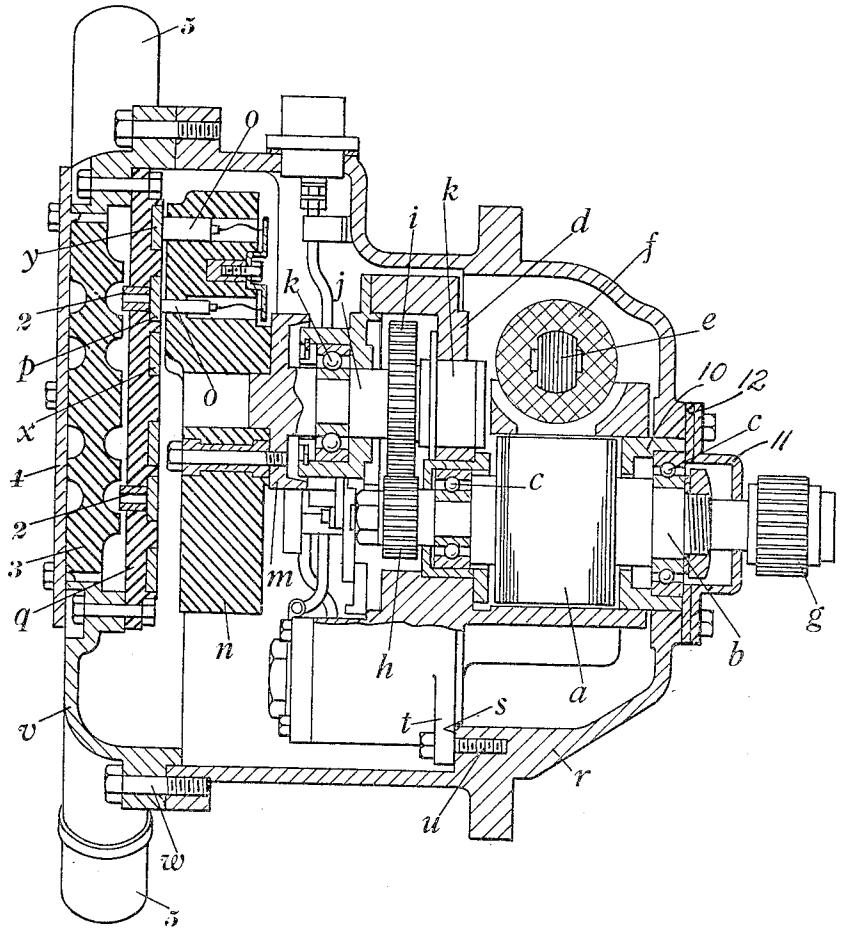
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J. A. BAINES

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IGNITION MAGNETO

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Inventor
J. A. Baines
By Glascock Downing Seibold
Attys.

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IGNITION MAGNETO

John Archibald Baines, London, England, assignor to Rotax Limited, London, England

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1 Claim. (Cl. 171—209)

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This invention relates to ignition magnetos, particularly for aircraft engines, and has for its object to provide magnetos of improved construction.

The invention comprises the combination of a self-contained unit consisting of the current generator and the rotary part of a distributor, a hollow body part having an open end in which the said unit can be inserted and secured as one piece, a cover for the open end of the body part, and a stationary distributor part carried on the inner side of the said cover.

The accompanying drawing is a sectional side elevation illustrating one embodiment of the invention.

Referring to the drawing, I employ a generator of the inductor type. This comprises an iron rotor *a* the spindle *b* of which is carried near one or each end a bearing or bearings *c* in a frame *d* of any appropriate form. In the frame are incorporated a pair of permanent magnets associated with iron pole pieces (not shown), and a core *e* carrying a current generating winding or windings, the arrangement being such that rotation of the rotor causes the required flux changes in the core. When the generator is of the kind required to supply low tension current through the distributor to each in turn of a number of high tension transformers connected directly to the sparking plugs of the engine, the core carries a single winding *f*. But when the generator is required to supply high-tension current to the sparking plugs, the core carries the usual low and high tension windings.

The outer end of the rotor spindle is adapted for connection to the source of motion (as through a removable pinion *g*), and the other end carries a pinion *h* which co-operates with a gear wheel *i* on a distributor spindle *j* which is carried by bearings *k* on the frame with its axis parallel to the rotor axis. On one end of the distributor spindle is mounted a cam *m* for operating a contact breaker on the frame, and on the same end is mounted the rotary arm *n* of the distributor, which arm carries appropriate brushes *o* or electrodes for co-operating with the stationary part *q* of the distributor. Also a cam lubricating means may be mounted on the frame.

The whole of the parts above described (excluding the part *q*) form a self-contained or independent unit which can be inserted as one piece into and enclosed by a hollow body part *r*, the latter being open at one end, for the insertion of the unit, and having at its closed end an opening through which can extend the driving end of the rotor spindle. The bearing *c* near this end of the spindle is surrounded by a supporting sleeve 10 attached to the frame *d*, and this sleeve is situated in the said opening as shown. The outer ends of this sleeve and bearing are enclosed by a cap 11, the latter being formed with a central hole through which the adjacent end of the spindle *b* passes, and being attached to the adjacent end of the body part *r*, with or without a washer 12 between the cap and body part. Within the body part a shoulder *s* is formed having a face in a plane at right angles to the axes of the spindles above mentioned, and the frame is provided with a complementary flange or a number of lugs *t* which can be secured to the said shoulder by screws *u* inserted through the open end of the body part.

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The open end of the body part is closed by a dished cover *v* adapted to be secured by screws *w* to the said end, and also adapted to carry the stationary part *q* of the distributor. Further, the cover is adapted for the insertion therethrough of the cables used for connecting the said distributor part to the sparking plugs of the engine.

The stationary distributor part comprises a disc of insulating material on the inner face of which are embedded or secured concentrically slip ring *p* and segments *y* for co-operating with the brushes or electrodes of the rotary part. In the arrangement shown the stationary part has a single continuous slip ring *p* and a surrounding ring of segments *y*. The slip ring is connected to the generating winding *f*, and the brushes or electrodes serve to effect electrical connection between the slip ring *p* and segments *y*. When (for engine-starting purposes) it is required to be able to supply current to the sparking plugs from a separate source, a second slip ring *x* is provided on the stationary part, and the rotary part is provided with additional brushes or electrodes (not shown) for connecting this ring to the segments. At the rear of the stationary distributor part are provided the required terminals (as 2) for connection with the sparking plug cables.

Preferably the cover is made hollow and is provided with a rubber pad 3 for holding the adjacent cable parts in position as described in the specification of concurrent British application for Patent No. 32,288 of 1947, the pad being held in position by a second cover 4. Also the cover *v* is formed with tubular branches 5 through which the cables are threaded.

By the present invention I am able to provide

in a very convenient form magnetos for engines, and particularly aircraft engines, having a large number of cylinders, the generator and distributor being effectively enclosed and at the same time easily accessible for renewal or cleaning, and the design being such that manufacture is greatly facilitated.

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

An ignition magneto comprising in combination, a generator having a driving spindle, a rotor on said spindle, a frame supporting said spindle, and a stator on said frame, a rotary distributor part provided with electrodes and operatively connected to said spindle, said generator and rotary distributor part together forming a self-contained unit, a hollow body part having an open end through which said unit is inserted as one piece into said body part, means removably securing said unit in said body part with said rotary distributor part adjacent to the open end of said body part, a removable cover closing the open end of said body part, and a stationary distributor part mounted on the inner side of said cover and provided with conductors for co-operating with said electrodes.

JOHN ARCHIBALD BAINES.

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