

C. F. NORTON.
CONTAINER FOR SPARK PLUGS.
APPLICATION FILED AUG. 1, 1911.

1,049,903.

Patented Jan. 7, 1913.

Fig. 1.

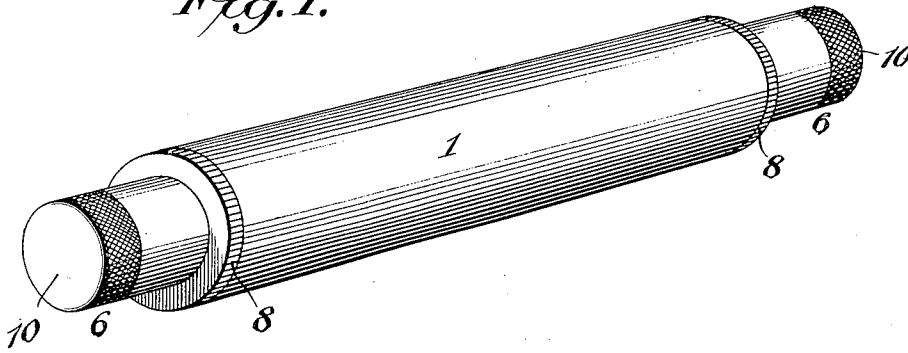


Fig. 2.

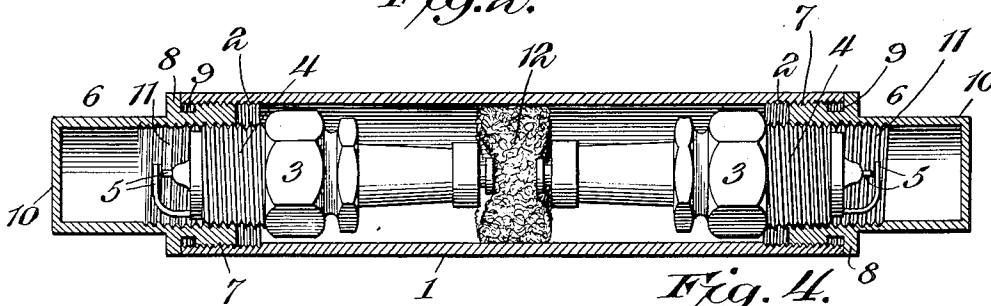


Fig. 3.

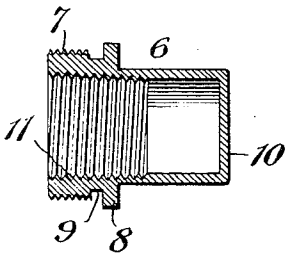


Fig. 4.

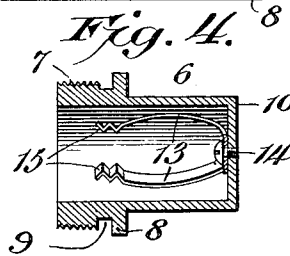
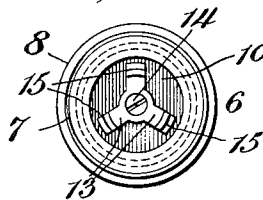


Fig. 5.



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UNITED STATES PATENT OFFICE.

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CONTAINER FOR SPARK-PLUGS.

1,049,903.

Specification of Letters Patent.

Patented Jan. 7, 1913.

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To all whom it may concern:

Be it known that I, CHRISTOPHER F. NORTON, a citizen of the United States, residing at Merritt, in the county of Brevard and State of Florida, have invented a new and useful Container for Spark-Plugs, of which the following is a specification.

This invention has reference to improvements in containers for spark plugs and is designed more particularly to provide a receptacle or container for spare spark plugs, whereby the latter are protected against the action of the elements or dirt or other harmful materials, and, moreover, the liability of loss of the spark plugs is reduced to a negligible minimum.

It is customary to carry extra spark plugs upon automobiles and motor boats, and particularly in the case of motor boats the spark plugs are liable to the effects of salt water or moist air and other conditions harmful to the spark plugs, and while in the case of automobiles there is no likelihood of water affecting the spark plugs, dust and dirt may harm the spark plugs and they may be subjected to other harmful effects.

In accordance with the present invention there is provided a casing with means for carrying one or more spark plugs, usually two, the screw base of the spark plug being utilized for holding the plug in the casing by means of a cap member into which the plug is screwed, this cap member also serving as a protection for the sparking terminals, while the entire spark plug is readily introduced into or removed from the body of the container by means of the screw cap which may, furthermore, be so related to the body of the container as to provide a dust and moisture tight joint, and, furthermore, especially where moist air is encountered, the container may have lodged therein some moisture absorbent material, thus keeping the interior of the casing dry.

The invention will be best understood from a consideration of the following detailed description, taken in connection with the accompanying drawings forming a part of this specification, with the understanding, however, that while some embodiments of the invention are shown in the accompanying drawings, such embodiments by no means exhaust the invention, which latter may be variously changed and modified over and above the exact showing of the draw-

ing, wherefore the invention is not limited to any close conformity to the showing of the drawing.

In the drawings:—Figure 1 is a perspective view of the container. Fig. 2 is a longitudinal diametric section of the structure of Fig. 1 showing two spark plugs within the container. Fig. 3 is a longitudinal diametric section of one of the caps removed. Fig. 4 is a view similar to Fig. 3 but showing a modified form of cap. Fig. 5 is an end view of the cap shown in Fig. 4 looking into the open end thereof.

Referring to the drawings, there is shown a tubular member 1 of cylindrical form, although such form is not mandatory, and this member may be of even diameter throughout and is internally threaded at the ends, as indicated at 2. In the particular construction of the drawings the member 1 is sufficiently long to accommodate two spark plugs 3, but this, also, is not mandatory. The spark plugs may be of any type, and in the drawings they are more or less conveniently shown and may be taken as typical of any suitable type of spark plug. The particular spark plugs illustrated in the drawings have threaded basic ends 4 beyond which are the sparking terminals 5.

For each end of the casing or body portion 1 there is a cap member 6 in the general form of a hollow plug having external screw threads 7 adapted to the screw threads 2, and beyond the threaded portion 7, which is located at one end of the cap, there is an annular shoulder 8 designed to engage the corresponding extremity of the body portion 1, so that when the cap is screwed into the body portion 1 the shoulder or flange 8 will come in contact with the corresponding end of the body portion and thereby form a tight joint. The flange 8 is separated from the threaded portion 7 by an annular groove 9 in which may be lodged suitable packing if such be desired, or a little lubricating or other heavy oil placed on the screw threads 7 will usually be found sufficiently effective to exclude both moisture and dust.

The cap member 6 has the end remote from the threaded end 7 formed into a closed hood 10 and the interior of the cap member at the threaded end 7 is provided with internal screw threads 11 entering the cap member for a sufficient distance and of a

gage to receive the threaded end 4 of a spark plug.

When it is desired to store the spare spark plugs, they are screwed in the respective cap members 6 by introducing the threaded end 4 of a spark plug into the threaded end 11 of the cap member and the threads are so arranged that the plug may be screwed quite tightly into the cap member, thereby holding it against accidental loosening, it being customary to taper the threaded end 4 of the spark plug slightly, so that it may bind in the threaded bore into which it is introduced in an explosion engine, and the threaded portion 11 of the cap 6 is likewise of generally taper form.

When two spark plugs are applied to two caps and these in turn are applied to opposite ends of the casing 1, the ends of the spark plugs remote from the threaded portions 4 are introduced into the casing from opposite ends thereof until the outer ends of the spark plugs are brought into quite close relation but need not be brought into actual contact.

When the spark plugs are introduced into the casing where moisture is prevalent, as on a motor boat, there is some danger of the slight amount of moisture which might be imprisoned in the casing 1 affecting the spark plugs. To avoid this, some moisture absorbent material may be lodged within the casing 1 and in the particular showing of the drawings a small quantity 12 of moisture absorbent material of any appropriate character is shown as confined between the adjacent ends of the spark plugs. The caps serve as means for protecting the sparking terminals, since these latter are introduced into the caps and are housed in the closed ends of the caps.

For some forms of spark plugs the screw threads 11 are omitted and there is secured to the inner end wall of the closed portion 10 of the cap a spring member 13 shown as provided with three legs separated by about one hundred and twenty degrees and held to the cap member by a screw 14, while the free ends of the legs directed toward the open end of the cap member are transversely corrugated, as shown at 15, to engage and hold the corresponding end of a spark plug, the legs of the holder 13 expanding for the purpose, since they may be made quite elastic.

Spark plugs are made of different sizes and threads. To accommodate such different sizes of spark plugs necessitates the employment of caps 6 having the screw threads 11 conforming to the different standard pitches and sizes, but the threaded portion 7 may be the same for all caps, so that all caps will fit the casing 1 at either end thereof and the threads 7 are made quite fine, so as to more effectually resist the en-

trance of moist air into the interior of the casing. Furthermore, the delicate sparking ends of the spark plugs are further protected from moisture by the threaded connection between their threaded bases 4 and the threaded portions 11 of the caps. The body portions may be all made of practically one size and be large enough to take in any standard spark plugs.

While a small mass 12 of moisture absorbent material is shown in Fig. 2, it will be understood that this may be replaced by any other form of moisture absorbent material either close to the walls of the casing 1 or simply placed loosely in the receptacle.

The corrugated or toothed holder 13 of Figs. 4 and 5 is a universal holder adapted to receive and retain spark plugs of different sizes, so that but one size of cap is needed for different types of spark plugs. However, the structure of Figs. 4 and 5 does not avoid the moisture within the casing 1 from reaching the terminal portions of the spark plugs carried by the cap members.

There have been shown and described two practical forms of the invention, wherefore it is evident that the invention may assume other forms without material departure from the scope of the invention, which is designed to provide a means for the housing of spark plugs whereby they may be maintained indefinitely against injury of any kind under all environments, the present invention providing a housing for a spark plug into which it may be inserted and securely held without the necessity of any additional parts over a body member and a cap member, one of said members being provided with screw threads or other holding means adapted to the base end of the spark plug in such manner as to receive and protect the sparking terminals, while the cap member is applied to the body member by means of finer screw threads than are employed with spark plugs having screw thread bases, so that the liability of moisture finding its way into the interior of the housing is practically eliminated.

What is claimed is:—

1. In a device for storing spark plugs, a casing and a cap member therefor, said cap member being provided at the open end with internal tapered screw threads of a gage to receive the tapered threaded end of a spark plug, and said cap member being of a length to receive the spark terminal end of a spark plug with the spark terminals in spaced relation to the closed end of the cap, and the casing and cap member being provided with coacting screw threads and abutting portions to provide for a moisture tight junction between the cap member and casing.

2. A device for storing spark plugs comprising a body member and terminal cap members, one for each end of the body mem-

ber, the body and cap members being of a
length to receive two spark plugs end to end
and provided with tapered screw threads
for the threaded ends of the spark plugs and
5 adapted to hold the sparking terminals of
the spark plugs in spaced relation to the
walls of the container, the cap members and
body member being provided with coacting
screw threads and abutting portions for pro-
10 viding for a moisture tight junction be-

tween the cap members and the body member.

In testimony, that I claim the foregoing
as my own, I have hereto affixed my signature
in the presence of two witnesses.

CHRISTOPHER FRAZINE NORTON.

Witnesses:

MORRIS W. WEINBERG,
R. B. HOLMES.