T. G. FITZ G. McCOMBIE.

FUSE IN CONNECTION WITH EXPLOSIVE MINES OR PROJECTILES.

APPLICATION FILED JAN. 18, 1907.

910,943. Patented Jan. 26, 1909.

Fig. 1.

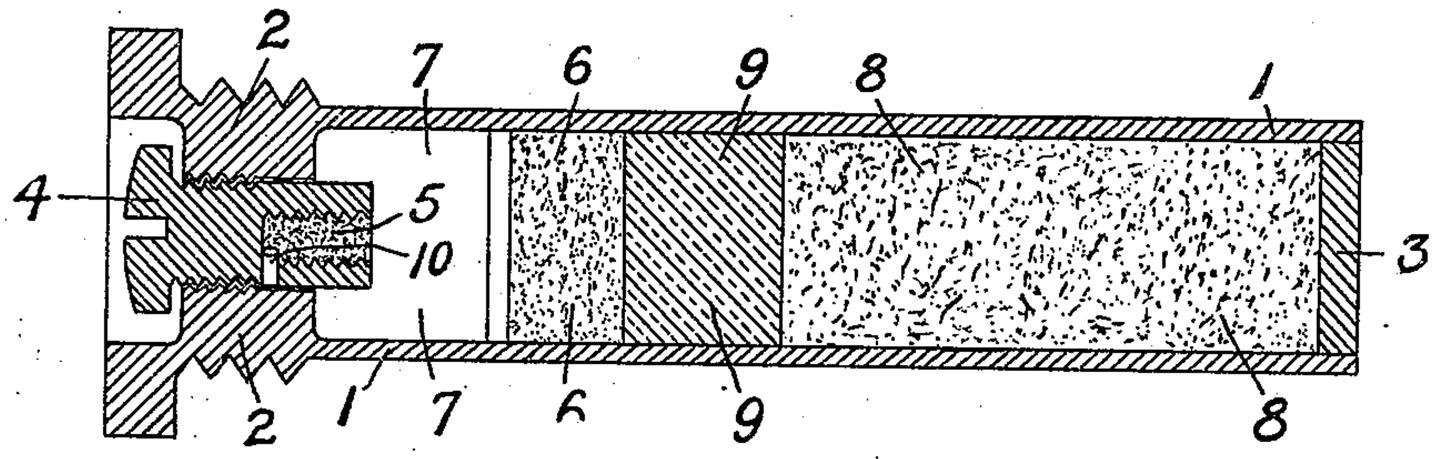
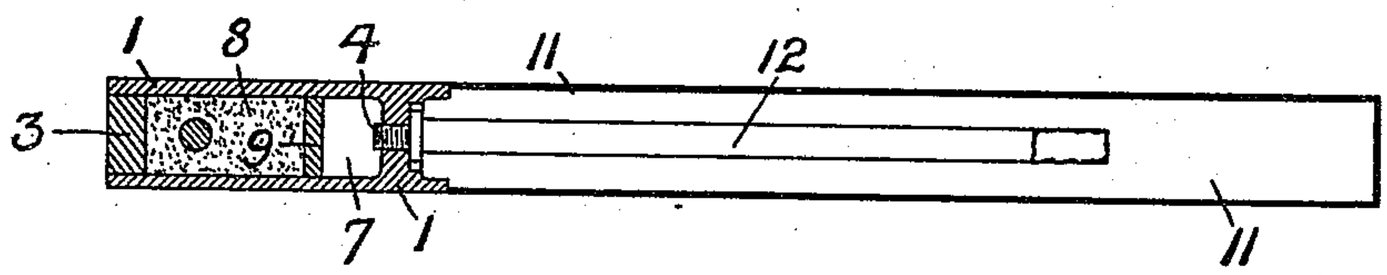


Fig. 2.



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UNITED STATES PATENT OFFICE.

THOMAS GERALD FITZ GIBBON McCOMBIE, OF MONKSTOWN, IRELAND, ASSIGNOR OF ONE-HALF TO JOHN BEDELL STANFORD MacILWAINE, OF COUNTY OF DUBLIN, IRELAND.

FUSE IN CONNECTION WITH EXPLOSIVE MINES OR PROJECTILES.

No. 910,943. Specification of Letters Patent. Patented Jan. 26, 1909.

Original application filed December 18, 1905, Serial No. 292,239. Divided and this application filed January 18, 1907. Serial No. 352,996.

To all whom it may concern:

Be it known that I, THOMAS GERALD FITZ GIBBON McCOMBIE, a subject of the King of England, residing at Monkstown, County of Dublin, Ireland, have invented new and useful Improvements in Fuses in Connection with Explosive Mines or Projectiles, of which the following is a specification.

This application is a division of an application filed by me on Dec. 18, '05, #292,239.

This invention has reference to fuses used in connection with explosive mines or projectiles, such for instance as those which are thrown from a gun, and serve as a projectile mine; that is to say, those which, upon reaching a vessel or striking the water, sink a predetermined depth, and will explode and act as a mine, or will expel an explosive, or a container containing an explosive, and which, upon such mine being struck by a ship or object coming in contact with it, will explode; while at the same time, these fuses are applicable or can be used in connection with the ordinary mines dropped into the water. The material by which these fuses are ignited, and the body of the mine ultimately exploded, is a substance such as potassium or the like, which is ignitible by contact with water.

The invention is illustrated in the annexed drawings, in which—

Figure 1 is a longitudinal section showing a fuse for use in connection with a shell or explosive projectile mine or the like, serving as a time fuse; while Fig. 2 shows, in longitudinal section, a fuse under this invention adapted to be used in connection with a floating mine adapted to be ignited upon part of it being fractured, and water admitted to it, on being struck by or striking a ship or body.

The fuse shown in Fig. 1 consists of a tube 1 having a breech 2 at one end, and a closing plug 3 at the other; and in the breech 2 there is a water admittance timing screw 4, in which there is a hollow end or chamber 5 for containing potassium or other substance which is ignitible by water; and this end extends into a chamber or portion 6 of the fuse in which the explosive is employed; a space 7 for air being employed next the plug 4 for supporting combustion of the potassium in the screw chamber 5; while at the outer end there is a space or chamber 8 for containing an explosive, with a soft packing 9 between these portions 6 and 8. The thread of the screw 4 is so made that water can pass down between it and the breech 2, and through holes 10 leading to the chamber or cavity 5 in the end of the screw containing the potassium or the like; and when water reaches these holes 10, and the ignitible material, it is ignited, and an explosive in the chamber 6 and 8, such as gunpowder, will be ignited, and the explosion of it will cause the explosion of the material in the mine or projectile which it is desired to explode. Upon the extent of the thread of the screw plug 4 which may be screwed in the breech 2, and the degree of tightness of fit, will depend the time between which the projectile or mine strikes or reaches the water, and the time the fuse is ignited, and the mine exploded. The fuse may be employed anywhere in connection with the mine, where it is desired to ignite an explosive, that is, to explode the mine proper when it has sunk to the proper depth, or after the shell has been in the water a certain time, or for other purposes.

The fuse shown in Fig. 2 will, in most cases, project from the side of the explosive body or mine, and one end of same is provided with a frangible portion; while the other end which is connected with the body of the mine, either permanently or by being hinged to same, will have within it the ignitible substance. This frangible portion is generally designated 11, and the portion containing within it the substance which is ignitible on contact with water, is designated 1. The frangible portion 11 has within it another tube 12, along which when the water gets into it by the breaking of the main outer tube 11, it passes to the plug 4, where the potassium or the like will be ignited by the water, and burn in the presence of the air which is also in the chamber 7; beyond which the explosive chamber 8 is provided. And when the explosive in this chamber is ignited, it will cause directly or indirectly the firing of the mine.

What is claimed is:—

1. A fuse for igniting mines or projectiles, comprising a case, a chamber within the case containing air, a container for containing a substance ignitible by contact with water passing through said case, and having a

chamber containing said substance in direct communication with said air chamber, and adjustable in the chamber and means for permitting water to enter said container.

2. A fuse for igniting mines or projectiles, comprising a case, a chamber within the case containing air, a container for containing a substance ignitible by contact with water passing through said case, and having a chamber containing said substance in direct communication with said air chamber and adjustable in the chamber, a fuse chamber having a screw threaded wall, and a passageway constituted by the outer wall of the fuse and the wall of the fuse chamber whereby water is permitted to have access to the water ignitible substance in said container.

3. An igniter for mines comprising a casing containing an explosive, a plug containing potassium, an air chamber within the casing into which the plug projects, and a passageway in the plug for admitting water to the potassium.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS GERALD FITZ GIBBON McCOMBIE.

Witnesses:

FRANK HAMILTON WILSON,
FRANK CHARLES MALLET.