

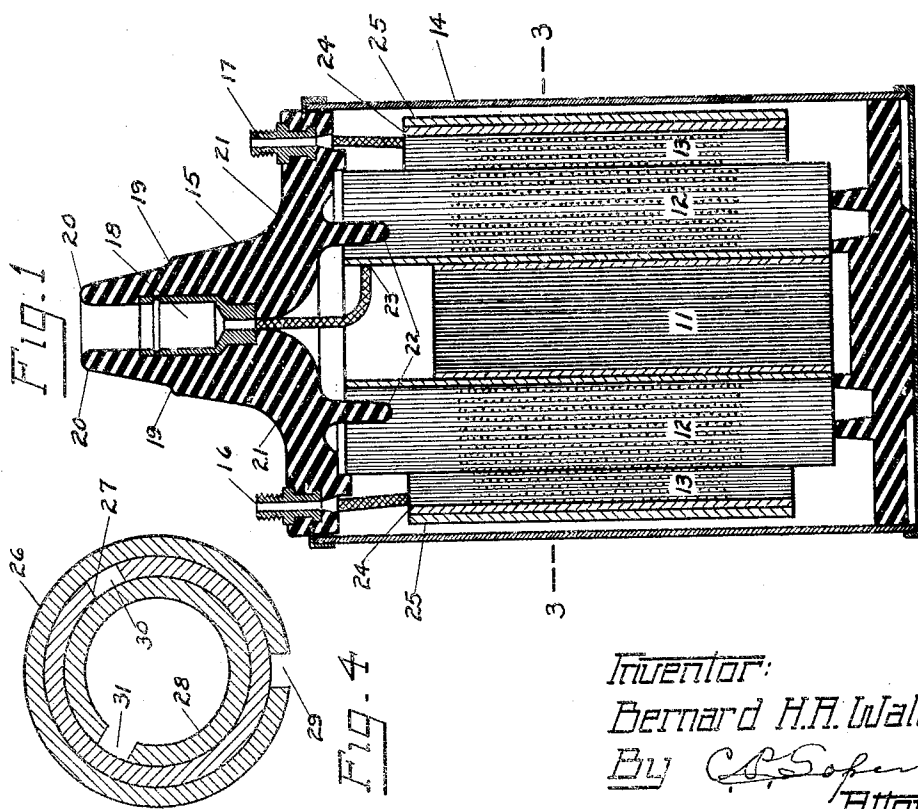
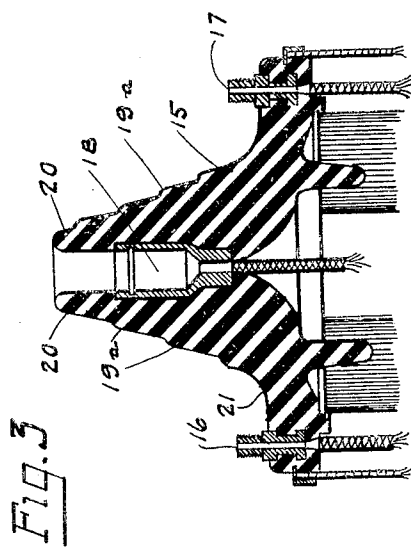
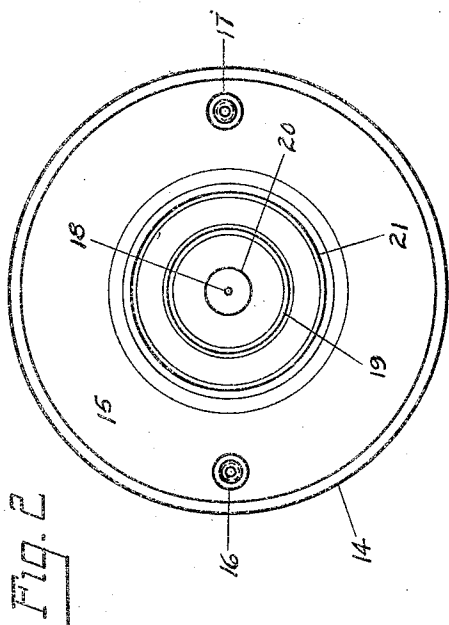
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B. H. A. WALLENTA

1,882,460

IGNITION COIL

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UNITED STATES PATENT OFFICE

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IGNITION COIL

Application filed February 4, 1931. Serial No. 513,380.

My invention relates to ignition coils, and more particularly to those coils which are used for supplying a spark for the operation of internal combustion engines.

5 A feature of my invention is the provision of a corrugation or corrugations on the cap of the coil to decrease the possibility of current leakage between the high tension terminal of the secondary winding and the low
10 tension terminals of the primary winding.

Another feature of my invention is the provision of an annular insulating flange on the under side of the cap of the coil, which acts as a baffle plate to prevent leakage of
15 current between the secondary winding and the terminals of the primary winding.

A still further feature of my invention is the provision of laminations around the primary or outer winding of the coil, each lamination being provided with a gap or space
20 between its longitudinal edges, the said gaps being apart about the periphery of the coil.

Other features of my invention will appear from time to time in the ensuing specification and the appended claims.

25 For a more complete understanding of my invention, reference may be had to the accompanying drawing, in which

Fig. 1 is a vertical cross-section of my coil,

30 Fig. 2 is a top view of the same,

Fig. 3 is a section taken along the line 3—3 of Fig. 1, and

Fig. 4 is a sectional view of a cap having a spiral shoulder, and the laminations around
35 the coil.

Referring now to the drawing, in which like reference characters designate like parts in the several views, a core 11, which may consist of a number of annealed iron wires
40 or any suitable substance, has wound on it a secondary winding 12 and a primary winding 13, all insulated from each other by paper wrapping or any convenient insulation, and enclosed in the container 14, all of which
45 is well understood in the art.

The cap 15, which is of molded bakelite, hard rubber, or any similar substance, is provided with the primary winding terminal 16 and 17 and the secondary terminal 18. The
50 cap 15 is further provided with one or more

corrugations or shoulders 19 which may be annular corrugations as shown in the drawing, or may be in the form of a single spiral shoulder extending around the cap and downwardly from the tip 20 to the lower part 21, 55 or any shape and size which may be conveniently molded. The purpose of this shoulder is to offer an obstruction to the path of currents which may tend to leak over the surface of the cap between the secondary terminal 60 18 and the primary terminals 16 and 17.

On the under or inner side of the cap 15 a downwardly extending annular flange 22 is molded. In assembling the coil, this flange is pressed into the paper wrapping of the
65 primary winding 12, and forms a baffle to provide additional insulation against leakage of current between the inner terminal 23 of the secondary winding 12 and the terminals 16 and 17 of the primary winding. 70

Around the outer or primary winding 13 are placed the laminations 24 and 25. One or more of these laminations may be used, according to the needs of the particular coil. It has been the practice in the past to make
75 these laminations of a single sheet of metal helically wrapped around the coil to the desired thickness. In the coil of my invention the laminations are each made of a separate sheet of metal, cut to such a length
80 that, when wrapped around the coil, the longitudinal edges do not quite meet. The layers are then arranged so that the gaps left between the edges of the sheets are spaced
85 apart about the periphery of the coil. This arrangement is clearly illustrated in Fig. 4 of the drawing, which shows three laminations, 26, 27 and 28, with the spaces 29, 30 and 31 at different points about the periphery, or "staggered". It has been found that
90 this arrangement of the laminations provides a more efficient operation of the coil.

After the coil is assembled, all the space between the various parts and the shell 14 is filled with wax or other insulating material (not shown) as is well understood in the art. 95

While I have illustrated and described a preferred embodiment of my invention I do not, however, wish to be limited to the exact 100

structure as shown, but aim to cover all that comes within the spirit and scope of the appended claims.

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

1. An ignition coil of the character described including a core, an inner and an outer winding, a container, and a substantially cone-shaped insulating cap, said cap having a spiral shoulder on the outer surface thereof between the base and the apex.

2. An ignition coil of the character described including a core, an inner and an outer winding a container, and a substantially cone-shaped insulating cap, said cap having an annular flange on the under surface thereof and extending downwardly into said coil, and said cap having also a spiral shoulder on the outer surface thereof between the base and the apex.

3. An ignition coil of the character described, including a core, an inner and an outer winding, a container, a cone shaped insulating cap, a spiral shoulder on said cap, and a plurality of substantially cylindrical shaped concentric laminations around said outer winding, said laminations having their longitudinal edges spaced apart to provide gaps, said gaps being spaced about said coil.

Signed by me at Chicago, in the county of Cook and State of Illinois, this 3rd day of February, 1931.

BERNARD H. A. WALLENTA.