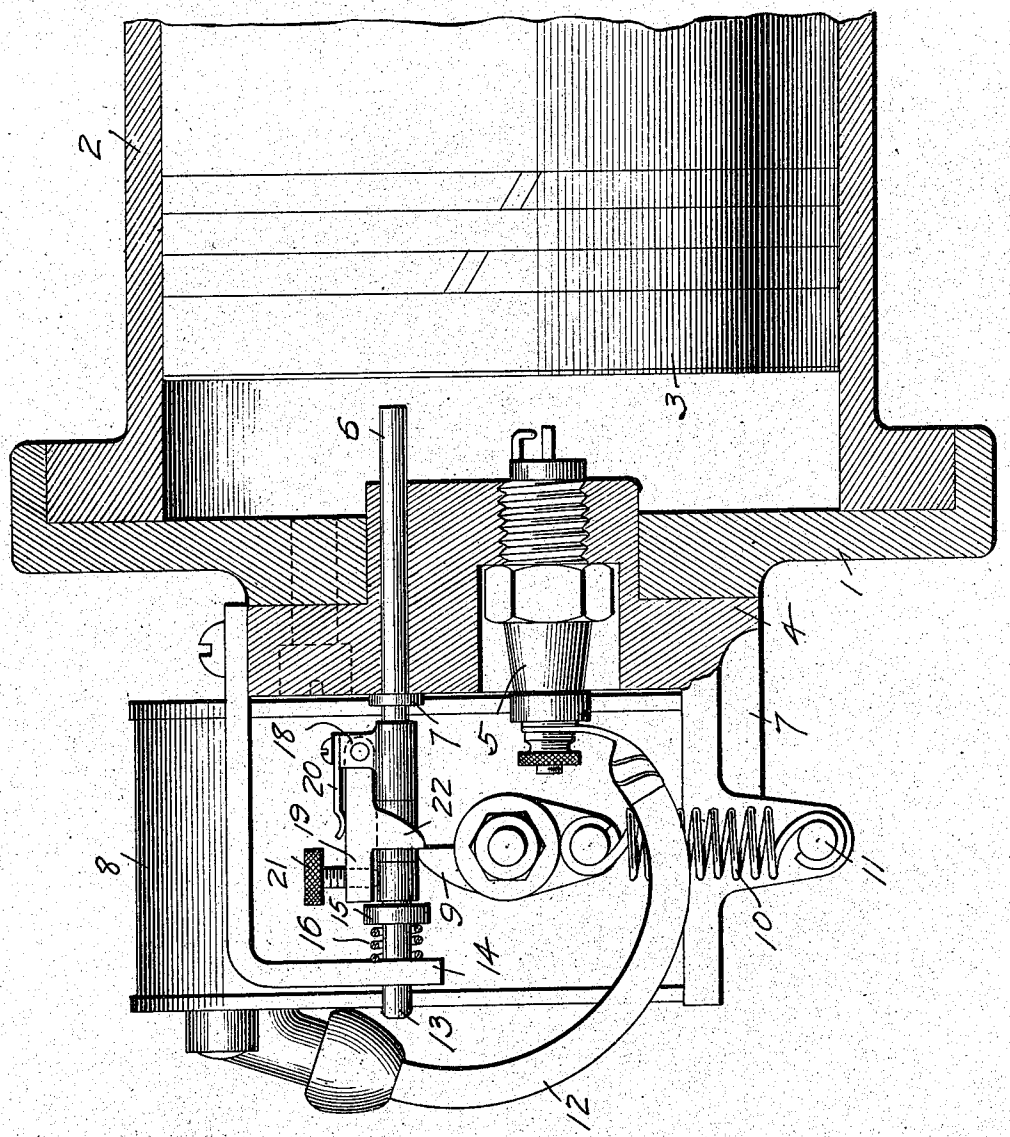
H. R. VAN DEVENTER,

IGNITION DEVICE.

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Inventor:

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UNITED STATES PATENT OFFICE.

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IGNITION DEVICE.

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To all whom it may concern:

Be it known that I, HARRY RANDOLPH VAN DEVENTER, a citizen of the United States, residing at Sumter, in the county of Sumter and State of South Carolina, have invented certain new and useful Improvements in Ignition Devices, of which the following is a specification, reference being had to the accompanying drawing.

This invention relates to ignition devices for internal combustion engines and particularly to devices in which a high tension oscillating magneto is employed.

The objects of the invention are to produce an arrangement for operating the magneto that will be simple, cheap and efficient; to mount the magneto in close proximity to the spark plug, and to mount both spark plug and magneto on a bracket adapted to be bolted or otherwise secured to the engine cylinder, said bracket carrying all of the operating means for tripping the magneto.

Another object of my invention is to provide means for operating the oscillating magneto by a push rod directly engaging the engine piston, which I here describe and broadly claim.

In the accompanying drawing:

1 denotes the cylinder head of the engine, and 2 the cylinder wall; 3 denotes the engine piston. At 4 is shown partly in section a bracket adapted to be secured in any suitable manner to the cylinder head; in this bracket, in a tapped hole or otherwise mounted, is an ordinary spark plug 5, and a push rod 6. The bracket may have a laterally extending shelf portion 7, or this shelf may be separate from the bracket. On this shelf is mounted a suitable oscillating magneto indicated by the numeral 8, having upon its shaft a trip lever 9 connected to which is a suitable spring 10, the lower end of which is secured to some portion of the magneto, bracket, or engine frame, indicated at 11.

The high tension magneto 8 is connected to the spark plug 5 by means of a suitable cable 12, the length of which is reduced to a minimum, owing to the compact arrangement of the apparatus.

The push rod 6 extends outwardly from the bracket 4 and the outer end 13 of same is carried with a suitable support 14 which may be integral with the bracket 4 or which may be a part of the magneto or an extension on the engine frame work.

The rod 6 has a collar 15 attached to it and between this and the downwardly extending end of 14 is placed a spring 16 which tends to return the push rod 6 toward the cylinder 3, a collar 17 limiting the inward movement of 6.

Carried on 6 is a suitable member 18 in which is movably supported a latch 19 normally held in operative position by the spring 20. Suitable means such as the screw 21 is provided at the end of this latch whereby the length of the engaging end 22 of same may be adjusted in relation to the upwardly extending portion of 9 in engagement therewith.

In operation, on the upward stroke of the piston, 6 is pushed outwardly and the end 22 of same engages the trip 9. Near the end of the outward stroke, 22 is suddenly released by sliding off 9, and by spring 10, a violent oscillation of the magneto shaft is produced and the current generated thereby is conducted by cable 12 to spark plug 5 and a spark produced thereat. By adjusting screw 22, the time at which the end 22 of the latch releases the dog 9 can be varied, thereby timing the ignition point.

It will be obvious that on the backward stroke of push rod 6, the latch 22 rides over the upwardly projecting portion of 9 and the magneto is not operated.

Having thus described my invention, I claim:

1. In combination, an engine cylinder, an electric generator adjacent thereto, a piston in said cylinder, means engaging said piston for actuating said generator, a spark plug, and a common support for said actuating means and plug.

2. In combination, an engine cylinder, a piston in said cylinder, a support attached to said cylinder, a spark plug carried by said support and having its points communicating with the combustion space in said cylinder, an electric generator carried by said support, and means positioned by said support engaging said piston and actuating said generator.

3. In combination, an internal combustion engine, a bracket mounted thereon comprising a closure for an aperture communicating with the cylinder of said engine, a spark

plug carried in said bracket and communicating with the combustion space in said cylinder, a generator carried by said bracket, and means for actuating said generator carried by said bracket and adapted to project therethrough and engaging said piston, substantially as described.

4. In combination, an engine cylinder, an electric generator adjacent thereto, a piston in said cylinder, and means extending through the wall of said cylinder engaging said piston for actuating said generator.

5. In combination, an engine cylinder, an electric generator adjacent thereto, a piston in said engine cylinder, a push rod engaged by said piston and adapted to actuate said generator, and means for varying the time of actuation of said generator by said push rod.

6. In combination, an engine cylinder, an electric generator adjacent thereto, a piston in said engine cylinder, a push rod engaged by said piston and adapted to actuate said generator, and means for varying the time of actuation of said generator by said push rod, said means including a manually operable device carried on said rod, substantially as described.

7. In combination, an engine cylinder, an electric generator disposed outside of said cylinder, a piston in said cylinder, a sliding rod extending through the wall of the cylinder and adapted to be engaged by the piston, a bracket carried by the cylinder and supporting the outer end of said rod, a spring for normally forcing said rod into the cylinder, a stop for limiting the inward movement of said rod and means carried by the rod for actuating the electric generator when said rod is forced outwardly by the piston.

8. In combination, an engine cylinder, an electric generator disposed outside of said cylinder, a piston in said cylinder, a sliding rod extending through the wall of the cylinder and adapted to be engaged by the piston, a bracket carried by the cylinder and supporting the outer end of said rod, a spring for normally forcing said rod into the cylinder, a stop for limiting the inward movement of said rod and a yielding latch pivotally carried by said rod, said latch being adapted to engage and actuate said electric generator when the rod is moved outwardly.

9 In combination, an engine cylinder, an electric generator disposed outside of said cylinder, a piston in said cylinder, a sliding rod extending through the wall of the cylinder and adapted to be engaged by the piston, a bracket carried by the cylinder and supporting the outer end of said rod, a spring for normally forcing said rod into the cylinder, a stop for limiting the inward movement of said rod, a yielding latch pivotally carried by said rod, said latch being adapted to engage and actuate said electric generator when the rod is moved outwardly and means for adjusting the position of the latch for varying the time of releasing the generator.

10. In combination an engine cylinder, a bracket attached to said engine cylinder, an electric generator carried by said bracket and having an armature shaft carrying a trip lever, a spring connected to said trip lever for returning the armature shaft when released to produce ignition current, a piston in said cylinder, a rod extending through the wall of the cylinder and adapted to engage the piston, a spring for normally forcing said rod inwardly, a stop for limiting the inward movement of said rod and a yielding latch carried by the rod and adapted to engage said trip lever for turning the same against the tension of the spring.

In testimony whereof I hereunto affix my signature.

HARRY RANDOLPH VAN DEVENTER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."