J. A. STEINMETZ.

APPARATUS FOR DEFENDING AGAINST AIR CRAFT.

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1,067,773.

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Fig. 1.

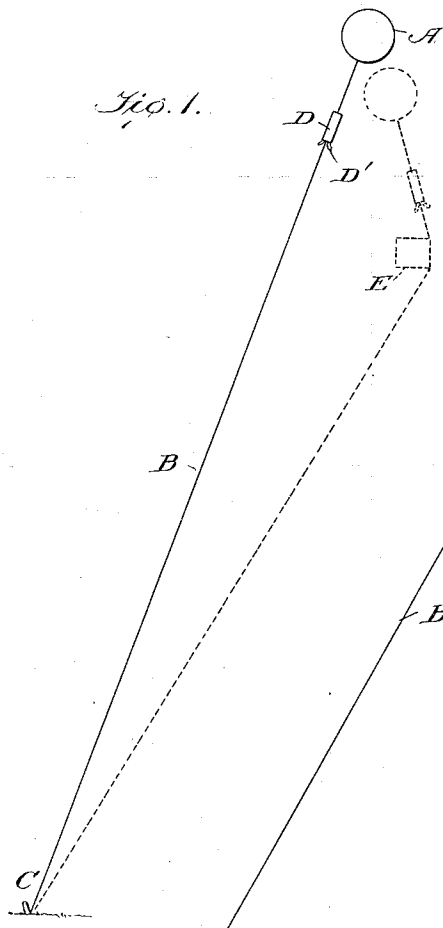


Fig. 2.

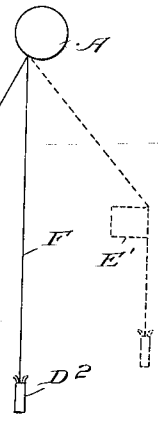


Fig. 3.

Witnesses

Edwin L. Bradford

Robert Craig Greene.

Inventor

Joseph A. Steinmetz

By Wallace Greene,

Attorney

UNITED STATES PATENT OFFICE.

JOSEPH A. STEINMETZ, OF PHILADELPHIA, PENNSYLVANIA.

APPARATUS FOR DEFENDING AGAINST AIR-CRAFT.

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To all whom it may concern:

Be it known that I, JOSEPH A. STEINMETZ, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Defending Against Air-Craft, of which the following is a specification, reference being had therein to the accompanying drawing.

The object of this invention is to protect towns, forts, vessels, or any given object or area from the attacks of aeroplanes or other aircraft, and it involves providing easily movable contact mines, bombs, or torpedoes, in the vicinity of the area to be protected, each being connected, by a wire or the like, to a box kite, captive balloon or the like, at a relatively great height, so that an aeroplane, or the like, striking laterally against the wire deflects it, thereby drawing the bomb to itself and exploding it.

In the accompanying views, Figure 1 shows diagrammatically a bomb carried by the line or wire holding a balloon captive. Fig. 2 shows, similarly, a bomb suspended from a captive balloon by an independent wire. Fig. 3 shows a bomb like that of Fig. 2 added to the devices of Fig. 1.

In these figures, A represents a balloon held captive by a wire B (preferably smooth piano wire) secured at a point C, the attachment being to any fixed object or to any moving or movable object offering suitable resistance to a pull upon the wire, *e. g.* an automobile, boat, or other suitable object upon land or water.

As shown in Fig. 1, the balloon wire itself carries a bomb D provided at its lower end with a suitable contact device D′ by which it may be exploded. Any air ship E or the like striking the wire B deflects it, and since the balloon above offers less resistance than the point of the line's attachment, the balloon and bomb are drawn downward until the contact device strikes the air ship, causing a destructive explosion.

With the bomb D^2 suspended from the balloon A′ as indicated in Fig. 2, the deflecting object E′ similarly causes an explosion by drawing upward the bomb which offers less resistance than the balloon to the pull upon the suspending wire, F.

In Fig. 3, the balloon A^2 supports a bomb D^3 as in Fig. 1 and also a bomb D^4 as in Fig. 2. Here the deflection of either wire by an aeroplane or the like obviously causes an explosion, the resistance of the balloon being less than that of the point of attachment below and greater than that of the pendant bomb.

Manifestly the number of such devices that may be used about any area is not limited, nor is the number of bombs carried by any of the wires, and as obviously, the balloon holding wires may be attached to a battleship or small boats near the same, the locations being so chosen that it is practically impossible that any aircraft should pass without striking one or more of the wires, especially if the wires be moving at speeds controlled by the persons acting for the defense. It may also be noted that the speed of the aeroplanes is necessarily such that were the aviator to become aware, instantly, that a wire had been struck, the resulting explosion could not be avoided. A knowledge of this fact would in itself tend to demoralize the hostile force. It is also plain that the height of the balloon may be varied at will, as in the use of ordinary kites and captive balloons, and that since an air ship cannot be a serious menace when at a great height, the balloons may usually be above the sphere of hostile activity.

The bombs need weigh but a few pounds and their cost, and indeed the entire cost of the apparatus, is insignificant in comparison with the cost of special defensive guns. The bombs are inconspicuous and the wires invisible at any considerable distance, even in daylight, while at night both are normally invisible and are not readily located by the use of hostile searchlights. At the same time, those in charge of them may know from the length and direction of the balloon wire paid out, approximately the location of each bomb.

The bombs are usually weighted at the end opposite the contact device, so that should one fall freely its contact end will not strike the earth.

What I claim is:

1. A means of defense against aeromachines in flight, comprising a captive aerial supporting device and a bomb supported therefrom by a flexible connection and provided with a contact device in position to be drawn against an aero-machine in flight striking and deflecting said connection.

2. A means of defense against aero-machines in flight comprising a captive aerial

supporting device, and a bomb supported in the air below said device by a flexible connection; said bomb being provided with contact devices in position to be drawn against a transversely moving aero-machine striking said connection, and further having its side opposite said contact devices weighted, whereby in falling freely the bomb may strike the earth with its contact devices uppermost.

3. A means of defense against aero-machines in flight comprising an aerial supporting device held captive by a line attached to a support capable of being readily moved from place to place, and a bomb supported from said device by a flexible connection and provided with a contact device in position to be drawn against a transversely moving aero-machine striking said connection.

4. A means of defense against aero-machines in flight, comprising a balloon or the like, a flexible line extending downward from said balloon, and a contact bomb supported by said line and having its contact device in position to be drawn against a transversely moving aero-machine which may deflect said line.

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

JOSEPH A. STEINMETZ.

Witnesses:

E. M. CONREY,

H. G. VAN COURT.