May 10, 1932. G. FOSSATI 1,857,718

IGNITION MAGNETO

Filed July 30, 1930

Fig. 5

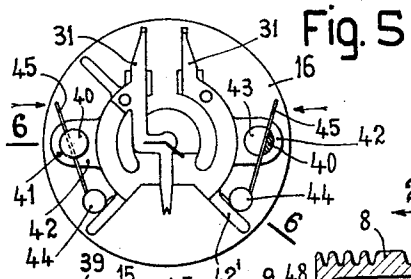


Fig. 1

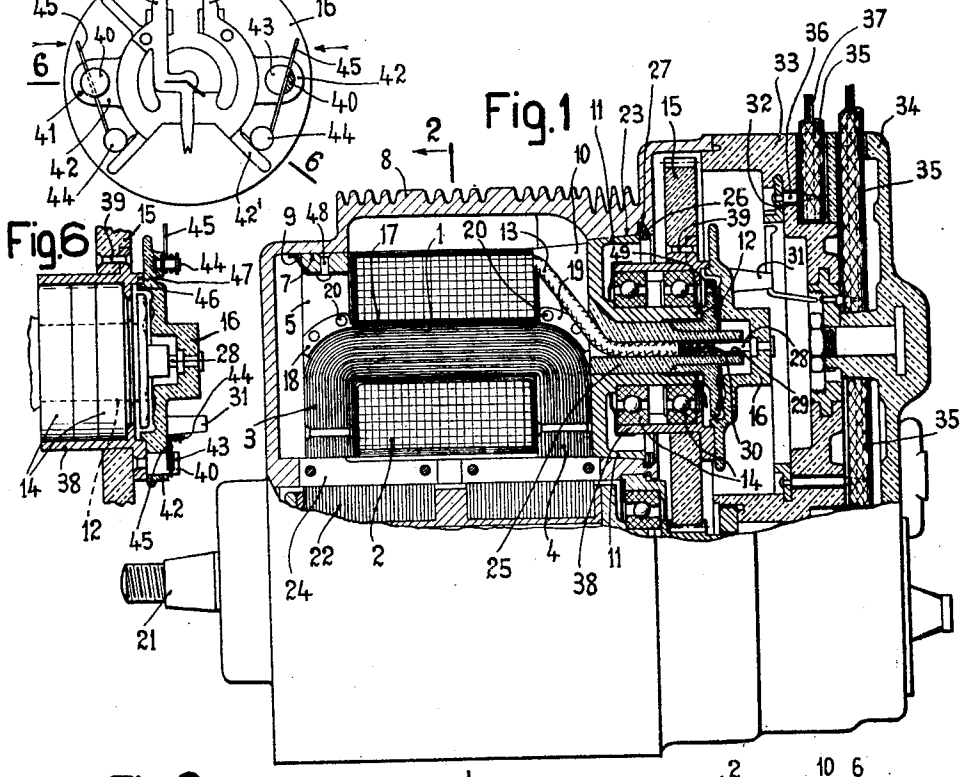


Fig. 6

Fig. 2

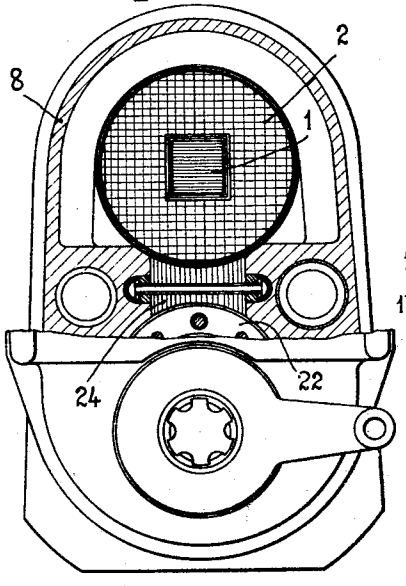


Fig. 3

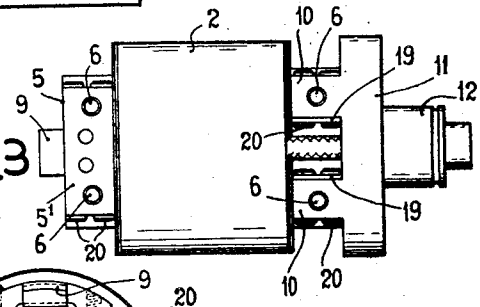
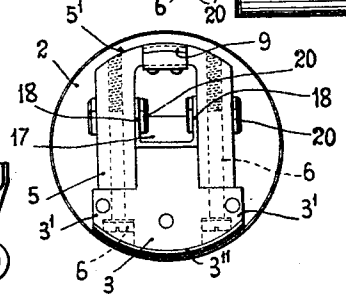


Fig. 4



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1,857,718

UNITED STATES PATENT OFFICE

GIUSEPPE FOSSATI, OF MONZA, ITALY, ASSIGNOR TO FABBRICA ITALIANA MAGNETI MARELLI SOCIETÀ ANONIMA

IGNITION MAGNETO

Application filed July 30, 1930, Serial No. 471,819, and in Italy September 5, 1929.

The present invention has for its object a stationary armature for ignition magnetos and means for mounting the same in the magneto body.

This invention also comprises means for distributing current generated in said armature and means for removably mounting of the current distributor.

An embodiment of the present invention is illustrated by way of example on the annexed drawings, and

Figure 1 is a fragmentary central vertical section of a magneto including a stationary armature according to this invention;

Figure 2 is a fragmentary section on line 2—2 of Figure 1;

Figure 3 is a plan view of the armature removed from the magneto body;

Figure 4 is an end view of the same from left hand as seen in Figure 1;

Figure 5 is a fragmentary front view of current distributor as seen from right hand in Figure 1;

Figure 6 is a fragmentary section on line 6—6 of Figure 5.

The magneto illustrated comprises a body 8 in which an inductor 22 is mounted to rotate it being driven by a shaft 21, and inductor 22 producing a variable magnetic flux in a stationary core 24 contacted by the ends of the armature core 1 as hereinafter described.

The armature of this invention comprises a laminated core 1 whose ends are bent in a direction transverse to main body 1 of said core and provide transversely enlarged heads 3, 4; as usually on core body 1 are located primary and secondary windings shown in their whole by reference 2.

On head 3 of core 1 is located an inverted U-shaped plate 5 whose bottom ends abut on side projections 3′—3′ of core head 3; screws 6 extending throughout projections 3′—3′ engage side legs of U-plate 5 and fasten said plate 5 on head projections 3′—3′ of core 1.

Surfaces 5′—3″ of U-plate 5 and head 3 of core 1 are turned together to provide a continuous cylindrical or tapering surface adapted to engage a seat of magneto body 8 and of stationary core 24.

The intermediate transverse portion of U-plate 5 has a spring 9 fastened thereon by a rivet 48 said spring 9 being adapted to engage the internal surface of body 8 as illustrated in Figure 1, in which position the spring 9 produces a friction against the body seat for the purpose of holding the armature in position.

On opposite head 4 of core 1 are located and secured side extensions 10 of a tapering collar 11 engaging a tapering seat 23 of magneto body 8. Said collar 11 provides a sleeve 12 having an insulating lining 25 through which extends a conductor 13 leading from winding 2 to current distributor 16 to be hereinafter described, and on said sleeve 12 are mounted stationary rings of ball bearings 14, 14 by which a pinion 15 carrying said current distributor 16 is loosely mounted by a sleeve 38 solid with it by rivets 39 and embracing outer rings of bearings 14, 14; said pinion 15 is driven by a cooperating pinion (not shown) solid with driving shaft 21.

The interconnection of core 1 and parts 5 and 10 is assisted by a strip 17 embodied in the core 1 and providing upturned lugs 18, 19 which are fastened on U-plate 5 and extensions 10 of collar 11 respectively by means of rivets 20.

The described armature is positioned within the magneto body 8 by inserting surfaces 5′, 3″ and 10, 11 within cooperating seats 7, 23 of body 8; it is then engaged in position by an expansible ring 26 having a tapering cross section which fits in a groove 27 of similar shape made in body 8, the expansion of said ring 26 forcing the armature in position in its seats.

The current distributor above referred to consists of a disc 16 of insulating material which carries a central contact 28 having a shell 29 slidable thereon and contacted by a spring 30 forcing it on the end of conductor 13.

Brushes 31 are fastened on said disc 16, said brushes being connected with contact 28 and intended to supply high voltage current fed by conductor 13 to segments 32 fastened on

the insulating hood 33 which is closed by a cover 34; each segment 32 is connected with cable 35 leading to an engine plug (not shown) by means of a pin 36 fastened on segment 32 and entering the conducting cord 37 of said cable.

Distributor 16 is removably fastened on sleeve 38 and driving pinion 15 solid therewith by means of studs 40 fastened on end flange of said sleeve 38 and loosely extending through registering holes 41 provided in projections 42 of distributor 16 (see Figures 1, 5 and 6).

Each of studs 40 has a notch 43 facing the rotary axis of sleeve 38 and distributor 16 has studs 44 fastened thereon on which are engaged wire springs 45 embracing said studs 44 and having a limb abutting on distributor projections 42′ and another limb adapted to engage said notches 43 of studs 40 solid with sleeve 38.

To release distributor 16 from sleeve 38 after the cover 33—34 removed, springs 45 are shifted by fingers as shown by arrows in Figure 5, to release said springs 45 from notches 43 of studs 40; thereafter said distributor 16 is withdrawn longitudinally from sleeve 38 to release it from studs 40.

To put distributor 16 again in position, reverse manipulations are made, that is the distributor is inserted on sleeve 38 to engage its holes 41 over studs 40 while springs 45 being held deflected inwardly, and then said springs 45 are released to enable them to engage notches 43 of studs 40.

Cooperating flanges 46 and 47 are provided distributor 16 and sleeve 38 to center and position said distributor on said sleeve.

In the described arrangement the armature provides an integral structure which may be easily positioned in the magneto body without use of screws or similar means liable to become loose under shocks and vibrations it being safely held in position by expansion ring 26; further no electrical connection is to be made or disconnected because said armature having one end of winding 2 connected therewith as usual is in direct contact with magneto mass, and the other end of winding 2 is permanently connected with conductor 13 leading to contact 28 of distributor 16 which is positioned on and carried by said armature with pinion 15 driving it.

Further the distributor is easily located on and removed from the armature, the manipulations for its location and removal being simple and its mounting requiring no screw or member subject to become loose.

Of course the present invention is able of many embodiments lying within appended claims.

What I claim as my invention and desire to secure by United States Letters Patent is:—

1. A stationary armature for ignition magnetos comprising a core, windings on said core, a part fastened on one end of said core, a collar fastened on the other end of said core, said core and part and collar being adapted to engage respective seats of the magneto frame, a sleeve extending from said collar, antifriction means on said sleeve, and a current-distributor connected with said winding and carried by said antifriction means.

2. A stationary armature for ignition magnetos comprising a core, windings on said core, a part fastened on one end of said core, a collar fastened on the other end of said core, said core and part and collar being adapted to engage respective seats of the magneto frame, a sleeve extending from said collar, antifriction means on said sleeve, and a current-distributor connected with said winding and removably carried by said antifriction means.

3. A stationary armature for ignition magnetos, comprising a core, windings on said core, a part fastened on one end of said core, a collar fastened on the other end of said core, said core and part and collar being adapted to engage respective seats of the magneto frame, a sleeve extending from said collar, a central contact connected with said winding in said sleeve, antifriction means on said sleeve, a current distributor and driving means therefor removably mounted on said antifriction means and a contact in said distributor engaging said sleeve central contact.

4. A stationary armature for ignition magnetos, comprising a core, windings on said core, a part fastened on one end of said core, a collar fastened on the other end of said core, said core and part and collar being adapted to engage respective seats of the magneto frame, a sleeve extending from said collar, antifriction means on said sleeve, a member carried by said antifriction means, a current distributor connected with said winding, and spring means interengaging said distributor and member.

5. A stationary armature for ignition magnetos comprising a core, windings on said core, a part fastened on one end of said core, a collar fastened on the other end of said core, said core and part and collar being adapted to engage respective seats of the magneto frame, a sleeve extending from said collar, antifriction means on said sleeve, a member carried by said antifriction means, a current distributor connected with said winding, cooperating positioning means on said member and distributor, and spring means interengaging said distributor and member.

6. A stationary armature for ignition magnetos, comprising a core, windings on said core, a part fastened on one end of said core, a collar fastened on the other end of said core, said core and part and collar being adapted to engage respective seats of the mag-

neto frame, a sleeve extending from said collar, antifriction means on said sleeve, a member carried by said antifriction means, a current distributor connected with said winding and fitting on said member, recessed studs extending from said member throughout said distributor, and resilient members carried by said distributor and engaging said recessed studs.

7. A stationary armature for ignition magnetos, comprising a core, windings on said core, parts fastened on the ends of said core and adapted to engage the respective seats of the magneto frame, and an expansible ring engaging a groove of said magneto frame and clamping said armature in position.

8. A stationary armature for ignition magnetos, comprising a core, windings on said core, parts fastened on the ends of said core and adapted to engage the respective seats of the magneto frame, and a tapering cross-section expansible ring engaging a tapering groove of said magneto frame and clamping said armature in position.

9. A stationary armature for ignition magnetos, comprising a core, windings on said core, parts fastened on the ends of said core and adapted to engage the respective seats of the magneto frame, and a spring member on one of said parts frictionally engaging said magneto frame.

10. A stationary armature for ignition magnetos having frames, having seats, and having magneto elements therein comprising a core, windings on said core, parts fastened on the ends of said core forming supports confined by a line comprising within it the transverse profile of said core and windings, said supports being adapted to engage respective seats of the magneto frame for magnetic connection of the armature with magnetic elements in said frame, and resilient means for clamping said armature in said frame.

11. A stationary armature for ignition magnetos having frames, having seats and having magneto elements therein, comprising a core, windings on said core, parts fastened on the ends of said core forming supports confined by a line comprising within it the transverse profile of said core and windings, said supports being adapted to engage respective seats of the magneto frame for magnetic connection of the armature with magnetic elements in said frame, and an expansible ring for clamping said armature in said frame.

12. A stationary armature for ignition magnetos having frames, having seats and having magneto elements therein, comprising a core, windings on said core, parts fastened on the ends of said core forming supports in the shape of a surface of revolution comprising within it the transverse profile of said core and windings, said supports being adapted to engage respective seats of the magneto frame for magnetic connection of the armature with magnetic elements in said frame, and resilient means for clamping said armature in said frame.

13. A stationary armature for ignition magnetos having frames having seats and having magneto elements and grooves therein, comprising a core, windings on said core, a part fastened on one end of said core and forming with it a support adapted to engage a seat in the magneto frame, a collar fastened on the other end of said core and adapted to engage a corresponding seat of the magneto frame, and an expansible ring adapted to be located in a groove of said magneto frame and to engage said collar.

In testimony whereof I have signed my name to this specification.

GIUSEPPE FOSSATI.