S. WILEY.

INCENDIARY DART.

APPLICATION FILED JULY 31, 1915.

1,181,278.

Patented May 2, 1916.

Fig. 1.

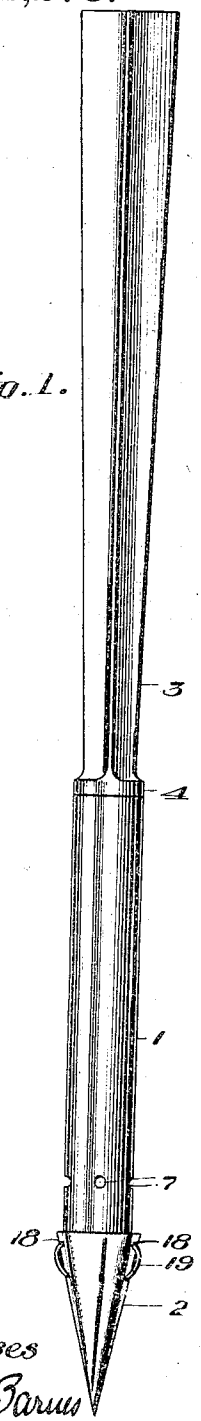


Fig. 2

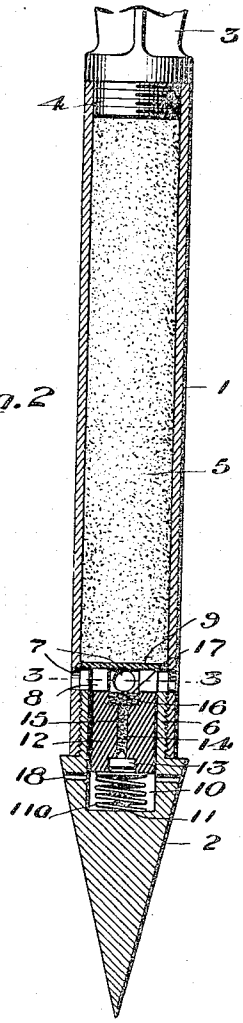
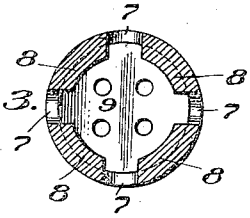


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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INCENDIARY DART.

1,181,278. Specification of Letters Patent. Patented May 2, 1916.

Application filed July 31, 1915. Serial No. 43,003.

To all whom it may concern:

Be it known that I, SAMUEL WILEY, a citizen of the United States, residing at Dongan Hills, Staten Island, in the county of Richmond and State of New York, have invented new and useful Improvements in Incendiary Darts, of which the following is a specification.

My present invention pertains to ammunition, and contemplates the provision of an incendiary dart, designed to be dropped from an aeroplane or other airship, and constructed with a view to remaining in an upright position until it strikes or penetrates a building, and also constructed with a view to firing a charge of highly inflammable substance, that it carries, when it strikes the building, and emitting copious streams of burning material incidental to the penetration of the building so as to assure the building catching fire.

With the foregoing in mind the invention will be fully understood from the following description and claims when the same are read in connection with the drawings, accompanying and forming part of this specification, in which:

Figure 1 is an elevation of my novel dart. Fig. 2 is an enlarged detail vertical section of a portion of the dart, illustrating the interior appurtenances thereof. Fig. 3 is a horizontal section taken in a plane indicated by the line 3—3 of Fig. 2.

Similar numerals of reference designate corresponding parts in all of the views of the drawings.

The present and preferred embodiment of my invention is so constructed that the dart is susceptible of being expeditiously manufactured and readily charged with a highly inflammable substance and the contact means for firing said substance. Said embodiment comprises a tubular body 1, preferably of steel, a conical head 2, also by preference of steel, and a tail 3 that is preferably, though not necessarily, of aluminum, this for the sake of lightness. The tubular body 1 is interiorly threaded at its rear end to receive the correspondingly threaded plug portion 4 of the tail 3, which plug portion 4 serves to effectually close the rear end of the body 1 after the highly inflammable or combustible substance 5 is placed in said body. Manifestly the said highly inflammable or combustible substance may be of any character compatible with the purpose of my invention such, for instance, as a compound of nitrate or baryta and aluminum, without involving departure from the scope of the same as claimed.

At its lower or forward end the body 1 is interiorly threaded to receive the threaded and reduced portion 6 of the head 2, and at a slight distance above its last-mentioned thread the tubular body is provided with one or a plurality, preferably four, vent apertures 7 for the emission of flames or streams of burning material, while in about the same plane as said apertures the tubular body is provided with interior spaced lugs 8. These lugs 8 serve to support the foraminous diaphragm 9 which is of a metal, zinc or lead for instance, or other suitable material that is readily fusible or adapted to melt. The said diaphragm 9 is placed in the tubular body 1 precedent to the charging of the body with the inflammable substance 5, and the making of said diaphragm of a material that is adapted to readily melt is highly advantageous for the reason that after the disintegration of the diaphragm one or more copious streams of fire or burning material are emitted through the vent aperture or apertures of the body. Manifestly the tail 3 which is designed to promote the direct descent of the dart may be provided with four (more or less) vanes in the discretion of the manufacturer.

The head 2 is chambered as indicated by 10, and is provided at the lower end of the chamber with a firing pin 11. Arranged in the head chamber 10 and superimposed on a cushioning spring 11^a is a plunger 12 which carries a percussion cap 13 at its lower end and has a vertical passage 14, designed to be filled with gun powder 15. At its upper end said passage 14 terminates in a seat 16 in which is arranged a wad or disk 17 of metal, paper or other suitable material. When deemed expedient the head 2 may be provided with a transverse aperture 18 for the reception of a safety wire or pin 19 designed to keep the plunger away from the firing pin during transportation or handling of the dart; the said wire or pin being, of course removed before the dart is dropped for action. As clearly illustrated the exterior diameter of the tubular body 1 is smaller than the largest diameter of the head 2 for an important purpose hereinafter set forth.

It will be gathered from the foregoing

that when the dart constructed and charged as described is dropped on a building, the contact will fire the percussion cap and train of powder, and the blast from the latter will displace the wad and ignite the inflammable or combustible substance in body 1. Then as the dart penetrates the building the ignited substance 5 will melt the diaphragm 9 and hence the passage of the dart will be attended by the emission of copious streams of burning substance or flames from the apertures 7.

It will here be noted that because of the head 2 being larger in diameter than the body 1, an annular space will be left around the body 1 by the head. Said annular space will permit the passage of flames and hence will promote the firing of the building, both during the passage of the dart and after the dart comes to rest in the building.

At the time of contact when the plunger 12 is impelled downward against the action of the spring to carry the percussion cap into engagement with the firing pin, it will be observed that the apertures 7 and the air space between the head and the foraminous diaphragm will assure the supply of an ample quantity of air to support combustion.

Any suitable means may be employed to fire the charge of combustible material in the dart, and I therefore do not desire to be understood as confining myself to the specific firing means herein shown and described.

Having described my invention what I claim and desire to secure by Letters-Patent, is:

1. A device for the purpose described, comprising a tubular body having an aperture and interior supporting means, a foraminous diaphragm of fusible material arranged in the body above the aperture and on said supporting means and adapted to support inflammable material, vane-carrying means closing the rear end of the body, a pointed head having a portion closing the forward end of the tubular body and also having a rear portion larger in diameter than the tubular body, and means in the head for firing the inflammable or combustible material on contact of the head with an object.

2. A device for the purpose described, comprising a tubular body interiorly threaded at both ends and having a vent aperture adjacent to its lower end and also having interior lugs, a foraminous diaphragm, of fusible material, arranged in the body and on said lugs and above the vent aperture and adapted to support inflammable or combustible substance, vanes integral with a threaded plug portion that closes the upper end of the body, a pointed head larger in diameter than the body and having a threaded portion that closes the lower end of the body, and means in said head for firing the inflammable or combustible material on contact with an object.

3. An incendiary dart, comprising a body adapted to contain inflammable or combustible substance and having a vent aperture, and a pointed head at the forward end of said body; the rear portion of said head being larger transversely than the body and being arranged in front of said aperture.

4. An incendiary dart, comprising a headed body adapted to contain inflammable or combustible substance and having a vent aperture and also having an interior foraminous diaphragm, of readily fusible material, adapted to support the inflammable or combustible substance.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

SAMUEL WILEY.

Witnesses:
JOSEPH G. MURRAY,
JOHN TIMLIN, Jr.