Aug. 12, 1958 R. E. PHELON 2,847,490

MAGNETO MECHANISM

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FIG. 1

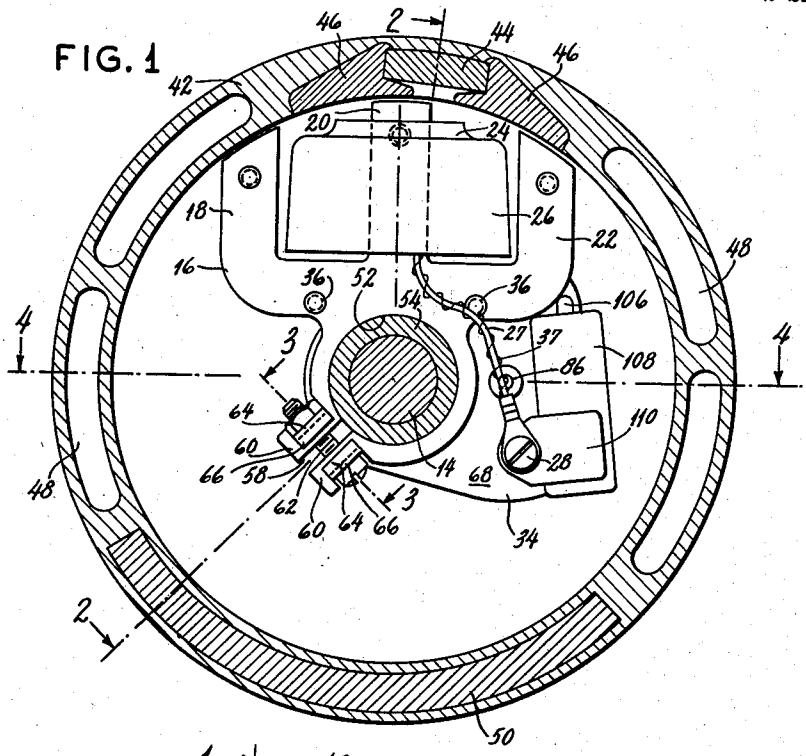


FIG. 2

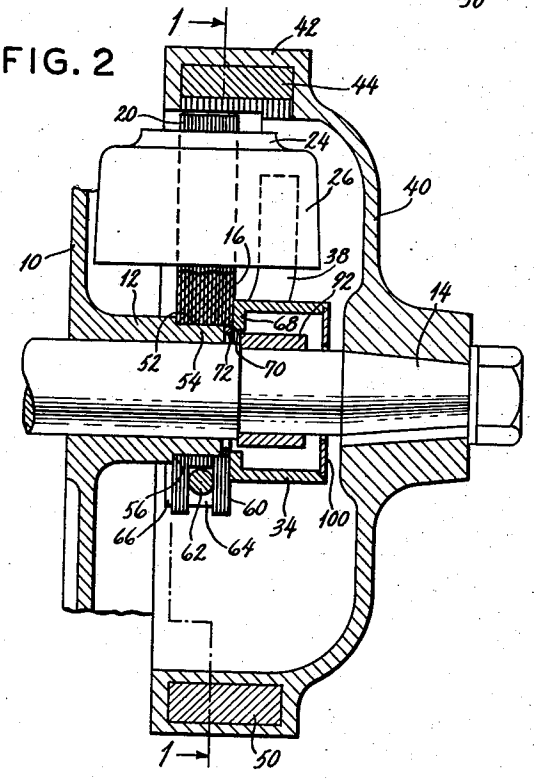
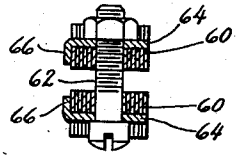


FIG. 3



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MAGNETO MECHANISM

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FIG. 4

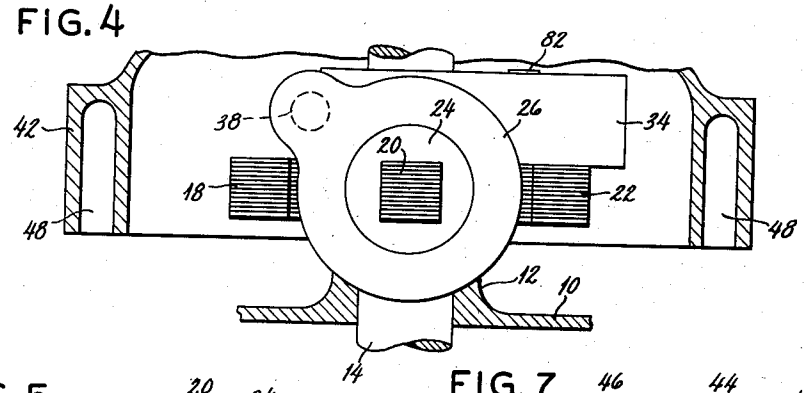


FIG. 5

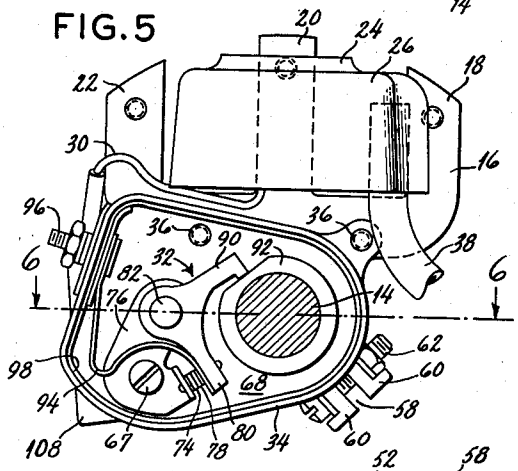


FIG. 7

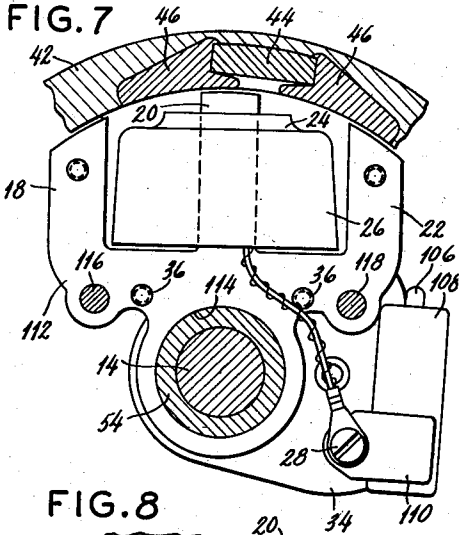


FIG. 6

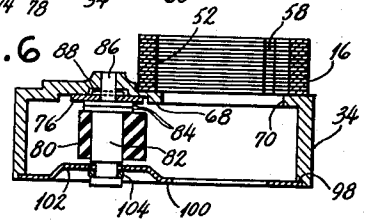


FIG. 8

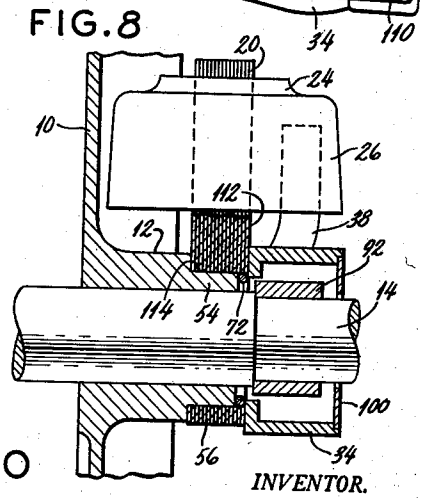


FIG. 9

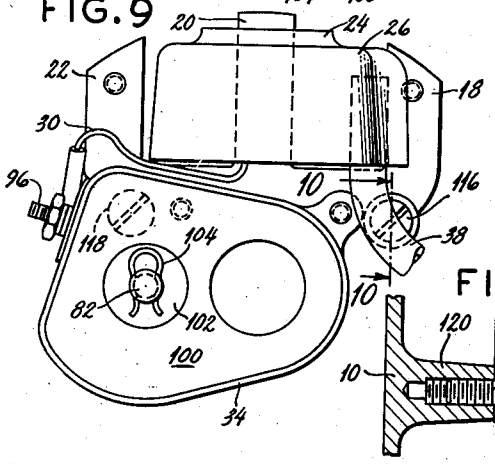
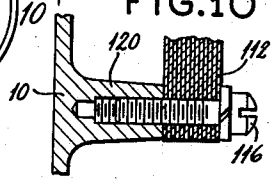


FIG. 10



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2,847,490

MAGNETO MECHANISM

Russell E. Phelon, Longmeadow, Mass.

Application March 4, 1955, Serial No. 492,158

16 Claims. (Cl. 123—149)

The invention relates generally to a magneto of the flywheel type and it relates more particularly to a magneto and engine assembly which includes an improved mounting means for the stator of the magneto.

A magneto of the said type has heretofore included a stationary mounting or frame plate to which are attached the core of the stator and the breaker mechanism and other magneto parts, said magneto frame plate being adapted to be supported by or connected with the frame of the engine with which the magneto is used. In accordance with the present invention I entirely dispense with the conventional frame plate of the magneto and connect the core of the stator directly to the frame plate of the engine without any interposed parts. In accordance with one phase of the invention, the core has a relatively large opening therein which receives and directly fits an integral hub on the engine plate, said core being adapted for assembly with the hub by longitudinal movement and means being provided to prevent rotative movement of said core around said hub. In accordance with another phase of the invention, the breaker mechanism and other parts of the magneto are attached to and supported by said core.

The drawing show two alternative embodiments of the invention, but it will be understood that various changes may be made from the constructions shown, and that the drawings are not to be construed as defining or limiting the scope of the invention, the claims forming a part of this specification being relied upon for that purpose.

Of the drawings:

Fig. 1 is a transverse sectional view of a magneto embodying the invention, the view being taken along the line 1—1 of Fig. 2.

Fig. 2 is a longitudinal sectional view taken along the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary sectional view taken along the line 3—3 of Fig. 1.

Fig. 4 is a plan view of the stator, the rotor and other parts shown in section along the line 4—4 of Fig. 1.

Fig. 5 is a front elevational view of the stator and associated parts, the breaker mechanism cover being omitted.

Fig. 6 is a fragmentary plan view taken along the line 6—6 of Fig. 5, the shaft and certain other parts being omitted.

Fig. 7 is a fragmentary view similar to Fig. 1, but showing an alternative embodiment of the invention.

Fig. 8 is a fragmentary view similar to Fig. 2 but showing the said alternative embodiment of the invention.

Fig. 9 is a view similar to Fig. 5 but showing the said alternative embodiment of the invention, the breaker mechanism cover being shown in place.

Fig. 10 is a fragmentary vertical sectional view taken along the line 10—10 of Fig. 9.

Referring to the drawings and more particularly to Figs. 1 to 6 thereof, it will be apparent that the magneto shown is of the type wherein the rotor is carried by or is formed as a part of the flywheel and wherein the rotor surrounds, or at least partly surrounds, the stator. Within the scope of the present invention the rotor and the stator may be widely varied not only as to mechanical details but also as to magnetic circuits. Except as to the hereinafter described features of novelty, the rotor and stator structures as shown and described are intended to be merely exemplary.

The stator of the magneto to which the invention more particularly relates is carried or adapted to be carried by an engine frame or plate 10 preferably having an integral boss 12. Said boss 12 is shown as being a hub which provides a bearing for a rotatable shaft 14, the shaft extending through and projecting beyond the hub. The shaft 14 may be an extension of the crankshaft of the engine with which the magneto is to be used, and in any event it is rotated in timed relationship with the engine. The stator comprises a magnetic core 16 which is formed of a plurality of flat laminations of magnetic metal all substantially identical in shape and in face-to-face contact with each other throughout the major portions of their areas which laminations are constructed and arranged to provide a plurality of circularly spaced poles having arcuate faces concentric with the axis of the shaft 14 and equidistant therefrom. As shown, the core 16 has three poles 18, 20 and 22, and a primary coil 24 surrounds the intermediate pole 20. Preferably a secondary coil 26 also surrounds said intermediate pole 20. The primary coil has a relatively small number of turns, as for instance 175, and the secondary coil has a relatively large number of turns, as for instance 10,000.

The primary coil 24 is suitably grounded at one end, for instance by being connected by a conductor 27 with a screw 28. The ungrounded end of the primary coil is connected by means of an insulated conductor 30 with a suitable circuit making and breaking mechanism 32, as hereinafter more fully described, which mechanism is preferably in close proximity to the core. As shown and as preferred, said mechanism is mounted directly upon the core 16. The circuit making and breaking mechanism 32 is preferably enclosed within and supported by a box 34 suitably connected with said core, as for instance by rivets 36, 36. Preferably, the grounding screw 28 for the primary coil 24 engages the box 34 and not the core 16. The secondary coil 26, when provided as described, is also suitably grounded, for instance by being connected by a conductor 37 with said grounding screw 28. The secondary coil is provided at its ungrounded end with an insulated conductor 38 by means of which it is connectible with the spark plug of the engine.

The rotor of the magneto includes a flywheel 40 which is connected with the shaft 14 so as to be rotatable therewith. The flywheel is preferably formed of nonmagnetic material and it is shown as having a disc-like outer wall carrying an annular flange 42 which surrounds the before-described stator. The inner or internal face of the annular flange 42 is preferably cylindrical at least in part.

Located within a recess in the flange 42 of the flywheel is a permanent magnet 44 and two similar pole pieces 46, 46 which are formed of magnetic metal and which engage the magnet at opposite ends thereof. The inner faces of the pole pieces are arcuate and are located to move in close proximity to the outer faces of the stator poles 18, 20 and 22. The flywheel flange is cored as shown at 48, 48 for weight reduction and a counterweight 50 is provided opposite the magnet and the pole pieces. As shown, the magnet and the pole pieces and

the counterweight are held in place by the metal of the flange which is cast around them.

During each rotation, the magnet and the pole pieces therefore cooperate with the poles of the stator to establish a magnetic circuit in one direction through the center pole 20 and through the coils thereon and then to establish a similar circuit in the opposite direction. Thus the direction of the magnetic circuit is suddenly reversed and a maximum value of voltage is established in the primary coil 24. The breaker mechanism is timed to break the circuit in the primary coil at approximately the instant of maximum voltage therein, thus generating a high voltage in the secondary coil 26 which is connected with the spark plug, not shown.

The laminated core 16 has an opening 52 therein adapted to receive and fit the boss 12 on the engine frame or plate 10 at the cylindrical periphery of said boss. Said engine plate therefore serves as a stationary mounting plate for the core and for the entire stator.

When the boss 12 constitutes a hub such as shown, said opening 52 is relatively large so as to fit said hub. The hub 12 is integral with the plate 10 and it has an outer end face and a central axis coinciding with the shaft axis. Said hub 12 is provided with a cylindrical periphery concentric with said axis and unobstructed at its front end. At least a portion of the interior surface of the core opening 52 directly engages said cylindrical periphery of said hub 12 so as to prevent any relative movement of said core perpendicularly to the hub axis. Said hub 12 and core 16 are so related to each other that said core is longitudinally movable into its fully engaged position on said hub. As shown, the hub 12 has a portion 54 of reduced diameter and the core engages and fits the said portion. As illustrated in Fig. 2, a shoulder 56 is provided by the reduced hub portion 54 and this shoulder may engage the core and locate it longitudinally. With the construction shown, the hub 12 serves to at least partly locate and to at least partly support the core 16.

A means is provided for preventing rotative movement of the core 16 on the hub 12. This means may be varied but as shown in Figs. 1 to 6, the core is provided with a slot 58 which extends substantially radially from the opening 52 to the exterior of the core. A means is provided which engages the core 16 for drawing toward each other the two portions of the core at opposite sides of the slot 58 with resultant clamping of said core on said hub so as to prevent rotative movement of the stator around the hub. More specifically, flanges 60, 60 are provided at opposite sides of the slot 58 and these flanges are provided with holes for receiving a bolt 62 which serves to draw the flanges toward each other and to thus clamp the core 16 on the hub portion 54. As shown, the laminations of the core 16 are notched at the flanges 60, 60 to receive bearing blocks 64, 64 for the head and nut of the bolt 62. Preferably, the blocks are provided with lips 66, 66 at their inner edges, these lips engaging the innermost lamination of the core. The said lips cooperate with the rear wall of the box 34 to prevent the laminations from spreading. It has been stated that all of the core laminations are substantially identical in shape, and the notching of some of the laminations to receive the blocks 64, 64 is regarded as constituting only a minor variation in shape.

Initially the diameter of the opening 52 is very slightly larger than the diameter of the hub portion 54 so that the core can be freely assembled with the hub in the proper angular relationship. Then the bolt 52 is tightened to effect clamping. It will be seen that with this construction the core 16 is supported entirely on the hub 12.

It has been the prior practice in magnetos of the present type to separately connect the core and the breaker mechanism with a common supporting plate additional to the engine frame or plate which common supporting plate constituted an essential part of the magneto. In accordance with the present invention the separate supporting plate is dispensed with and the breaker mechanism is supported entirely on the core which in turn is supported directly on the engine plate, preferably being supported at least in part on the hub of said engine plate.

As previously stated, a box 34 is provided for containing and supporting the breaker mechanism, this box being supported on the core and connected therewith by rivets 36, 36. The box 34 has a rear wall 68 which directly engages the front face of the core 16 and said rear wall has an opening 70 somewhat smaller than the opening 52 in the core. As shown, there is a space between the box wall 68 and the end of the hub portion 54 and this space may be filled by a ring 72.

The presently preferred breaker mechanism is shown in detail in Figs. 5 and 6. The said mechanism includes a stationary breaker point 74 carried by a bracket 76 secured by a screw 67 to the rear wall 68 of the box and thus grounded. The bracket 76 is preferably in a recess in the rear box wall 68 so that the front face of the main body of the bracket is in register with the front face of said rear wall. The mechanism includes a movable breaker point 78 carried by a rocker arm 80 mounted on a longitudinal pivot pin 82. Spacing washers 84 are provided between the rocker arm and the bracket 76. The pin 82 has a portion 86 which has a reduced diameter and is entered in a hole in the rear box wall 68. The portion 86 is provided with means such as a transverse pin 88 which engages the rear face of the bracket 76 to prevent forward movement of the pin 82. The rocker arm 80 has an extension 90 which is engaged by a cam 92 on the shaft 14. A spring 94 serves to bias the rocker arm to move the point 78 into engagement with the point 74 and the spring, or an auxiliary conductor associated therewith, serves to provide an electrical connection between the conductor 30 and the breaker point 78. The conductor 30 and the spring 94 are electrically connected with each other by a screw 96 extending through the wall of the box 34 and insulated from said wall.

The walls of the box 34 are provided at the front thereof with a rabbet 98 for receiving a front cover 100. The cover has a hole for receiving the front portion of the pivot pin 82 and the cover has a depression 102 surrounding the hole. The said pivot pin has an annular groove for receiving a removable U-shaped retaining wire 104, as best shown in Fig. 4. The wire 104 when engaged with the pin serves to hold the cover 100 in place.

By means of a conductor 106, shown in Fig. 1, a condenser 108 is connected in parallel with the breaker mechanism in accordance with customary practice. The condenser is attached to the rear wall 68 of the box 34 at the rear face of said wall by means of a clip 110. The clip may conveniently be held by the same screw 28 that serves as a connection screw for the conductor wires.

The magneto shown in Figs. 7 to 10 is for the most part similar to that shown in Figs. 1 to 6, and as illustrated it differs only in the details of the core plate and the mounting means therefor. The stator, except as to the mounting of the core, is or may be exactly as previously described; the rotor is or may be exactly as previously described; and the breaker mechanism is or may be exactly as previously described.

The magneto has a core 112 which differs from the core 16 only in the shape of its lower portion. The core 112 has an opening 114 which fits the hub portion 54 but the core does not have any slot such as 58 extending to the said opening. The portion 54 of the hub partly locates the core 112, but it does not prevent rotative movement of the core and the entire stator around said hub. Such rotative movement is prevented by at least

one screw **116** extending through a suitable hole in the core, and preferably there are two screws **116** and **118**. Bosses **120** are provided on the engine plate **10** which have their front faces in engagement with the rear face of the core. Said bosses have threaded holes for receiving said screws **116** and **118**. The screw **118** is slightly longer than the screw **116** as said screw must also extend through a hole in the rear wall **68** of the box **34**, the head of the screw being within the box.

As will be apparent from Fig. 7, the condenser **108** is in a slightly different position to accommodate the different shape of the core **112**.

From the foregoing description it will be apparent that the present invention avoids the prior necessity for providing a separate stamped or die-cast plate which supported the laminated core with its coils, and the separately supported breaker mechanism and the condenser. Owing to a necessity for a close clearance between the moving magnet poles of the rotor and the outer extremities of the coil core poles, a machining operation was usually performed which involved accurate turning of the coil pole extremities in relation to a hole in the stator core, which hole served to register or center the coil core. This turning operation or some other means has heretofore been necessary in order to both maintain an accurate radius for each of the coil core ends and also to counteract a tendency for a laminated stack to have an uneven outer extremity due to the bending of the rivets which normally hold the lamination plates together.

As previously stated, the present invention makes it possible to dispense with the conventional frame or stator plate of the magneto and to connect the core of the stator directly to the frame plate of the engine, the breaker mechanism and other parts of the magneto preferably being attached to said core. More specifically the core has a relatively large opening therein which receives and fits a hub on the engine plate, means being provided to prevent rotative movement of said core around said hub. Each lamination of the core can be stamped in an accurate die which maintains a close tolerance between the center of the mounting hole and the core pole extremities. When a stack of such laminations are placed on a closely fitting center hub, alignment of the entire stack is assured. This obviates the necessity for any machining or special operations in order to acquire the necessary concentricity and alignment of the laminations.

The invention claimed is:

1. A magneto and engine assembly comprising in combination, a stationary engine plate having an opening therein and including an integral boss which has a substantially cylindrical periphery and is unobstructed at its front end, a rotatable shaft extending through said opening in the engine plate, a core formed of a plurality of flat laminations of magnetic metal all substantially identical in shape and thickness and in face-to-face contact with each other throughout the major portions of their areas which laminations are provided collectively with an opening into which said boss projects with the interior surface of the opening in at least some of said laminations directly engaging said cylindrical surface of said boss so as to prevent any movement of said core perpendicularly to said boss, said boss and core being so related to each other that said core is longitudinally movable into its fully engaged position on said boss and all of said laminations of said core being shaped to provide at least three poles having faces which are equally spaced from the axis of said shaft when said core is in its said engaged position, a primary coil surrounding one of said poles of the core and cooperating with said core to constitute a stator, means engaging the core for preventing rotative movement of the stator around said boss, a rotor carried by said projecting portion of said rotatable shaft and including a magnet and pole pieces movable in close proximity to said pole faces of the stator, a breaker mechanism electrically connected with said primary coil of the stator and including separable contacts, and means connected with said shaft for operating the breaker mechanism to engage and separate the contacts thereof in timed relation with the rotation of said rotor.

2. A magneto and engine assembly comprising in combination, a stationary engine plate including an outwardly projecting integral hub having a front face and having a central axis, said hub being provided with a cylindrical periphery concentric with said axis and unobstructed at its front end, a rotatable shaft concentric with said hub axis and having a portion extending through and projecting beyond said front face of the hub, a core formed of a plurality of flat laminations of magnetic metal all substantially identical in shape and thickness and in face-to-face contact with each other throughout the major portions of their areas which laminations are provided collectively with a relatively large opening into which said hub projects with the interior surface of the opening in at least some of said laminations directly engaging said cylindrical periphery of said hub so as to prevent any movement of said core perpendicularly to said hub axis, said hub and core being so related to each other that said core is longitudinally movable into its fully engaged position on said hub and all of said laminations of said core being shaped to provide at least three poles having faces which are equally spaced from said hub axis when said core is in its said engaged position, a primary coil surrounding one of said poles of the core and cooperating with said core to constitute a stator, means engaging the core for preventing rotative movement of the stator around said hub, a rotor carried by said projecting portion of said rotatable shaft and including a magnet and pole pieces movable in close proximity to said pole faces of the stator, a breaker mechanism electrically connected with said primary coil of the stator and including separable contacts, and means connected with said shaft for operating the breaker mechanism to engage and separate the contacts thereof in timed relation with the rotation of said rotor.

3. A magneto and engine assembly as set forth in claim 2, wherein said relatively large opening in said core laminations is of uniform diameter through all of said laminations which diameter is the same as that of said cylindrical periphery of said hub.

4. A magneto and engine assembly comprising in combination, a stationary engine plate having a projecting hub with a cylindrical periphery, a rotatable shaft having a portion extending through and projecting beyond the hub, a core formed of a plurality of flat laminations of magnetic metal all substantially identical in shape and in face-to-face contact with each other throughout the major portions of their areas which laminations are all shaped to provide at least three poles having faces equally spaced from the axis of the shaft, said core laminations having a relatively large opening therein which receives and fits said hub, primary and secondary coils surrounding one of said poles of the core and cooperating with said core to constitute a stator, a breaker cam on said shaft, a breaker mechanism electrically connected with said primary coil and operable by said cam which breaker mechanism is supported on said core, means engaging the core for preventing rotative movement of the stator and breaker mechanism around said hub, and a rotor carried by the projecting portion of said rotatable shaft and including a magnet and pole pieces movable in close proximity to said pole faces of the stator.

5. A magneto and engine assembly comprising in combination, a stationary engine plate having a projecting hub, a rotatable shaft having a portion extending through and projecting beyond the hub, a core formed of laminated magnetic metal and shaped to provide a plurality of poles having faces equally spaced from the axis of the shaft, said core having a relatively large opening therein which receives and fits said hub, primary and secondary

coils surrounding one of said poles of the core and cooperating with said core to constitute a stator, a breaker cam on said shaft, a box supported entirely on said core, a breaker mechanism operable by said cam and located within and supported by said box which breaker mechanism is electrically connected with said primary coil, means engaging the core for preventing rotative movement of said stator and said box around said hub, and a rotor carried by the projecting portion of said rotatable shaft and including a magnet and pole pieces movable in close proximity to said pole faces of the stator.

6. A magneto and engine assembly comprising in combination, a stationary engine plate, a rotatable shaft having a portion extending through and projecting beyond the engine plate, a core formed of laminated magnetic metal and shaped to provide a plurality of poles having faces equally spaced from the axis of the shaft, primary and secondary coils surrounding one of said poles of the core and cooperating with said core to constitute a stator, a breaker cam on said shaft, a box supported entirely on said core and having a rear wall, a breaker mechanism operable by said cam and located within and supported by said box which breaker mechanism is electrically connected with said primary coil, a condenser carried by said box at the rear of the rear wall thereof and electrically connected in parallel with said breaker mechanism, means engaging the core for preventing rotative movement of said stator and said box and said condenser around said hub, and a rotor carried by the projecting portion of said rotatable shaft and including a magnet and pole pieces movable in close proximity to said pole faces of the stator.

7. A magneto and engine assembly comprising in combination, a stationary engine plate having a projecting hub, a rotatable shaft having a portion extending through and projecting beyond the hub, a core formed of laminated magnetic metal and shaped to provide a plurality of poles having faces equally spaced from the axis of the shaft, said core having a relatively large opening therein which receives and fits said hub and having a slot extending substantially radially from said opening to the exterior of said core, primary and secondary coils surrounding one of said poles of the core and cooperating with said core to constitute a stator, means engaging the core for drawing toward each other the portions thereof at opposite sides of said slot with resultant clamping of said core on said hub so as to prevent rotative movement of the stator around the hub and so as to enable the hub to serve as the sole support for said stator, and a rotor carried by the projecting portion of said rotatable shaft and including a magnet and pole pieces movable in close proximity to said pole face of the core.

8. A magneto and engine assembly comprising in combination, a stationary engine plate having a projecting hub, a rotatable shaft having a portion extending through and projecting beyond the hub, a core formed of laminated magnetic metal and shaped to provide a plurality of poles having faces equally spaced from the axis of the shaft, said core having a relatively large opening therein which receives and fits said hub and having a slot extending substantially radially from said opening to the exterior of said core, primary and secondary coils surrounding one of said poles of the core and cooperating with said core to constitute a stator, means engaging the core for drawing toward each other the portions thereof at opposite sides of said slot with resultant clamping of said core on said hub so as to prevent rotative movement of the stator around the hub and so as to enable the hub to serve as the sole support for said stator, a breaker cam on said shaft, a breaker mechanism electrically connected with said primary coil and operable by said cam which breaker mechanism is supported on said core plate, and a rotor carried by the projecting portion of said rotatable shaft and including a magnet and pole pieces movable in close proximity to said pole face of the core.

9. A magneto and engine assembly comprising in combination, a stationary engine plate including an outwardly projecting integral hub having a front face and having a central axis, said hub being provided with a cylindrical periphery concentric with said axis and unobstructed at its outer end, a rotatable shaft concentric with said hub axis and having a portion extending through and projecting beyond said front face of the hub, a core formed of a plurality of flat laminations of magnetic metal all substantially identical in shape and thickness and in face-to-face contact with each other throughout the major portions of their areas which laminations are provided collectively with a relatively large opening into which said hub projects with the interior surface of the opening in at least one of said laminations directly engaging said cylindrical periphery of said hub so as to prevent any movement of said core perpendicularly to said hub axis, said hub and core being so related to each other that said core is longitudinally movable into its fully engaged position on said hub and all of said laminations of said core being shaped to provide at least three poles having faces which are equally spaced from said hub axis when the core is in its said engaged position, a primary coil surrounding one of said poles of the core and cooperating with said core to constitute a stator, means additional to and spaced from the hub for connecting the core with the engine plate so as to prevent rotative movement of the stator around the hub, a rotor carried by said projecting portion of said rotatable shaft and including a magnet and pole pieces movable in close proximity to said pole faces of the stator, a breaker mechanism electrically connected with said primary coil of the stator and including separable contacts, and means connected with said shaft for operating the breaker mechanism to engage and separate the contacts thereof in timed relation with the rotation of said rotor.

10. A magneto and engine assembly as set forth in claim 9 wherein the means for connecting the core with the engine plate includes a boss integral with the engine plate and having a front face in engagement with the rear face of the core and also includes a screw extending through said core and into said boss.

11. A magneto and engine assembly comprising in combination, a stationary engine plate having a projecting hub, a rotatable shaft having a portion extending through and projecting beyond the hub, a core beyond the hub, a core formed of a plurality of flat laminations of magnetic metal all substantially identical in shape and thickness and in face-to-face contact with each other throughout the major portions of their areas which laminations are all shaped to provide at least three poles having faces equally spaced from the axis of the shaft, said core laminations having a relatively large opening therein which receives and fits said hub, primary and secondary coils surrounding one said poles of the core and cooperating with said core to constitute a stator, means additional to and spaced from the hub for connecting the core with the engine plate so as to prevent rotative movement of the stator around the hub, a breaker cam on said shaft, a breaker mechanism electrically connected with said primary coil and operable by said cam which breaker mechanism is supported on said core, and a rotor carried by the projecting portion of said rotatable shaft and including a magnet and pole pieces movable in close proximity to said pole face of the core.

12. For use in a flywheel magneto, the combination of, a core formed of a plurality of flat laminations of magnetic metal all substantially identical in shape and thickness and in face-to-face contact with each other throughout the major portions of their areas which laminations are all perpendicular to a central axis and are all shaped to provide a plurality of poles having faces equally spaced from said central axis, the laminations of said core collectively having a relatively large opening

therein at least approximately concentric with said central axis and of such size as to receive and fit a hub on a stationary mounting plate, primary and secondary coils surrounding one of said poles of the core and cooperating with said core to constitute a stator, a breaker mechanism supported by said core, and means engageable with said core for holding the stator and breaker mechanism in fixed positions with the hub of the mounting plate fitting said hole in the core.

13. For use in a flywheel magneto, the combination of, a core formed of metallic laminations perpendicular to a central axis and shaped to provide a plurality of poles having faces equally spaced from said central axis, primary and secondary coils surrounding one of said poles of the core and cooperating with said core to constitute a stator, a box supported entirely on said core and having a rear wall which box has a forwardly removable front cover, a breaker mechanism located within and supported by said box which breaker mechanism includes a longitudinal pivot pin connected with the rear wall of the box and extending through the front cover of the box and also includes a rocker arm on said pivot pin, means detachably engaging the pivot pin near the front end thereof for holding the front box cover in place, and means engageable with said core for holding the stator and breaker mechanism in fixed relationship with a mounting plate.

14. For use in a flywheel magneto, the combination of, a core formed of metallic laminations perpendicular to a central axis and shaped to provide a plurality of poles having faces equally spaced from said central axis, primary and secondary coils surrounding one of said poles of the core and cooperating with said core to constitute a stator, a box supported entirely on said core and having a rear wall, a breaker mechanism located within and supported by said box which breaker mechanism is electrically connected with said primary coil, a condenser

carried by said box at the rear of the rear wall thereof and electrically connected in parallel with said breaker mechanism, and means engageable with said core for holding said stator and said box and said condenser in fixed relationship with a mounting plate.

15. For use in a flywheel magneto, the combination of, a core formed of metallic laminations perpendicular to a central axis and shaped to provide a plurality of poles having faces equally spaced from said central axis, the said core having a relatively large opening therein at least approximately concentric with said axis and of such size as to receive and fit a hub on a stationary mounting plate and having a slot extending substantially radially from said opening to the exterior of said core, primary and secondary coils surrounding one of said poles of the core and cooperating with said core to constitute a stator, and means engaging the core for drawing toward each other the portions thereof at opposite sides of said slot with resultant clamping of said plate on said hub so as to prevent rotative movement of the stator around the hub and so as to enable the hub to serve as the sole support for said stator.

16. A combination as set forth in claim 15, wherein the core is provided with parallel flanges at opposite sides of said slot, and wherein a bolt extends between said flanges for drawing them toward each other to effect clamping.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 2,847,490 August 12, 1958

Russell E. Phelon

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 3, line 69, for "bolt 52" read -- bolt 62 --; column 8, lines 47 and 48, strike out "a core beyond the hub,"; line 56, after "one" insert -- of --.

Signed and sealed this 25th day of November 1958.

(SEAL)
Attest:

KARL H. AXLINE
Attesting Officer

ROBERT C. WATSON
Commissioner of Patents