

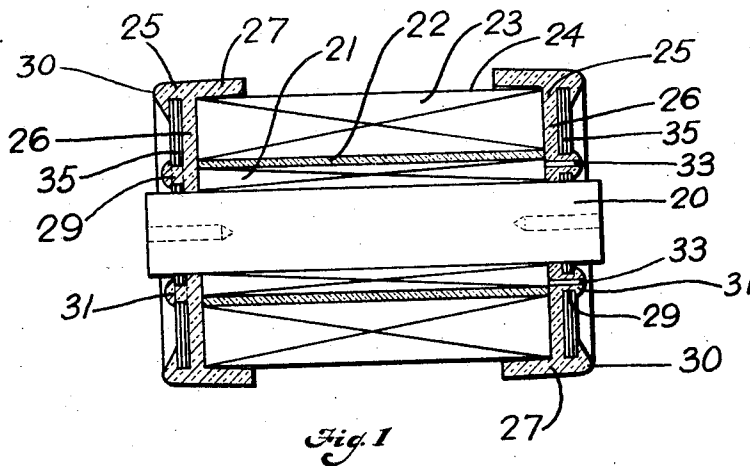
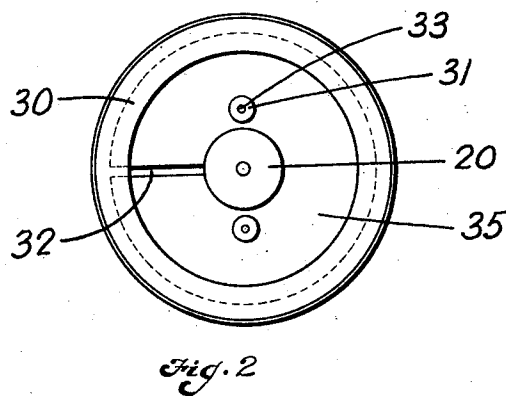
April 9, 1929.

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1,708,211

IGNITION COIL

Filed Dec. 20, 1926



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UNITED STATES PATENT OFFICE.

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IGNITION COIL.

Application filed December 20, 1926. Serial No. 155,777.

The present invention relates to improvements in induction coils and particularly such coils used for providing ignition for motor vehicle engines.

It is among the objects of the present invention to provide a coil which will operate efficiently and quietly and which may be inexpensively produced.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings wherein a preferred embodiment of one form of the present invention is clearly shown.

In the drawings:

Fig. 1 is a section taken longitudinally of the coil.

Fig. 2 is an end view of the coil taken from the right of Fig. 1.

Referring to the drawing, the numeral 20 designates the metallic core upon which is wound the primary winding 21. A sleeve 22 of insulating material surrounds this primary winding and around this sleeve the secondary winding 23 is wound. The secondary winding is surrounded by a thin sheet of any suitable insulating material designated by the numeral 24.

Bell-shaped end covers 25 are provided over each end of the coil. These end covers may be made in any suitable manner, but for applicant's purposes it is preferably formed by a pressing or molding operation from phenolic condensation products such as bakelite, condensite or the like.

Each end cover 25 comprises an end portion 26 provided with a cylindrically shaped flange 27, the end portion having a central aperture which fits snugly over the core, the cylindrical flange fitting above the coil and enclosing a portion thereof.

A metallic disc 35 is provided on the end surface of each end cover, said disc preferably comprising sheet metal laminations centrally apertured to fit snugly about the core so as to contact therewith. A plurality of smaller apertures 29 are provided in the disc adjacent the central aperture.

When the central portion only of the disc is secured to the end cover, the free edges of the laminations will be set in motion during the operation of the coil, such motion being caused either by the magnetic action of the coil or through vibrations of the coil mounting, thereby causing said laminations to be

noisy. To avoid this, applicant embeds certain portions of the disc in the end cover material when said end cover is being formed.

In the Fig. 1, it is clearly shown that the peripheral edge of the disc is embedded in a bead 30 formed about the edge of the end cover. The material of the end cover during formation of said cover, squashes through the smaller apertures 29 and overlaps the outer edges of said apertures in the form of rivet heads 31. Thus the entire peripheral edge and certain inner portions are securely anchored to the end cover and movement of the laminations of the disc is prevented.

A slot 32 formed in the disc from the central aperture to the edge, provides impedance to eddy currents tending to form in said disc.

Several of the portions of the end cover material extending through the smaller apertures 29 of the disc have passages 33 which provide conduits for the wires of the windings.

This structure provides an efficient and quiet coil, particularly adapted for use in connection with engines of automotive vehicles, said coil being of such a simplified design that it may be produced commercially at a minimum cost.

While the form of embodiment of the present invention as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. An induction coil comprising in combination, a core; windings on said core; end covers for said coil; a metallic disc supported by each cover; and means for anchoring the periphery of a disc to a cover.

2. An induction coil comprising in combination, a metallic core; windings on said core; end covers of insulating material fitting about the core and over said coil; a metallic disc supported by each cover; and means provided by a cover for anchoring the periphery of a disc to a cover.

3. An induction coil comprising in combination, a metallic core having windings thereon; bell-shaped end covers of moldable insulating material adapted to fit about the core and each end of the windings, and metallic discs secured to the covers by providing the covers with portions molded about the peripheries of the discs and with portions mold-

ed through apertures provided in the discs.

4. An induction coil comprising in combination, a metallic core having windings thereon; bell-shaped end covers for the coil
5 formed of moldable insulating material and each including a metallic disc comprising laminations, apertured, and fitting about the core, said disc being securely anchored to the cover by portions overlapping the entire peripheral edge of the disc and the edges of the
10 apertures.

5. An induction coil comprising in combination, a metallic core having windings thereon; bell-shaped end covers for the coil,
15 formed of moldable insulating material, each

cover being provided with a disc of metal comprising laminations which snugly fit about the core and include apertures adjacent said core, said disc being securely anchored to the outer end face of the cover by 20 means of a portion thereof overlapping the peripheral edge of the disc and a portion of the cover material extending through and overlapping the apertures in the disc, certain of the said portion extending through the 25 apertures being channeled to provide passages for the leads of the coil.

In testimony whereof I hereto affix my signature.

RALPH I. BATES.