

Nov. 7, 1939.

P. McG. FORSYTH

2,178,723

DETONATOR

Filed March 29, 1937

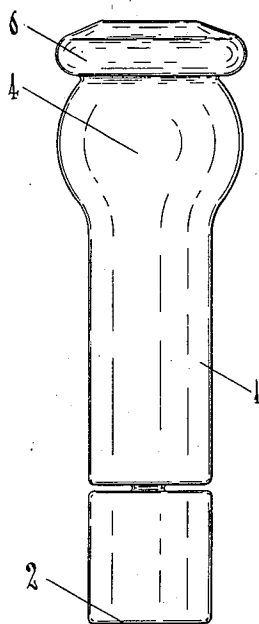


FIG. 1-

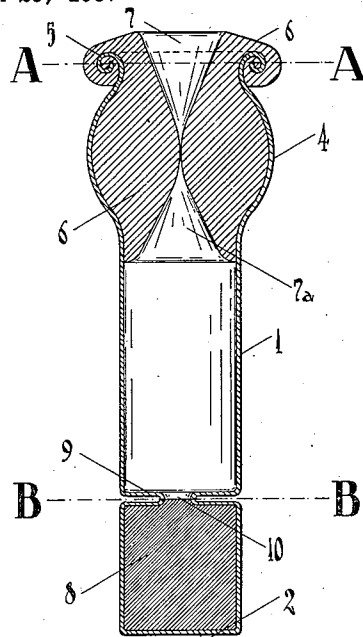


FIG. 2-

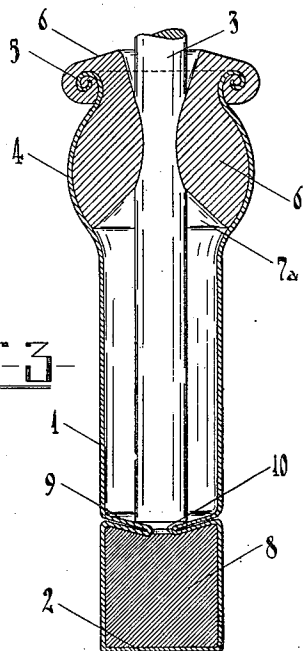


FIG. 3-

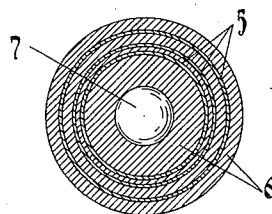


FIG. 5-

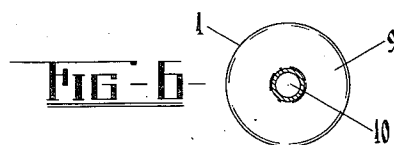


FIG. 6-

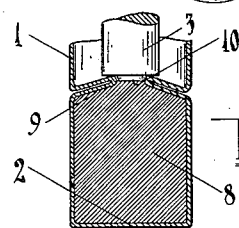


FIG. 4-

P. M. Forsyth
inventor

By *Glascow, Downing & Seebold*
Attys.

UNITED STATES PATENT OFFICE

2,178,723

DETONATOR

Peter McGill Forsyth, Raetihi, New Zealand

Application March 29, 1937, Serial No. 133,673
In Great Britain November 3, 1936

1 Claim. (Cl. 102—9)

This invention relates to detonators and the like of the kind wherein an explosive material is held in a container and an igniting means is passed into the latter and adjacent the said material, the ignition and explosion of the latter thereafter bringing about the firing of a main charge of explosive material.

The objects of this invention are to provide improvements in detonators and the like made hitherto so that the latter will have increased efficiency in and surety of operation by excluding moisture and dampness from the interior of the detonator and the like so that the explosive material therein is not harmed or destroyed, and by preventing the easy and undesirable turning of the igniting means while adjacent the explosive material therein so that the latter avoids premature ignition. In this latter respect the objects include preventing the igniting means from becoming more than merely adjacent the explosive material so as to minimize the danger of early ignition particularly during the insertion and adjustment of the igniting means in the detonator and the like.

According to this invention the improved detonator comprises a container having an outer shell preferably of cylindrical formation with an open end, the lip of the latter being rolled over to secure a resilient body in the open end, and a holed dividing wall in the container so that said resilient body normally closes said end but is capable of distension to allow an igniting means to be passed into the container as far as the said dividing wall.

The invention will now be further described with reference to the accompanying drawing in which:—

Figure 1 is an elevational view of the outside of the container made in accordance with this invention,

Figure 2 is a sectional elevation of Figure 1 showing one form of the resilient body, and one form of the dividing wall,

Figure 3 is a sectional elevation of Figure 1 showing another form of the resilient body and another form of the dividing wall together with a fuse in position,

Figure 4 is a sectional elevation of Figure 1 showing a further alternative form of the dividing wall together with a fuse in position.

Figure 5 is a cross section on line A—A of Figure 2, while,

Figure 6 is a cross section on line B—B of Figure 2.

Referring to the drawing, a container 1 follows generally a cylindrical outline and has a closed

bottom 2 to hold explosive material 8, and further the container may have a bulbous portion 4 in the upper part of the container 1, and may have a rolled over and helically shaped lip 5 for securing a resilient body 6 as hereinafter explained.

Situated in or near the upper part of the container 1 is a resilient body 6 which normally closes the entrance to the container 1 but gives access to the latter upon distension of the resilient body 6 such as by the insertion of a fuse 3, see Figure 3.

Such resilient body 6 preferably overflows or extends over the lip 5 and the latter is then pressed in tightly and closely against the resilient body 6 to make a damp-proof seal between the container and the resilient body 6. The resilient body 6 may have a bell shaped mouth 7 and a bell shaped inner entrance 7a, either extending beyond the bulbous portion 4 or terminating within the latter as illustrated by Figures 2 and 3 respectively of the accompanying drawing, but so that the insertion, and if necessary, the extraction of a fuse or electric connection for igniting explosive material 8, can be accomplished readily and easily.

The container 1 is made with a dividing wall 9 which may be part of the wall of the container 1 indented and pressed in until an aperture 10 remains for communication to the explosive material 8; but so that the fuse 3 or an electrical connection passed through the resilient body 6 bears upon the dividing wall 9 and is adjacent the explosive material 8 thereby to diminish the possibility of premature explosion by chafing the said material 8; but to allow a flame or spark from the fuse or the electrical connection to pass there-through. As illustrated in Figure 3 the dividing wall 9 may be sloped inwards and downwards towards the aperture 10 in the formation of a funnel; while as illustrated in Figure 4, the dividing wall 9 may be sloped inwards and upwards towards the aperture 10 in the form of a truncated pyramid, and in each form of dividing wall 9 the explosive material 8 is behind but up to the level of the aperture 10. The indented or pressed in wall 9 may be situated at any desired position between the closed bottom 2 of the container 1 and the inner end of the resilient body to allow for a required amount of explosive material. Further, the indented or pressed in wall 9 which is double skinned as the result of indenting or pressing in the wall of the container 1, may have the double skins joined together such as by soldering or welding to add strength to the said dividing wall 9 and prevent movement of the latter.

A detonator constructed and arranged as herein described and illustrated in accordance with this

invention is designed to hold the resilient body 6 so that moisture and dampness is excluded from the container 1 and the fuse or electric connection is held against undesired turning after the same has been placed in the desired relationship adjacent the explosive material 8 near the aperture 10 and against the dividing wall 9.

What I do claim and desire to obtain by Letters Patent of the United States of America is:

In a detonator, a container having a bulbous portion adjacent the open end thereof, a resilient body arranged in the bulbous portion restricting the entrance to the container, the open end of said container having a rolled over and helically shaped lip, a portion of the resilient body secured in the lip of the container to provide a seal between the container and the resilient body.

PETER MCGILL FORSYTH.