

No. 657,248.

Patented Sept. 4, 1900.

R. T. PHILLIPS.

BUFFER BLOCK FOR ILLUMINATING PROJECTILES.

(Application filed Dec. 8, 1899.)

(No Model.)

Fig. 1.

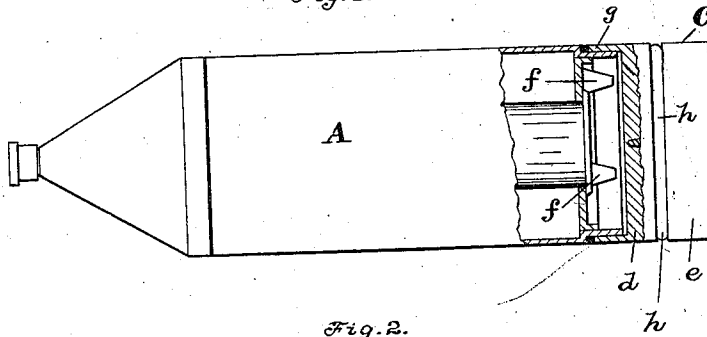


Fig. 2.

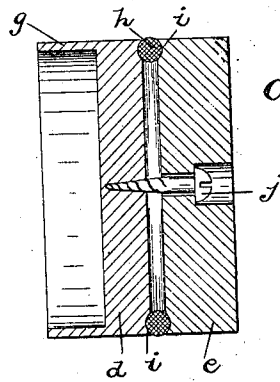
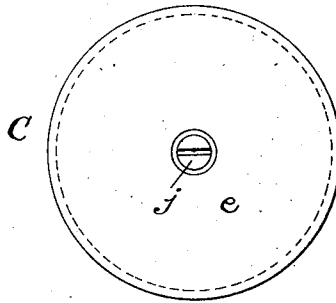


Fig. 3.



Witnesses:—

Charles B. Mann Jr.,
F. W. Barnack,

Inventor:—

Richard T. Phillips
By Chas B. Mann
Attorney.

UNITED STATES PATENT OFFICE.

RICHARD T. PHILLIPS, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO ERNST J. KNABE, JR., OF SAME PLACE.

BUFFER-BLOCK FOR ILLUMINATING-PROJECTILES.

SPECIFICATION forming part of Letters Patent No. 657,248, dated September 4, 1900.

Application filed December 8, 1899. Serial No. 739,620. (No model.)

To all whom it may concern:

Be it known that I, RICHARD T. PHILLIPS, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Buffer-Blocks for Illuminating-Projectiles, of which the following is a specification.

This invention relates to a buffer-block for that class of illuminating-projectiles which are fired from a gun and alight in water, where they float. Such projectiles are charged with suitable gas-producing material, such as carbide of calcium, and at one end have burners, which are uppermost when the projectile is floating in the water. When firing the projectile from a gun, a block is required to separate the end of the projectile from the charge of powder employed. This block is termed a "buffer-block."

My invention consists of a novel form of buffer-block.

Referring to the drawings, Figure 1 is a side view of an illuminating-projectile, partly in section at one end, where the buffer-block is applied. Fig. 2 is a sectional view of the buffer-block. Fig. 3 is an end view of same.

The letter A designates the body of the shell, which contains gas-producing material and having at one end burners *f*. This end is shown in section. When the shell is floating in the water, the burner end is uppermost and the burners are exposed. My improved buffer-block C is designed to cover the burner end of the projectile and to protect the burners when the projectile is being fired from the gun.

The buffer-block is composed of two independent members *d e*, separated from each other by a suitable elastic or yielding member, thereby to cushion the impact caused by the explosion of the powder. The block member *d* covers or fits over the burner end of the projectile. In the present instance this member has a rim-flange *g*, which slips over the contracted end of the shell A. This rim-flange forms a cavity in the block, and the end of the shell takes into said cavity. The other block member *e* is a mere disk and is separated from the first member by a packing of elastic material *h* interposed between the two members. This elastic material may

be a strand of rubber in the form of a ring, which occupies or is seated in two annular grooves *i*, one on the adjoining face of each member. The two members are connected together by a suitable bolt, screw, or pin *j*, passing loosely through at least one of them and entering the other. By this construction when pressure is so applied as to force the two members *d e* together the elastic material *h* will yield.

It will now be understood that with this improved buffer-block covering the end of an illuminating-shell the burners thereof will be protected from the charge of powder employed in firing the gun and the impact of the explosion will be cushioned on the projectile. This block will drop off or separate from the projectile while the latter is making its flight through the air.

It is to be understood that my invention includes any preferred form of spring or elastic contrivance interposed between the two independent block members.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A buffer-block for projectiles to be fired from a gun, comprising two cylindrical members each having on their adjoining faces an annular groove—one of said members provided on its end with a rim-flange, *g*, which forms a cavity; a ring of elastic material fitted in said grooves and between said members; and means to connect the two members so as to allow one to yield relative to the other.

2. The combination of an illuminating-projectile having burners projecting from one end; a buffer-block comprising two cylindrical independent members with elastic material interposed between them, and one of said members provided on its end with a rim-flange, *g*, which forms a cavity and takes over the end of the projectile and protects the burner from injury when the projectile is fired from the gun.

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

RICHARD T. PHILLIPS.

Witnesses:

CHARLES B. MANN, Jr.,
CHAR. S. VIETSCH.