

Nov. 20, 1923.

M. C. A. H. PAPE

1,474,548

FUSE

Filed Sept. 30, 1920

Fig. 1.

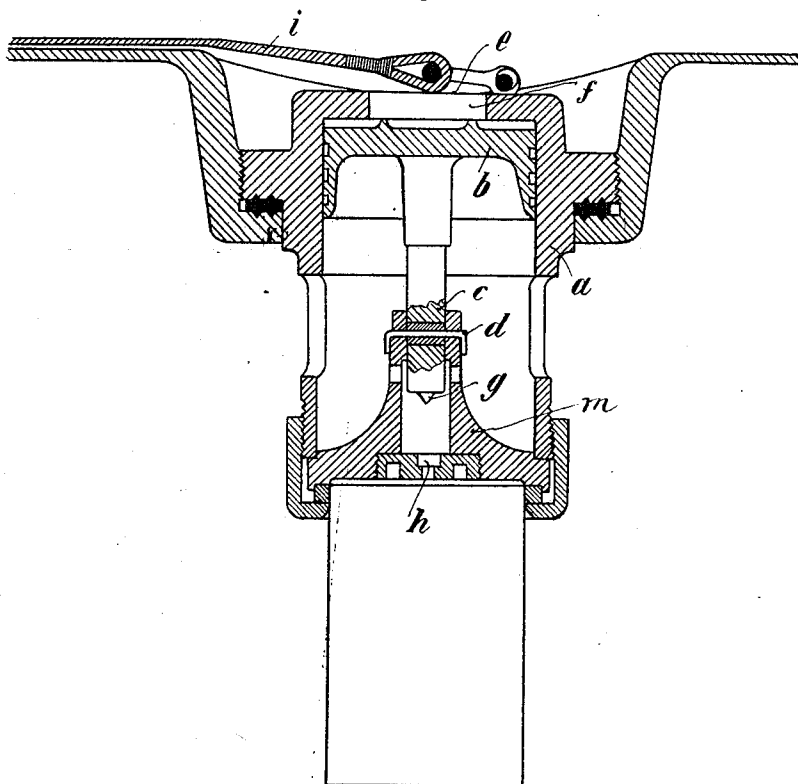
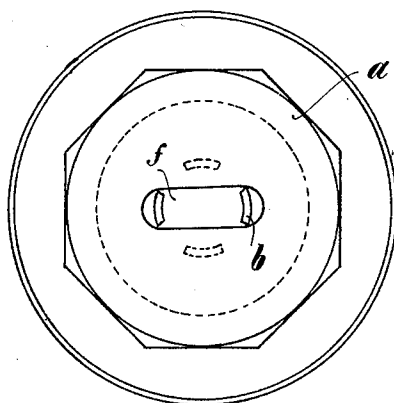


Fig. 2.



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UNITED STATES PATENT OFFICE.

MAX CARL AUGUST HERMANN PAPE, OF NEUMUHLEN-DIETRICHSDORF, NEAR KIEL, GERMANY, ASSIGNOR TO THE FIRM CARBONIT-AKTIENGESELLSCHAFT, OF HAMBURG, GERMANY.

FUSE.

Application filed September 30, 1920. Serial No. 413,884.

To all whom it may concern:

Be it known that I, MAX CARL AUGUST HERMANN PAPE, a citizen of the German Republic, residing at Neumuhlen-Dietrichsdorf, near Kiel, Germany, have invented certain new and useful Improvements in Fuses, (for which I have filed application in Germany, Oct. 19, 1918; Sweden, Dec. 8, 1919; Finland, Dec. 19, 1919; Spain, Dec. 6, 1919; Czechoslovakia, Feb. 14, 1920), of which the following is a specification.

This invention relates to fuses for depth bombs and has for its object to provide a device of this kind which is simple in construction and efficient and certain in operation.

In carrying out the invention a construction is provided in which a percussion pin is suddenly subjected to pressure of the water when the bomb has reached a certain depth.

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

Fig. 1 is a vertical sectional view of the device.

Fig. 2 is a top plan view thereof.

Referring to the drawings, the reference character *a* designates the fuse's casing in which slides a piston *b* to which is fixed a percussion pin *c*. The pin *c* projects into the bore of a member *m* fitted in the lower end of the casing and is adapted to slide therein, but is normally held against movement by a pin *d* which extends through openings in the wall of the member *m* and through an opening in the pin.

In the upper end of the casing *a* an opening *f* is provided normally covered by a piece of sheet metal *e*, so that the pressure of the water is prevented from acting upon the piston *b*. To the sheet metal piece *e* is fastened the end of the cable *i*.

The pin *c* is provided with a striking point *g* adapted to strike against the primer cap *h*.

The operation is as follows:

As soon as the bomb of which the fuse forms a part has reached a predetermined depth in the water, preferably shortly be-

fore, the cable *i*, fixed in a convenient manner, tears off the piece *e* of sheet metal. The piston *b* is thus suddenly subjected to pressure of the water which flows in through the opening *f* and this pressure is transmitted to the pin *d* tending to shear it off. If the pressure at that moment is great enough the pin *d* will be sheared off instantly but, if not, the bomb will continue to sink until the pressure on the piston is sufficient to shear off the pin, whereupon the piston will be suddenly moved downwardly causing the point *g* to strike against the primer cap with sudden and effective force.

The advantage of this construction over former constructions lies in the fact that springs and other supplemental devices are done away with together with their defects and the percussion pin being directly and suddenly exposed to the total effect of the pressure of the water, the action of said percussion pin will be much more energetic and certain than in prior constructions and the primer cap will be actually pierced and not merely dented.

The cover of sheet metal *e* forms a safety device to prevent explosion of the bomb until it has been submerged to a predetermined depth, whereby premature explosion is avoided.

Having now described my invention, what I claim is:

1. A fuse for a depth bomb, comprising a casing, a primer cap, a piston slidable in said casing, said casing having an opening in its end through which to admit water pressure to said piston, a percussion pin fixed to said piston, a stationary pin of predetermined strength engaging said percussion pin and restraining it from movement, said stationary pin being adapted to be sheared off to thereby release said percussion pin when the water pressure upon said piston has reached a predetermined value, said water pressure acting directly upon the piston, a piece of sheet metal normally covering the opening in said casing to prevent the water from exerting its pressure

against said piston, and a cable attached to said piece of sheet metal whereby to tear the latter off of said casing when the bomb has reached a predetermined depth.

- 5 2. A device according to claim 1, the ratio of the diameters of the piston and the percussion pin being at least 4:1.

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

MAX CARL AUGUST HERMANN PAPE.

Witnesses:

PETER LAMBRECHT,
HANS GLINDMEIER.