

W. K. BASSFORD.
IGNITER FOR ENGINES.
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1,002,357.

Patented Sept. 5, 1911.

2 SHEETS—SHEET 1.

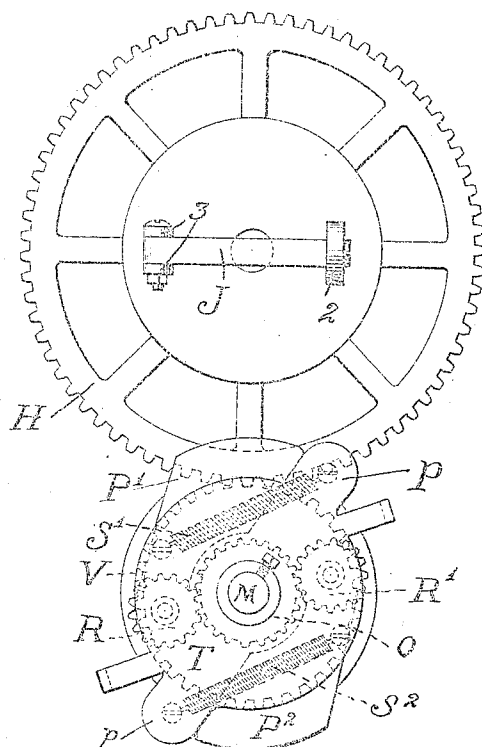


FIG. 1.

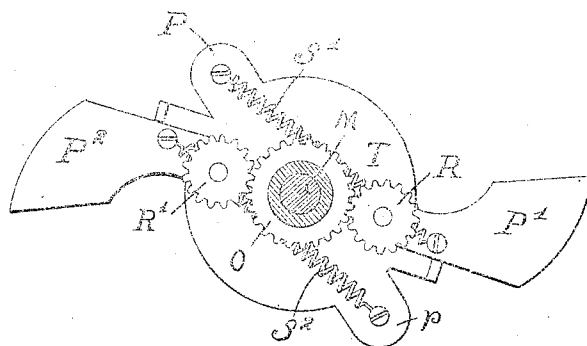


FIG. 2.

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2 SHEETS--SHEET 2.

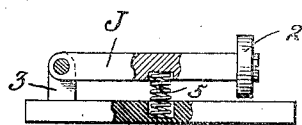
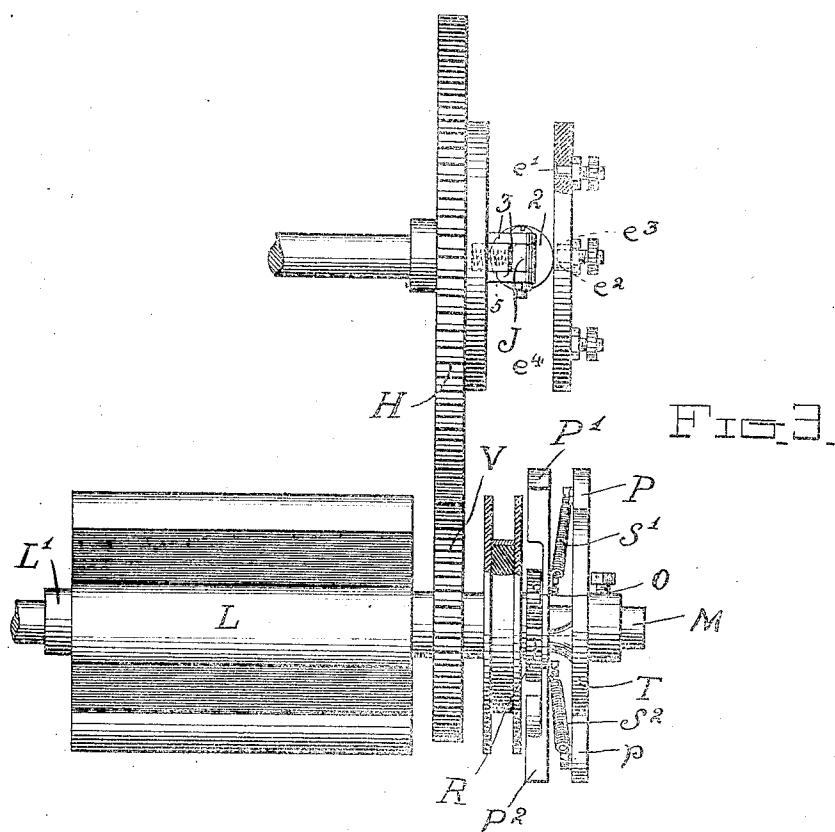


FIG 4.

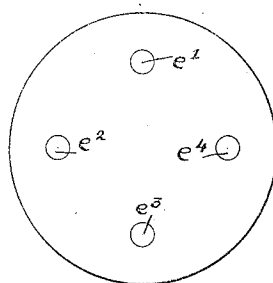


Fig 5

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UNITED STATES PATENT OFFICE.

WILLIAM K. BASSFORD, OF PERTH AMBOY, NEW JERSEY.

IGNITER FOR ENGINES.

1,002,357.

Specification of Letters Patent.

Patented Sept. 5, 1911.

Application filed April 2, 1910. Serial No. 553,070.

To all whom it may concern:

Be it known that I, WILLIAM K. BASSFORD, a citizen of the United States of America, and resident of Perth Amboy, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Igniters for Engines, of which the following is a specification.

My invention relates generally to means for igniting internal combustion engine fuel, and specifically to an improved device for automatically advancing and retarding the igniting electric spark.

The general object of my invention is to prevent accidents to the operator, while the specific object is set forth as follows:—

As well known, a generator armature rotating in a magnetic field of force has a certain point of maximum voltage. Heretofore, the timing of the spark has been so arranged that the spark will occur at the point of maximum voltage, which point is shifted by manual means forward or backward. However, as the control is by hand, it may easily be perceived that when the spark is advanced, then, unless the point of maximum voltage of the armature is also advanced through the same number of degrees, the desired benefit is lost for the reason that the spark is not of the same intensity. As management by hand is unsatisfactory and dangerous, I have invented means for accomplishing the adjustments by the action of the rotating armature. I gain the result that however far the timing device is advanced, the armature is advanced angularly, through the same number of degrees simultaneously, and the spark will always occur at the point of maximum voltage.

Figure 1 is an end view of the complete invention. Much of the frame work and casing and unnecessary elements for exhibiting the invention, are omitted. Dotted lines show hidden parts. Fig. 2 is the rear of the lower part of Fig. 1. Fig. 3 is a side view of the invention. Fig. 4 shows a detail, with parts in section. Fig. 5 is a face view of the contact plate.

The arms P and p radiate oppositely from a disk T, and are for the purpose of being moved to change the angular position of the armature with respect to the shaft M of the electric spark generator whose armature is at L. Two swinging weights P¹ and P² are

fixed to gear wheels R and R¹, the arbors 55 for the wheels being carried by the disk T. A gear O on the armature sleeve L¹ meshes with the gear wheels R and R¹, the weights flying outward by the action of centrifugal force. As the disk T is fastened rigidly to the shaft M, as the armature L is on the sleeve L¹, which is loose on the shaft M, and as there is a spring S¹ connecting the arm P to the weight P¹, and a spring S² connecting the arm p to the weight P², therefore, the higher the rotary speed of the armature the greater the outward movements of the weights P¹ and P², and the greater the angular advancement of the armature. V is another gear wheel fixed on the armature sleeve L¹ and meshing with the gear wheel H on which is mounted a timing device. As the centrifugal force, according to the speed, changes the angular position of the armature L and sleeve L¹, it also changes the angular position of the gear V, and therefore accomplishes the adjustment of the timing device with relation to the shaft M and the engine, as well as the adjustment of the armature to the point of maximum voltage.

The timing device consists of the roller 2 rotating at the end of a lever J which is pivoted to lugs 3 eccentrically located on the wheel H.

e¹, e², e³, e⁴, are contacts arranged in a row around the axis of the wheel H and in the path of the roller so that as the latter rotates, it will touch these four contacts.

5 is a spring for pressing the roller 2 against the contacts.

Other parts shown in the drawing have nothing to do with the invention, which is however defined as to its scope of novelty in the accompanying claim.

I claim as my invention;

In an igniter for internal combustion engines, the combination of a sleeve, an armature fixed thereon, a driving shaft for the armature passing loosely through said sleeve, a governor mounted upon said shaft, and gearing between said sleeve and governor for permitting the relation between said armature and driving shaft to be changed.

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Witnesses:

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