May 5, 1925.

1,536,164

U. C. TAINTON

PROJECTILE

Original Filed Oct. 30, 1917

Fig. 1

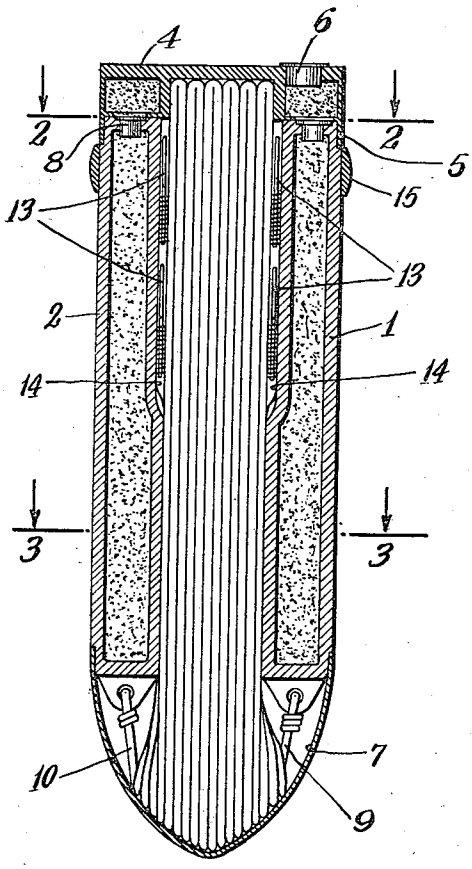


Fig. 2.

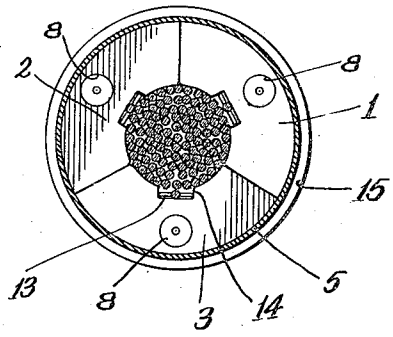


Fig. 3.

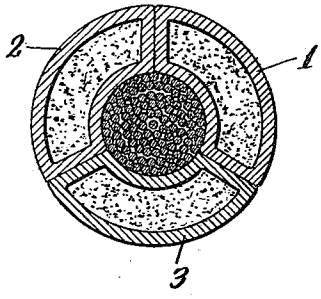
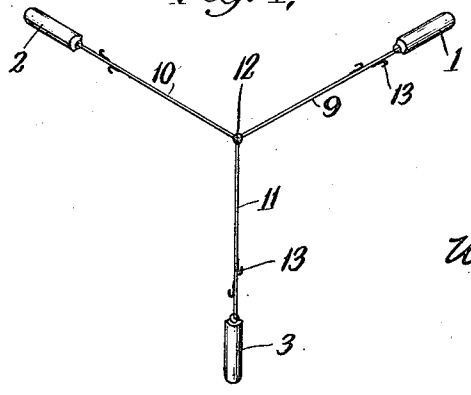


Fig. 4.



INVENTOR

Ulyss Clifton Tainton,

BY

Kenyon & Kenyon

his ATTORNEYS

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UNITED STATES PATENT OFFICE.

URLYN CLIFTON TAINTON, OF JOHANNESBURG, TRANSVAAL, SOUTH AFRICA.

PROJECTILE.

Application filed October 30, 1917, Serial No. 199,243. Renewed September 22, 1924.

To all whom it may concern:

Be it known that I, URLYN CLIFTON TAINTON, a subject of the King of England, and a resident of Johannesburg, Transvaal, British South Africa, have invented certain new and useful Improvements in Projectiles, of which the following is a specification.

My invention relates to projectiles and has been devised with special reference to projectiles used in aeroplane warfare.

Ordinary projectile will do no great damage to an aeroplane unless it strikes the man operating the aeroplane or strikes the fuel tank, because it can pass through the wings or other light portions of the aeroplane without exploding. Moreover the aeroplane moves so rapidly and changes its direction so suddenly that it is a difficult target to hit even at relatively short ranges. It is the object of my invention to provide a projectile that will be practically certain to substantially destroy the aeroplane if it hits the same, and also one which will be less liable to miss its target.

To these ends my invention comprises a projectile adapted to be fired as a unit from a gun, but to separate into parts each of which are explosive and which are connected by a flexible connector. These parts separate after the projectile leaves the gun and fly apart by centrifugal force but are kept within a definite distance of each other by the flexible connector uniting them. Such a projectile will, when it hits an aeroplane become entangled with it so that the various parts will explode effectively. Moreover such a projectile is more likely to hit its mark because, when its various parts are separated to the limit allowed by the flexible connections, it becomes a missile covering a great area. More specific features of my invention and the advantages thereof will appear more clearly from the following description of the specific embodiment of my invention illustrated in drawings.

Referring to the drawings:

Fig. 1 is a central longitudinal section of a projectile made in accordance with my invention. Figs. 2 and 3 are cross sections of the same on the lines 2—2 and 3—3 of Fig. 1. Fig. 4 illustrates the effective portions of the projectile after the several parts have been separated.

The projectile illustrated has three segmental parts, 1, 2 and 3, which each contain chambers containing an explosive. At the base of the projectile is a cap 4 which slips over the segments at 5 and unites their lower ends. Within the cap 4 is an explosive. This explosive is ignited by a time fuse 6 which is itself ignited by the explosion within the gun of the propelling charge. When the explosion occurs within the cap 4 the cap is torn sufficiently from the segments 1, 2 and 3 to permit them to separate. 15 is the band usually provided on projectiles adapting them to be used in a rifled gun. 7 is a cap engaging the segments 1, 2 and 3 and holding them together at their forward ends. The several segments may be constructed to explode upon impact, or they may be provided with time fuses 8, or these time fuses may be provided as additional means to insure explosion.

Segments 1, 2 and 3 are each connected to flexible connectors 9, 10 and 11 which are united at their free ends, as indicated at 12 in Fig. 4. These connectors are coiled within the projectile in such manner that they will straighten out when the segments become disunited from the caps 4 and 7. I prefer to attach hooks 13 or other anchoring devices to the connectors at points near the segments. These hooks lie in recesses 14 in their repective segments.

As a specific illustration, I may assume that the projectile illustrated is to be used in a one-and-one-half-inch rifled gun, that each segment would weigh approximately three ounces and carry an ounce of explosive; that the flexible connectors 9, 10 and 11 are each about ten feet long and are steel strands one-sixteenth inch in diameter. The projectile will be propelled through the gun in the usual manner, revolving at a high rate of speed because of the rifling. The propelling explosion within the gun will have ignited the time fuse 6 which will cause an explosion within the cap 4, say one-half second after the projectile has left the gun. This will free the lower ends of the segments 1, 2 and 3, and the revolution of the projectile will cause the segments to be thrown apart by centrifugal force and they will readily detach themselves at their forward end from the cap 7. The explosion within the cap 4 will have set the time fuses 8, so that if the segments 1, 2 and 3 should not burst by explosion upon impact, they will burst by the action of the time fuses, say one second after the explosion within the cap 4. After the various segments have

been thrown outwardly by centrifugal force, they will take substantially the position shown in Fig. 4, and will engage any part of the aeroplane that may lie within the twenty foot diameter area which the missile then covers. When any part of this missile engages the aeroplane, the flexible connectors will wrap around the parts of the aeroplane and bring the various segments into the same to explode by impact or by the operation of the time fuses 8, and thus effectually destroy or disable the aeroplane.

If the missile chances to engage its target only on one of the connectors 9, 10 or 11, and part of such engagement should be very close to one of the segments, the force might be sufficient to shear through the connector and allow the segment to proceed without doing damage, while the other segments could also proceed by simply pulling the broken connector free of obstructions. It is for this reason that I prefer to employ hooks or similar anchors 13 as shown, so that if the connector be sheared off between the hooks and the segment, the hooks will engage strut or other part of the aeroplane and tend to swing the two other segments into the same.

While I have specially devised my improved projectile for aeroplane warfare, and believe that its principal utility resides in such use, I do not desire to be limited to any particular use of my invention. Nor do I desire to be limited to the specific features of construction and arrangement which I have illustrated and described, because these are merely illustrative of one form of my invention and might be departed from while still employing my invention as set forth in the appended claims.

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

1. A projectile comprising a plurality of explosive segments of substantially equal weight, provided with a suitable rifling band and adapted to be projected from a gun as a unitary projectile, a member binding said segments rigidly together and containing an explosive, means ignited by the propelling charge for dislodging the binding member to permit the segments to separate from each other by centrifugal force, a flexible connector connected to the several segments and provided with anchoring means near the ends holding the segments to cause the projectile to become entangled with or anchored to a target such as an aeroplane, said segments constructed with time fuses.

2. A rifled projectile comprising a plurality of separate explosive parts held together by a binding member containing an explosive and connected by a flexible connector, means whereby the firing charge sets off said explosive for dislodging the binding member and permitting the said explosive parts to separate from each other by centrifugal force until held a desired distance apart by said flexible connector, and means attached to said flexible connector which, upon striking a target such as an aeroplane, will cause the projectile to become entangled therewith.

3. A rifled projectile comprising a plurality of separate fuse-equipped explosive parts connected by a flexible connector and held together by a binding member containing an explosive, means whereby the propelling or firing charge sets off the said explosive for dislodging the binding member and permitting the said explosive parts to separate from each other by centrifugal force until held apart a distance limited by the length of said flexible connector, the explosion which dislodges the binding member also setting the fuses for the operation of the explosive parts.

4. A rifled projectile comprising a plurality of separate fuse-equipped explosive parts connected by a flexible connector and held together by a binding member containing an explosive, means whereby the propelling or firing charge sets off the said explosive for dislodging the binding member and permitting the said explosive parts to separate from each other by centrifugal force until held apart a distance limited by the length of said flexible connector, the explosion which dislodges the binding member also setting the fuses for the operation of the explosive parts, and means attached to said flexible connector which upon striking a target, such as an aeroplane, will cause the projectile to become entangled therewith.

In testimony whereof, I have signed my name to this specification.

URLYN CLIFTON TAINTON.