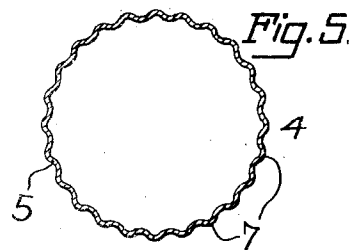
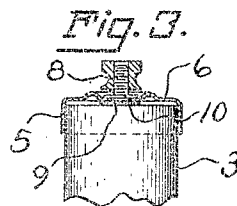
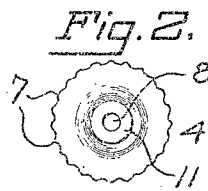
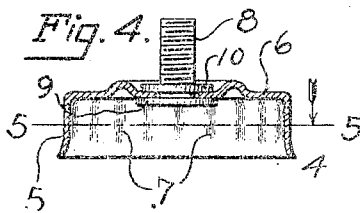
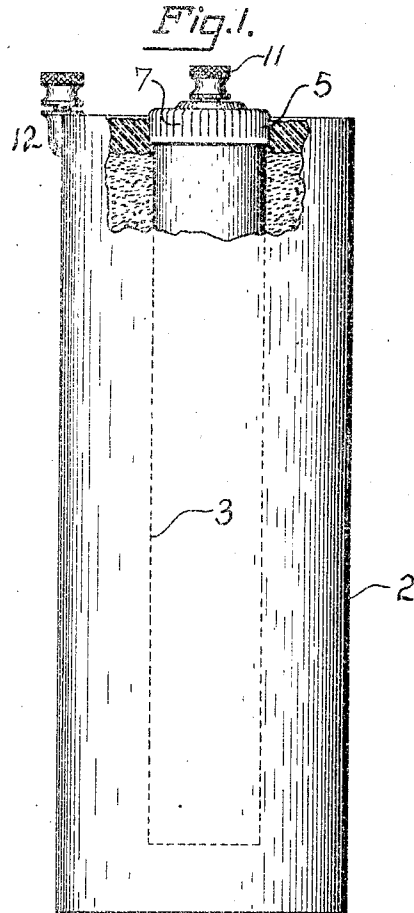


J. G. PETERSON.
 CAPPED CARBON PENCIL.
 APPLICATION FILED OCT. 25, 1916.

1,234,799.

Patented July 31, 1917.



J. G. Peterson Inventor
By H. S. Luthin Attorney

UNITED STATES PATENT OFFICE.

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CAPPED CARBON PENCIL.

1,234,799.

Specification of Letters Patent.

Patented July 31, 1917.

Application filed October 25, 1916. Serial No. 127,530.

To all whom it may concern:

Be it known that I, JOHANN G. PETERSON, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Capped Carbon Pencils, of which the following is a specification.

This invention relates to capped carbon pencils, or as they are sometimes known "pins," such as are used for instance in dry batteries. I have two aims in view, one the provision of means whereby the cap will hug or embrace the pencil or pin in a tight and substantial manner. Another aim is the provision of means for securing a better electrical connection between the cap and the pencil than is at the present time possible.

In the drawings accompanying and forming part of the present specification I show one convenient form of embodiment of the invention which will be set forth fully in the following description. I do not restrict myself to this disclosure; I may depart therefrom in several respects within the scope of the invention defined by the claim following said description. By the structure shown I can secure both the objects in view, although this may not be necessary in all cases. In this particular disclosure the cap tightly fits the pencil or pin and the engagement between the parts is through a multiplicity of points rather than a surface engagement. This I obtain for instance by corrugating the cap. In view of this corrugation I can also insure the tight fit to which I have alluded.

Referring to the drawings:

Figure 1 is an elevation of a battery equipped with a capped carbon pencil involving the invention, the upper portion of the battery being broken away and in section.

Fig. 2 is a top plan view of the cap.

Fig. 3 is a view in elevation of the upper portion of the pencil, equipped with a cap shown in section.

Fig. 4 is a vertical sectional view of the cap, and

Fig. 5 is a horizontal section thereof, the section being on the line 5—5 of Fig. 4, looking in the direction of the arrow.

Like characters refer to like parts throughout the several views, the scale of

Figs. 4 and 5 being larger than that of Figs. 1, 2 and 3.

In Fig. 1 I have shown an ordinary dry battery 2 furnished with a carbon pencil 3 which except as to its capped portion may be and preferably is of the ordinary construction. Surrounding the upper end of the pencil 3 is a cap such as that denoted in a general way by 4. This cap may be made from sheet metal such as brass. The cap comprises a practically cylindrical body 5 and a top 6. This body 5 is shown corrugated as at 7, commencing with the upper end and extending nearly to but short of the lower edge. By making the body corrugated, it is possessed of a certain amount of expansibility and necessarily contractibility, in view of which it is resilient and can closely embrace the upper end of the pencil 3 when applied thereto. Besides this there is another advantage in this particular construction, as I will now explain. It is almost impossible to make these pencils of uniform size, there being practically always variations caused in the baking. Owing to the construction set forth of the cap, the latter can be readily fitted to the pencil, and if the cap fit the pencil too freely the pencil can be contracted onto the cap to prevent its being accidentally displaced. On the other hand the pencil if a little large can be driven into the cap and the latter will expand so that it can be properly connected to the pencil. It will be noticed that the lower portion of the body 5 of the cap is slightly flared outward, the flare being below the corrugated portion 7. This permits proper entrance of the upper tip portion of the pencil into the cap. Obviously the cap or at least the body 5 thereof is sufficiently resilient to conform properly to the size of pencil or pin to which it is connected. Owing to the fact that the cap is corrugated, I provide in this way for a multi-point connection between the cap and the pencil, this multi-point engagement providing for a much better electrical connection than when the contact between the needle and the cap is a surface one as is ordinarily the case. The corrugations dig into the carbon, which aids in insuring this highly effective electrical connection, and in a measure interlocks the cap to the pencil. This multi-point electrical connection can be obtained in other ways, although the corru-

gated cap is a highly advantageous manner of attaining it.

The top 6 has a central perforation to receive the post 8 equipped with collars as 9 and 10 fitting against the upper and lower surfaces of the top to hold the post in place, this post receiving the binding nut 11 as is familiar in the art. Complementary to the needle or pin 3 which constitutes one terminal of the battery 2 is a second terminal denoted in a general way by 12.

What I claim is:

A cap for carbon pencils having approxi-

mately a cylindrical body and a top, the body being corrugated throughout its entire circumferential extent, the corrugations extending short of the lower edge of the body and the body below the corrugations being flared outwardly.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHANN G. PETERSON.

Witnesses:

O. N. WRIGHT, Jr.,

W. J. COLLINSON, Jr.