

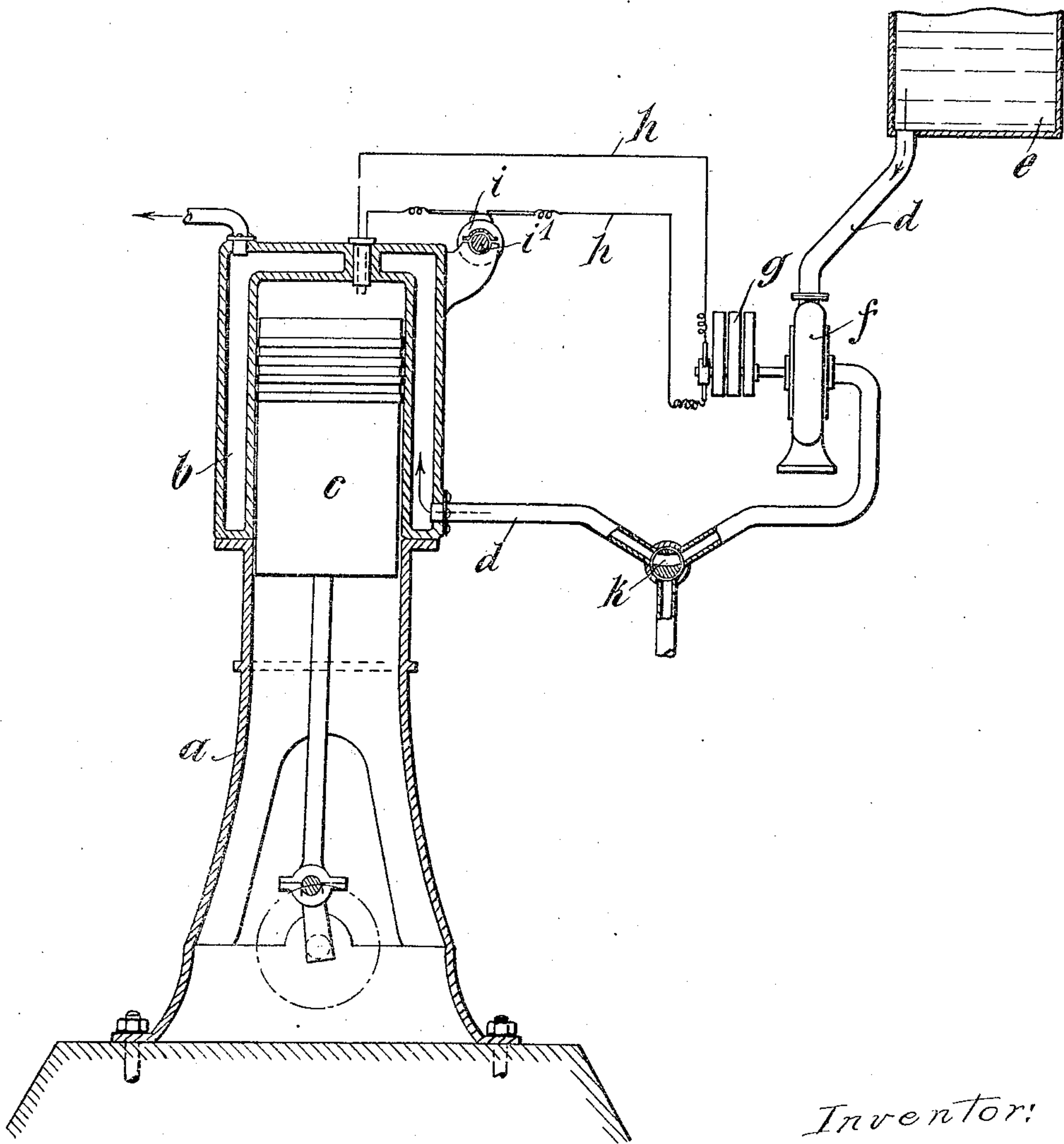
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PATENTED APR. 21, 1908.

F. REICHENBACH.

VICE FOR IGNITING THE CHARGES OF INTERNAL COMBUSTION ENGINES:

APPLICATION FILED MAY 2, 1906.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

FRITZ REICHENBACH, OF CHARLOTTENBURG, GERMANY.

DEVICE FOR IGNITING THE CHARGES OF INTERNAL-COMBUSTION ENGINES.

No. 885,520.

Specification of Letters Patent.

Patented April 21, 1908.

Application filed May 2, 1906. Serial No. 314,867.

*To all whom it may concern:*

Be it known that I, FRITZ REICHENBACH, a subject of the German Emperor, and resident of Charlottenburg, Berlin, Germany, have invented certain new and useful Improvements Relating to Devices for Igniting the Charges of Internal-Combustion Engines, of which the following is a specification.

At starting, the number of revolutions of an internal combustion engine is generally so small that the rotating igniting device, such as a dynamo or a rotating or oscillating magneto-machine, driven by the main shaft or distributing shaft does not give ignition sparks of the necessary strength.

By the present invention, in order to render the igniting device independent of the number of revolutions of the engine, the device is driven by the water used for cooling the engine, the driving mechanism being a bucket wheel, a piston motor, a turbine or the like, or an oscillating piston.

An arrangement especially suitable to the above stated purpose is shown on the annexed drawing.

*a* is an internal combustion engine the cylinder of which is provided with the cooling jacket *b* surrounding the explosion cylinder wherein is moving the piston *c*. A pipe *d* connected with the cooling jacket leads to a reservoir *e* containing the cooling water for the engine. The reservoir will be arranged at a high point in order that the water coming from the reservoir may have a pressure strong enough to drive the rotary motor *f*. This motor while rotating drives a rotatable igniting device such as the dynamo *g* which is connected by the conductors *h* to the combustion engine *a*. A cam *i* or the like on the distributing shaft *j* controls the admission of the igniting current to the engine at the right moment. The cooling water may be led either to the cooling jacket or the open air by means of a three-way cock *k* the purpose of which being below more clearly specified. This arrangement has the further advantage that if the cooling water for any reason fails, the ignition ceases and the engine comes to rest without damage.

Since, before starting the engine the cooling water cannot well be allowed to flow through the cooling jacket lest moisture be deposited on the ignition terminals, the said three-way cock *k* must be introduced into the water pipe *d* behind the igniting device, which, when the engine is in motion, can be turned by hand or automatically so that the water may take its normal course through the cooling jacket. Instead of the cooling water other water, or another means of driving, may be used.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. In a device of the class described, a gas engine having water jackets, electrodes carried by said engine, a dynamo in circuit with said electrodes, a water motor to operate said dynamo, and means to convey the discharge of said motor through the water jackets of said engine, substantially as described.

2. In combination with a jacketed explosive engine embodying an igniter and a generator therefor, of a water motor operatively connected to the generator, means for supplying water under pressure to the motor, and a conduit leading from the exit of the motor to the jacket of the engine, for the purpose set forth.

3. In combination with a jacketed explosive engine embodying an igniter and a generator therefor, of a water motor operatively connected to the generator, means for supplying water under pressure to the motor, and a conduit leading from the exit of the motor to the jacket of the engine, a branch conduit connected to this conduit and a valve at the junction of the two conduits adapted to deflect the water away from the jacket in starting, for the purpose set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

FRITZ REICHENBACH.

Witnesses:

HENRY HASPER,  
WOLDEMAR HAUPT.