinder of the engine; a switch in said sparking-circuit; a spring secured to said switch to hold the same normally open; and means secured to the circulating-pump to close the switch and keep the same closed during the operation of the circulating-pump.

In witness that I claim the foregoing I have hereunto subscribed my name this 7th day of October, 1905.

THOS. N. KELLETT.

Witnesses:

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