G. FUEGEL AND H. SCHMID.

CONNECTION FOR SHAFTS OR JOURNALS.

APPLICATION FILED DEC. 27, 1918.

1,378,446. Patented May 17, 1921

Fig.1.

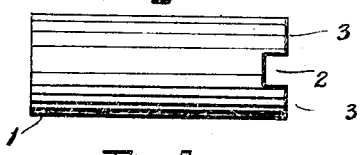


Fig.2.

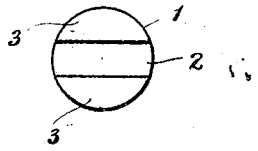


Fig.3.

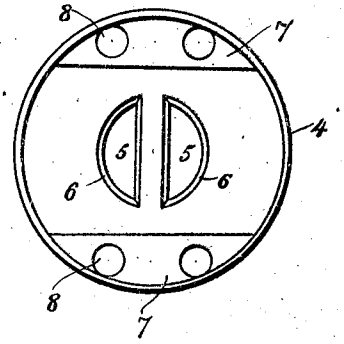


Fig.4.

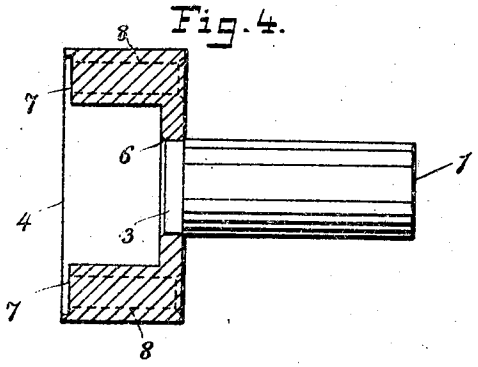
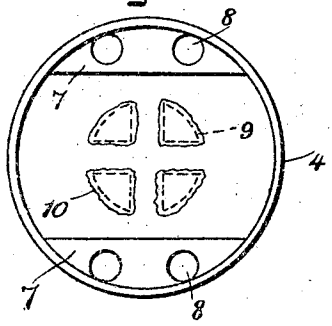


Fig.5.



INVENTORS
HERMAN SCHMID
and GOTTLOB FUEGEL.

BY William F. Nickel
THEIR ATTORNEY

UNITED STATES PATENT OFFICE.

GOTTLOB FUEGEL AND HERMAN SCHMID, OF BROOKLYN, NEW YORK, ASSIGNORS, BY MESNE ASSIGNMENTS, TO APOLLO MAGNETO CORPORATION, OF BROOKLYN, NEW YORK, A CORPORATION OF DELAWARE.

CONNECTION FOR SHAFTS OR JOURNALS.

1,378,446. Specification of Letters Patent. **Patented May 17, 1921.**

Application filed December 27, 1918. Serial No. 268,552.

To all whom it may concern:

Be it known that we, GOTTLOB FUEGEL and HERMAN SCHMID, who were formerly subjects of the German Emperor, but who have severally renounced all allegiance to said potentate and declared our intentions of becoming citizens of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Connections for Shafts or Journals, of which the following is a specification.

Our invention relates to an improved connection for shafts or journals; particularly shafts or journals used for the armatures of magnetos in electrical ignition systems of internal combustion engines.

An object of our invention is to provide a connection for the shaft or journal of the armature of an ignition magneto of such a nature that no additional members, fittings or the like will be required to make the shaft or journal rigid with the part of the magneto which is to be coupled thereto; and to devise a method whereby the efficient union of the journal or shaft with the part of the armature in question may be completely and quickly effected.

Other objects of our invention will appear from the following description, taken in connection with the accompanying drawing; and the novel features of our invention will be precisely defined in the appended claims. This disclosure, however, is explanatory only; and we reserve the right to make changes in the shape, size and arrangement of the parts of the embodiments of our invention actually shown, within the scope and spirit of our invention, to the full extent indicated by the general meanings of the terms in which the claims are expressed, and by variations in the wording of the same.

On the drawings:

Figure 1 is a side view of a piece or section for making a journal or shaft, showing how the same is shaped for the purposes of our invention;

Fig. 2 is an end view of said section;

Fig. 3 is an end view of part of the structure of the armature of a magneto to which the shaft or journal is to be united;

Fig. 4 is a sectional view showing said shaft and said part as they will appear when made fast to each other, and the connection is finished; and

Fig. 5 is a front view of the same part of the armature, showing a modified connection.

The same reference characters identify the same parts throughout.

In the practice of our invention we take a cylindrical piece or section of metal of the proper size and provide the same with projections at one end thereof. Such a piece of metal is indicated at 1 in the drawings; and is shown as having a recess 2 in one extremity provided by cutting a groove straight across the same. In this way we provide the section with two terminal projections 3.

In order to secure this piece of metal 1 to the body of the armature of a magneto, we prefer to unite the same with the condenser casing which is usually joined to the pole pieces of the armature at one end of the latter. Such a casing is shown at 4 in Figs. 3 and 4. It is cylindrical and cup-shaped, and in the bottom thereof it has a pair of apertures 5 of the same shape as the projections 3. Each of these apertures or openings will be enlarged somewhat around the inner face of the bottom of the casing, by counter-boring or otherwise, as indicated in Fig. 4 by the numeral 6. To join the section 1 to the casing 4 we insert the terminal projections 3 into the openings 5 from the outside or outer face of the bottom of the casing 4 and then expand the projections 3 by riveting, or by pressure otherwise applied, so as to make the ends of these projections engage tightly with the counter-bored rims of the openings 5. In this way the section 1 and the casing 4 will be made permanently rigid with each other; and when the casing 4 is affixed to the pole pieces of the armature, the body of the armature will be provided with a journal or shaft at the end to which the casing 4 is applied, to provide for the rotation of the armature in the adjacent bearing for the same.

We do not believe that such an armature, or any other part of the magneto, except the casing 4, need be shown herein, for the

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reason that the structure of the armature of an ignition magneto is well known; and generally consists of two poles, united by a core on which the windings are placed. These poles are joined at one end by a plate having affixed thereto a journal similar to that to be provided by the piece 1, and at the opposite ends by the casing 4. Hence the armature can be rotatably supported at both ends between the magnets which provide the magnetic field. The poles are segment-shaped in cross section. For this purpose the rim of the casing 4 is provided with thickened portions on opposite sides, as indicated at 7 in Fig. 3; these thickened portions also being segment-shaped to correspond in outline with the ends of the armature poles, and thus enable the armature and the casing to be conveniently fitted together. The thickened portion 7 may have openings 8 for screws or bolts to hold the armature and the casing fast to each other.

In the above manner we provide a very efficient connection for a shaft or journal at one end of the armature of the magneto without having to use any extra members to secure the shaft or journal in place, and the method is very simple and can be easily followed with excellent results.

Instead of only two projections on the end of the section 1 we may provide more than two as shown in Fig. 5. In this view the section 1 is shown as joined to the casing by four projections; and the casing is shown as having four openings 9 in its bottom. The projections in the openings as they appear after being expanded to engage the counter-bored ends of these openings are indicated at 10. Of course the inside of the bottom of the casing is ground off slightly in order to make the same smooth after the operation of joining the piece 1 to the casing is finished.

After connecting the section 1 to the casing 4, we may of course turn down the section in a lathe to reduce its diameter, cut threads thereon, or work it in any other manner as it may require.

The piece 1, while preferably cylindrical, can in fact have almost any cross-sectional form and still be adapted to the purposes of our invention as above set forth.

Having described our invention what we believe to be new and desire to secure by Letters Patent of the United States is:

1. The combination of a cup-shaped casing having openings in its bottom, said openings being counter-bored adjacent the inner face of said bottom, and a shaft provided with projections on one end, said projections entering said openings from the outer face of said bottom, and being expanded to engage the counter-bored portions of said openings to secure the casing and shaft together.

2. The combination of a cup-shaped casing having thickened portions at its opposite sides, and having one or more openings in its bottom, said openings being counter-bored adjacent the inner face of said bottom, and a shaft provided with projections on the end thereof, said projections entering said openings from the outer face of said bottom, and being expanded to engage the counter-bored portions of same to secure the casing and the shaft together.

In testimony whereof, we have signed our names to this specification this 1st day of November 1918.

GOTTLOB FUEGEL.
HERMAN SCHMID.