G. F. BINT.

PLUG FOR SHELL OR PROJECTILE CASES.

APPLICATION FILED JULY 23, 1917.

1,253,773. Patented Jan. 15, 1918.

FIG. 1.

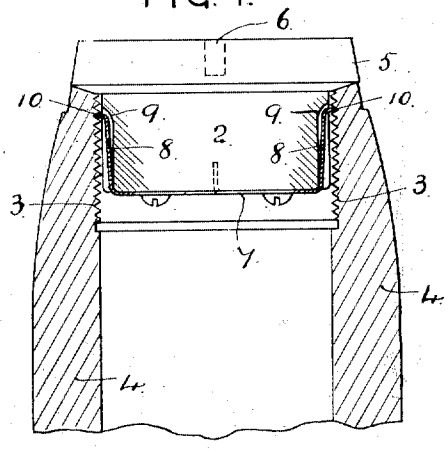


FIG. 2.

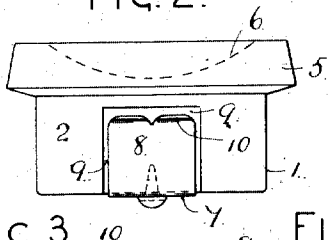


FIG. 3.

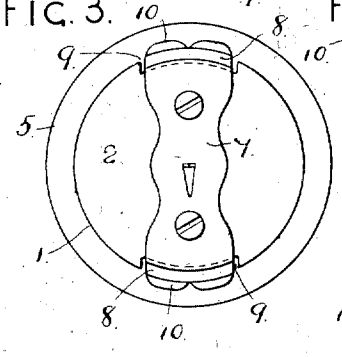


FIG. 4.

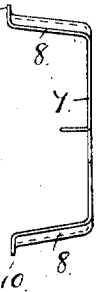


FIG. 5.

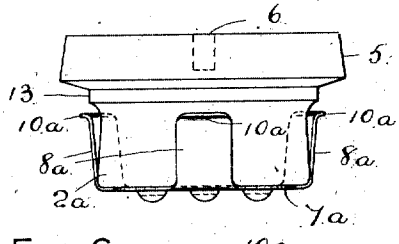


FIG. 7.

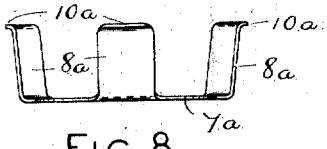


FIG. 6.

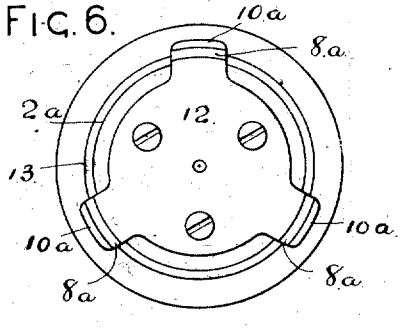
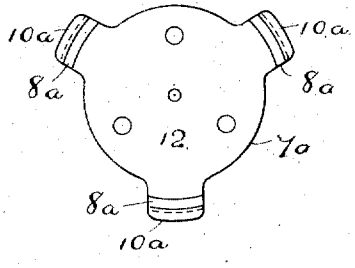


FIG. 8



WITNESSES

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PLUG FOR SHELL OR PROJECTILE CASES.

1,253,773. Specification of Letters Patent. Patented Jan. 15, 1918.

Application filed July 23, 1917. Serial No. 182,238.

To all whom it may concern:

Be it known that I, GEORGE FREDERICK BINT, a subject of the King of Great Britain and Ireland, residing at 62 Anderton Park road, Moseley, Birmingham, England, have invented certain new and useful Improvements in or Relating to Plugs for Shell or Projectile Cases, (for which I have applied for a patent in Great Britain, No. 106,916, bearing date 15th September, 1916,) of which the following is a specification.

This invention relates to solid plugs such as are used for placing in the screwed open end of a shell or projectile case, which is adapted to receive the fuse cap, such plugs being intended to protect during transit the screw threaded part and outer face or end of the shell from damage, as such if it occurs is liable to prevent or impede the proper fitting of the fuse cap.

The aforesaid plugs are usually made in soft or unseasoned wood, which often shrinks or otherwise becomes distorted, and consequently the plug is liable to fall out of its position in the shell, or otherwise becomes useless, as for instance—when distorted it may be incapable of insertion into the shell. The object of the present invention is to provide a simple and cheap construction of plug which is adapted to be positively held in position, and in which the shrinkage or distortion of the wood does not render same useless; and the invention consists in providing such plugs with a simple form of retaining device or catch, adapted to springwise engage with the threads in the mouth or opening of the shell, whereby the plug is securely held in position.

In order that the said invention may be clearly understood and readily carried into effect, I will describe same more fully with reference to the accompanying drawings, in which:

Figure 1, shows in part sectional elevation a plug constructed in accordance with one form of this invention, the said plug being shown fitted in position in the screwed end of a shell case.

Figs. 2 and 3, show respectively a side elevation and plan view of the aforesaid plug.

Fig. 4 shows a side view of the retaining device, detached from the plug.

Figs. 5 and 6, show respectively a side elevation and inverted plan view of a modified form of plug and retaining device.

Figs. 7 and 8, show respectively a side elevation and plan view of the retaining device shown in Figs. 5 and 6, detached from the plug.

Like numerals of reference indicate the same feature or part throughout the several figures of the drawings.

According to the form of this invention, as shown in Figs. 1 to 4, the stem or body part 1 of the plug 2, which is usually screw threaded to engage with the screw threads in the mouth of the shell, is here made plain and of a diameter about equal to or slightly less than that of the top of the threads 3 in the shell 4, so that it may freely pass into the mouth thereof; while its outer end is provided with the usual flange part 5, and its outer face has formed therein a cross slot 6, or other means to facilitate the removal of the plug. To the underside of the plug is secured, by means of screws, pins, or otherwise, a retaining device 7, comprising a stamped or pressed strip of thin sheet metal, the outer ends 8 of which are upturned and lie approximately longitudinally on opposite sides of the stem part of the plug 2, in grooves 9 formed therein to receive same and permit of a slight inward movement. The free edges or terminals of said ends 8 are turned outward to form projections 10, which are adapted to springwise engage with the thread grooves 3 in the mouth of the shell 4, as shown in Fig. 1, when the plug has been simply pressed into the mouth thereof.

In a modified form, as shown in Figs. 5 to 8, the retaining device 7^a, which is preferably formed from thin sheet spring steel, comprises a circular plate or disk 12 having three radial arms 8^a which are bent upward at approximately right angles thereto, the said arms being turned outward at their upper ends to form the projections 10^a, which are adapted to engage with the thread groove 3 in the shell 4, in the manner as herein before stated.

The lower end of the stem part of the plug 2^a, as seen in Figs. 5 and 6, is preferably of a diameter slightly less than that of the top of the threads 3, in the shell 4, and the stem is tapered inward toward its upper end, thus providing for the inward

movement of the arms 8^a, when the plug is being inserted into the mouth of the shell. The upper end of the stem of the said plug 2^a is of a diameter about equal to that of the top of the thread 3, in the mouth of the shell 4, and thus forms a collar or shoulder 13, which supports the plug in concentric position, and also effectively closes or fills the mouth of the shell.

It will be readily understood that the improved plug constructed in accordance with my invention, can be placed in the mouth of the shell by simply pressing same therein, the projections on the spring arms of the retaining device riding over the tops of the threads until the plug is right home, when they springwise engage with one of the thread grooves and thus securely hold the plug in position. When it is desired to remove the plug, such can be effected by turning or unscrewing same.

Having fully described my invention, what I desire to claim and secure by Letters Patent is:

1. A plug for shell or projectile cases formed with open, threaded mouths, said plug having a stem part of a diameter which permits of its free entrance into said mouth, the said stem being provided with a retaining device comprising springy arms arranged so as to permit of the plug being pressed directly into home position in said mouth, and adapted to ride over said threads during the insertion of the plug and to engage at their ends in one of the thread grooves when the plug reaches its said position, whereby the plug is securely held or retained in the shell, substantially as described.

2. A plug for a shell or projectile case formed with an open, threaded mouth, said plug having a stem part of a diameter which permits of its free entrance into said mouth; in combination with a retaining device comprising a body part fixed to the bottom face of the stem and a plurality of spring arms projecting upwardly across the side wall of said stem and having their free ends turned outward, said arms being adapted to move inward toward said side wall during the insertion of the plug and to ride at their said ends across the points of the threads, and to spring outward at the conclusion of the insertion and to engage at their said ends in the adjacent thread groove, whereby the plug is securely retained in the shell.

3. A plug for a shell or projectile case formed with an open, threaded mouth, said plug having a stem part which is of a diameter such as to enable it to freely enter said mouth and which is tapered inward from its lower end to a point adjacent its upper end to provide an annular clearance space between the wall of the stem and the points of the threads in said mouth; in combination with a retaining device attached to said stem and comprising a plurality of spring arms extending vertically across the tapered surface of the said stem, so as to lie in said clearance space when the plug is positioned, said arms being arranged to move inwardly in said space during the insertion of the plug and to ride at their ends across the points of the threads, and to spring outward at the conclusion of the insertion and to engage at their ends in the adjacent thread groove, whereby the plug is securely retained in the shell.

4. A plug for a shell or projectile case formed with an open, threaded mouth, said plug having a stem part which is of a diameter such as to enable it to freely enter said mouth and which is tapered inward from its lower end to a point adjacent its upper end to provide an annular clearance space between the wall of the stem and the points of the threads in said mouth, the upper end of said stem being provided with a collar part which is adapted to fit closely in said mouth; in combination with a retaining device attached to said stem and comprising a plurality of spring arms extending vertically across the tapered surface of the same stem, so as to lie in said clearance space when the plug is positioned, said arms being arranged to move inward in said space during the insertion of the plug and to ride at their ends across the points of the threads, and to spring outward at the conclusion of the insertion and to engage at their ends in the adjacent thread groove, whereby the plug is securely retained in the shell.

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