

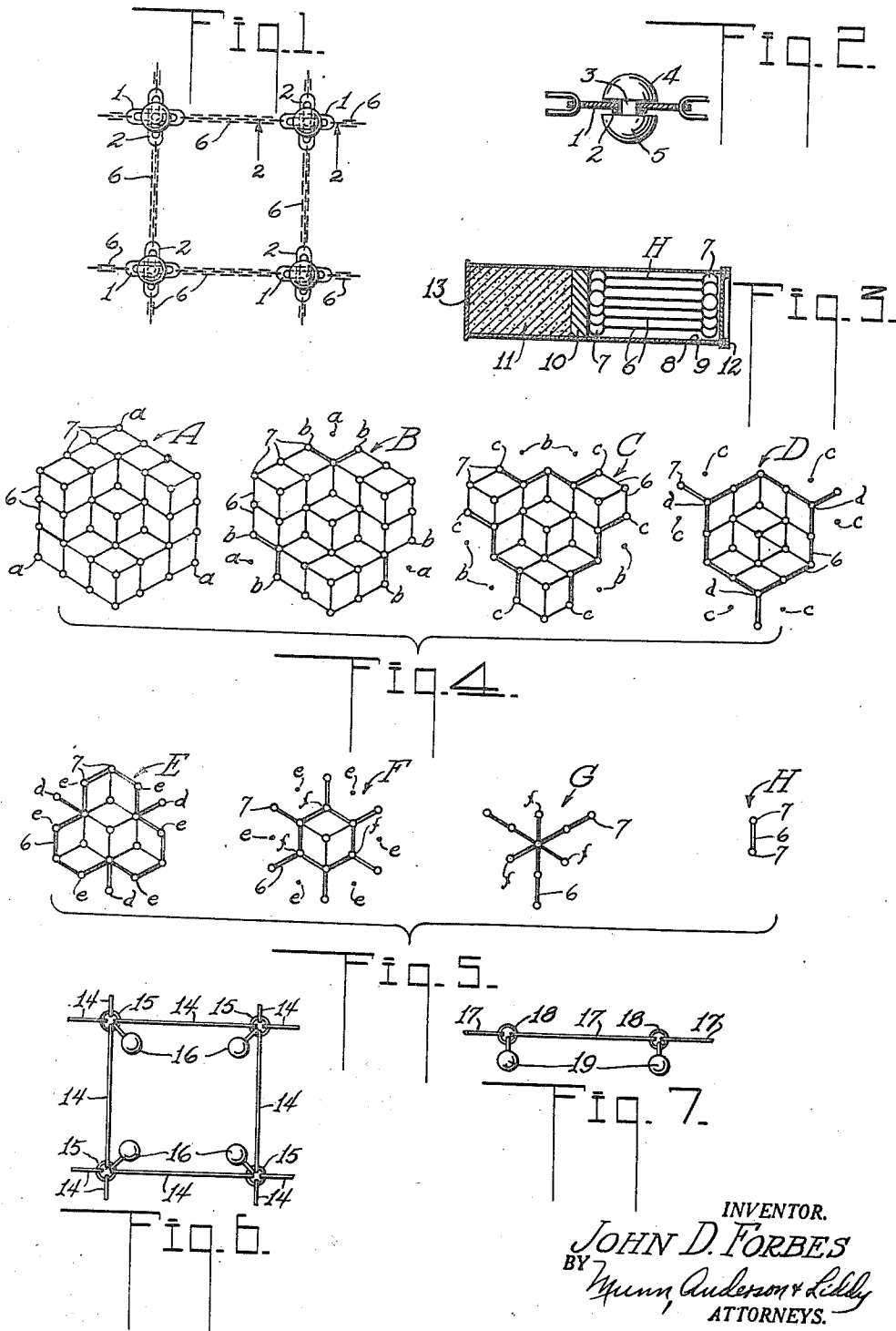
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J. D. FORBES

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CHAIN SHOT

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CHAIN SHOT

John D. Forbes, San Francisco, Calif.

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7 Claims. (Cl. 102—89)

My invention relates to improvements in an improved chain shot, and it consists of the combinations, constructions and arrangements hereinafter described and claimed.

Anti-aircraft guns are used as a defense against airplanes and rapid firing guns and machine guns are usually employed for this type of defense. It is frequently possible for an airplane to stay aloft even though one or more direct hits have been made, because the bullets only drill holes into the airplane and these are not of sufficient size to impair the lifting qualities of the wings. Even though a large number of shots are fired at an airplane simultaneously and find their target, the shots will merely drill a like number of holes in the fuselage and wings, and still not possibly do sufficient damage to bring the plane down.

The principal object of my invention is to provide a plurality of bullets connected together by links or chains in such a manner that the links and bullets may be folded into a compact bundle and placed either in a cartridge or in a bore of a gun preparatory to firing. When the projectile, formed of bullets and links, is fired, the links will permit the bullets to spread while still being interconnected, and this will form a pattern that will extend over a much larger area than that occupied by a single shell. When the projectile hits the target, as for example an airplane, the bullets as well as the links, will pass through the structure and will tear a hole equal to the area occupied by the bullets and links. Such a projectile when hitting an airplane, will practically in every instance, damage it to such an extent as to bring it down. It will be seen therefore, that this type of projectile will be more effective than even where an explosive shell is used, the explosion occurring after a predetermined time interval from the time the shell leaves the gun.

A further object of my invention is to provide a device of the type described that is extremely simple in construction and is durable and efficient for the purpose intended.

Other objects and advantages will appear in the following specification, and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawing forming a part of this application, in which

Figure 1 is a plan view of a portion of the projectile showing the bullets or weights connected together by chains;

Figure 2 is an enlarged sectional view taken along the line 2—2 of Figure 1;

Figure 3 is a longitudinal section through a cartridge showing the projectile mounted therein in a compact bundle;

Figures 4 and 5 illustrate one pattern formed by the bullets and links and indicate how the links may be folded to form a compact bundle;

Figure 6 is a modified form of the device; and Figure 7 is another modified form of the invention.

In carrying out my invention, I provide links 1 and 2 crossing each other and slidably receiving a shank 3 of a rivet having two weighted ends 4 and 5. The ends of the rivet are heavy enough to constitute a weight or a bullet for the device. Figure 1 shows the links 1 and 2 interconnected by sash chains 6 for forming a square. In constructing the complete projectile, as many bullets and chains as desired may be used to form a pattern consisting of a plurality of squares, the corners of the squares carrying weights.

It is possible to provide a hexagonal pattern consisting of diamond-shaped openings, if desired. I show such a pattern at A in Figure 4. The bullets or weights are indicated by circles 7 and the links are by lines 6. The links may be the sash chains 6 shown in Figure 1 or they may be rigid bars pivotally connected to each other and to the weights or bullets 7. The eight diagrams shown in Figures 4 and 5, illustrate how the complete pattern shown at A may be folded in a particular manner to finally form a compact bundle shown at H. The bullets or weights at the points *a* in pattern A are moved inwardly toward the center until their adjacent links 6 parallel the other two links of the collapsed diamond. This movement is illustrated as having taken place in pattern B and the points *a* illustrate the position formerly occupied by the weights 7. In pattern B, the weights at points *b* are moved inwardly to collapse the diamond areas associated therewith, and to form the reduced pattern shown at C.

In like manner, the weights at points *c* in pattern C are moved inwardly to form the pattern shown at D. Patterns E, F, G, and H, illustrate how the weights at points *d*, *e* and *f* are successively moved inwardly until the entire pattern is collapsed to the bundle shown at H. This bundle has a length equal to the length of one of the links and has a thickness corresponding to the thickness of all of the links plus the space occupied by the weights 7. Patterns A to H, inclusive, are diagrammatically shown and do not illustrate all of the links from pattern E to H

because this would be confusing. Where two or more links are brought into parallel relation, such a relation is shown solely by two lines and where two or more weights are brought into juxtaposition, the showing is made by a single circle rather than a group of circles.

The bundle H may be placed in a cartridge indicated at 8 in Figure 3. The bundle in reality constitutes a projectile and is housed in a compartment 9 in the cartridge. A wad 10 separates the projectile H from the powder compartment 11. A closure 12 covers the outer end of the shell or cartridge. A firing cap 13 is centrally disposed at the other end in the usual manner.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood.

It is obvious that the cartridge 8 may be in the form of a large shell if desired, and this shell can have a compartment for receiving the projectile H. If the cartridge is used as shown in Figure 3, the firing of the powder 11 will force the bundle H from the cartridge and through the bore of the gun, not shown. The bundle will open up into the pattern shown at A or any other desired pattern after it leaves the gun. The projectile will therefore cover a much larger area in its expanded form and will cause real damage to any object it strikes because the weights or bullets 7 will not only pierce the object, but the links 6 will be carried through the object by the bullets and will tear portions lying between the weights. If desired, a shell may be used with a timing arrangement that will eject the projectile H from the shell after a predetermined time interval, subsequent to the firing of the shell from the gun.

In Figures 6 and 7, I show two slightly modified forms of the invention. In Figure 6, rigid links 14 are slidably connected to rings 15 and weights or bullets 16 are also connected to the rings. In Figure 7, a single chain shot is indicated and is composed of rigid links 17 slidably connected to rings 18 to which weights or bullets 19 are secured. It is obvious that the links 14 and 17 may constitute in themselves weights and thus do away with the provision of the bullets or weights 16 and 19. The inventive point of novelty lies in a projectile formed from a plurality of links that may be folded into a compact bundle, the projectile spreading out into a large pattern when fired from a gun. A three inch gun could probably be loaded with fifty feet or more of chain or links and weights. The projectile when folded, could be placed in a bore of a small automatic gun mounted on the airplane.

This device is not only more effective in striking an object, but in case the projectile should miss the object, less damage will result from it than from a high explosive shell. In the case of a shell, an explosion might occur after the shell hits the ground and thus do great damage. My projectile when striking the ground, cannot explode and therefore can do not further damage.

While I have shown only the preferred forms of my invention, it should be understood that various changes or modifications may be made within the scope of the appended claims without departing from the spirit of the invention.

I claim:

1. A missile having a plurality of rigid links of the same length and pivoted together to form a two-dimensional pattern covering a wide area in both dimensions, said links being foldable at their points of pivot into substantial parallel arrangement with respect to each other to form a bundle having a length equal to the length of one of the links.

2. A missile for firearms having connected links formed into diamond-shaped polygons, the polygons being arranged to cover a hexagonal two-dimensional area, said links being equal in length and foldable into a bundle having a length equal to the length of a single link, and a weight placed at the pivot point of each of two or more links.

3. A missile having a plurality of weights, links pivotally connected to the weights in such a manner as to form a pattern when the missile is expanded, the links being movable to lie parallel with respect to each other and in compact form when the missile is contracted, said weights and links, when folded into a compact bundle, constituting a portion to be fired from a gun, said bundle, when fired into the air from the gun, opening up into a screen-like pattern covering a large area in which all of the links lie substantially in a single plane.

4. An expandible missile formed of a plurality of outer links connected together in such a manner that the links can lie parallel with one another when the missile is collapsed and can cover a large two-dimensional area when fully expanded, and additional links connected to the outer links and extending across the area thus defined by the outer links to cause the missile to form a screen-like pattern when fully expanded.

5. A missile for fire arms having rigid links pivotally connected together and formed into diamond-shaped polygons, the polygons being arranged to cover a hexagonal two-dimensional area, said rigid links being equal in length and foldable into a bundle having a length equal to the length of a single link, and a weight placed at the pivot point of each of two or more links.

6. A missile having a plurality of weights, rigid links pivotally connected to the weights in such a manner as to form a pattern when the missile is expanded, the links being movable to lie parallel with respect to each other and in compact form when the missile is contracted, said weights and links when folded into a compact bundle constituting a portion to be fired from a gun, said bundle when fired into the air from the gun opening up into a screen-like pattern covering a large area in which all of the rigid links lie substantially in a single plane.

7. An expandible missile formed of a plurality of outer rigid links pivotally connected together in such a manner that the links can lie parallel with one another when the missile is collapsed and can cover a large two-dimensional area when fully expanded, and additional rigid links pivotally connected to the outer rigid links at the latter's point of pivotal connection and extending across the area thus defined by the outer links to cause the missile to form a screen-like pattern when fully expanded.

JOHN D. FORBES.