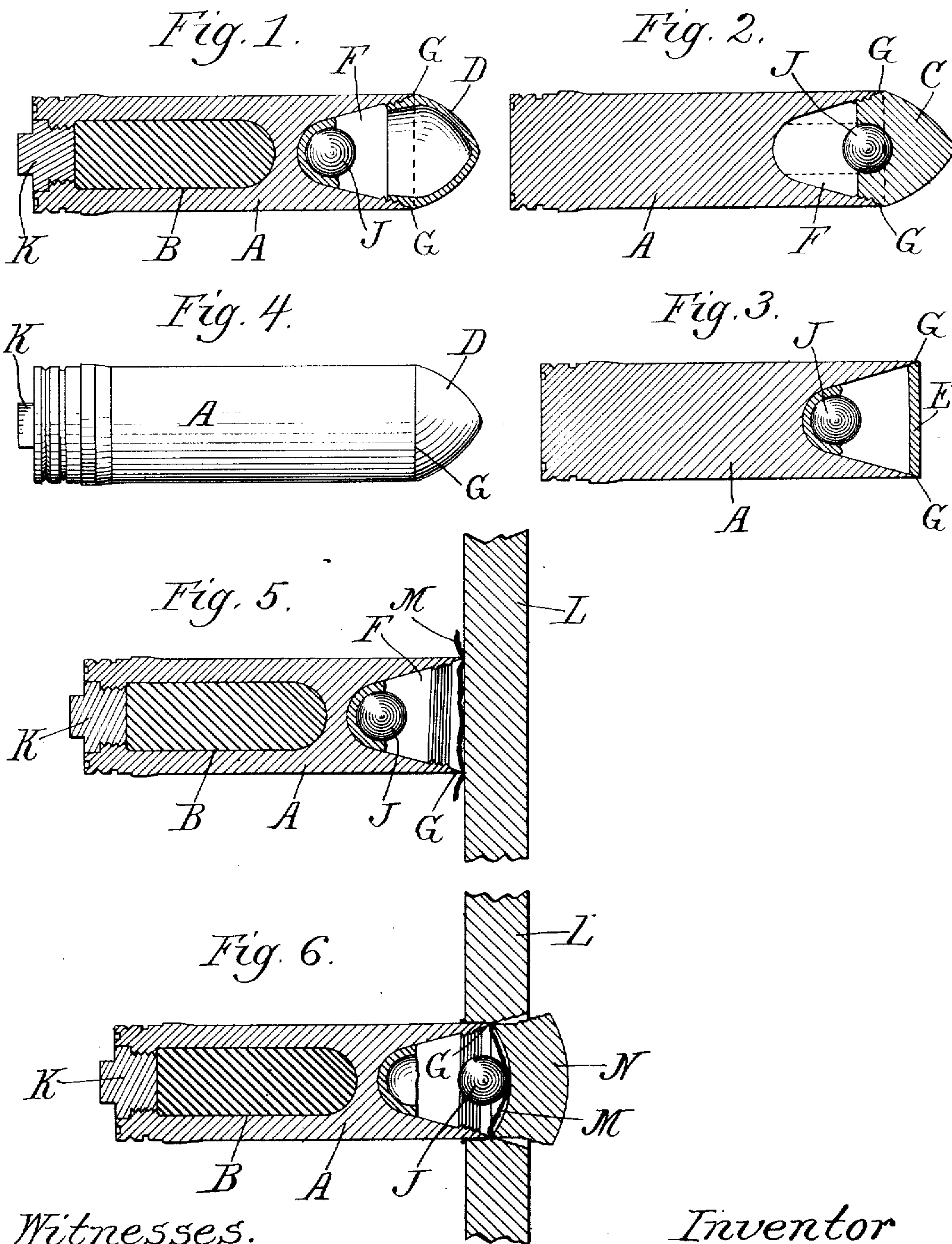


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PROJECTILE.
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911,591.

Patented Feb. 9, 1909.



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PROJECTILE.

No. 911,591.

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To all whom it may concern:

Be it known that I, GILBERT H. HOXIE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Projectiles, of which the following is a specification.

My invention relates to projectiles and is illustrated in the accompanying drawings wherein—

Figure 1 is a longitudinal section through a projectile containing one form of my invention, Fig. 2 is a similar view of a modification, Fig. 3 is a similar view of a still further modification, Fig. 4 is a side elevation of the device illustrated in Fig. 1, Fig. 5 is a longitudinal section through the device of Fig. 1 supposed to be taken at the moment when the cutting edge has reached the target plate, Fig. 6 is a similar view at the moment when the impact part has struck, bulged and partly torn the disk out of the plate to make a passageway for the projectile.

Like parts are indicated by the same letter in all the figures.

A is the body of the projectile or bullet which may be projected in any desired manner and may be made of any desired material and may or may not be supplied with explosive material. B is a pocket for such explosive material illustrated in Fig. 1.

C is one form, D another and E a third form of a filler for closing the forward chamber F in the bullet. This chamber is of any desired size, shape and depth but its presence results in forming an annular cutting ring or edge G at the forward end of the projectile. The filler is preferably composed of a soft metal like lead which will melt under the heat of the impact or at least will not materially interfere with the further action of the bullet as hereinafter explained.

J is the impact part, in this case shown in the form of a globe-like part, though it may be of any desired shape. It is supported within the chamber F in any desired manner as, for example, by being slightly embedded in the filler or filling plug or by being temporarily secured, as for example by lead or the like soft material, in the bottom of the chamber.

K is the plug to close the explosive material chamber.

L is the target plate. M the soft or other

metal filler in its distributed condition after it has struck the target, N the disk which is being forced or punched out of the plate. Of course it will be understood that these parts are shown in a diagrammatic and illustrative manner without any attempt to get exact proportions or structures. Indeed no exact drawing illustrating the operation of the bullet upon impact can be had. I have illustrated this, however, for explanatory purposes, in connection with the diagram of the structure shown in Fig. 1. I think in the form shown in these drawings it is better that the chamber should be of greater cross sectional area than the movable impact part, so as to obviate the danger of having the impact part interfered with by metal or air within the chamber. On the other hand, if it is found desirable to mount the impact part in the forward portion of the bullet, as illustrated in Fig. 2, so as to get the benefit of the compressed air back of it, the chamber should be of approximately the same cross section as the impact part, as illustrated in Fig. 2 in dotted lines.

The chamber can, of course, be filled with any desired material such as not to materially interfere with the action of the impact part or its free motion therethrough, and the impact part can be secured in position at any point and by any desired material. I have suggested lead but any one of many other substances could be employed.

The use and operation of my invention is as follows: When a projectile is discharged at a target, for example a plate of steel, it is found desirable to have the forward end of the projectile closed in order that it may properly travel through the air and strike the target in the proper manner. If the forward end of the projectile be open so as to leave an annular cutting edge, and if it strike the target squarely with such cutting edge, it is clear that the effect will be to make an annular indentation or fracture in the plate where the annular cutting edge of the projectile strikes it. This, however, will tend to retard the bullet and if there be at such moment within the bullet an impact part free to move forward independently of the rest of the bullet or projectile and strike the plate within such indentation, it is clear that the tendency would be to force the metal within the indentation, in other words the disk, out and make a hole through the plate. Through

this hole the entire projectile can then freely pass and its explosives, if any there be within it, can have their effect on the opposite side of the plate. Now in this form of bullet or projectile adapted to perform this service, which is my invention, there may be various ways of supporting the impact part which is destined to punch out the disk. I have shown it as supported within the chamber back of the cutting edge, either by means of its connection to the filling plug or by means of its association with the material at the bottom of the chamber. Where, as in these cases, the impact part is not adapted to substantially fill the opening and is not intended to first strike the target, it is desirable, in order that such impact part may have free movement that it be smaller in cross section than the chamber, and that the relation of the parts be such that the filling material which remains in the chamber after the first contact with the target shall not plug the chamber and prevent the free motion of the impact part. The impact part is held so that it does not move at all times with the body of the projectile as if continuous therewith, for in both of the forms shown it is dislodged either by the first impact of the filling material with the target or by the impact part or cutting edge with the target. If, as above explained, it is thought desirable to utilize the compressed air to finally force the impact part forward, then the impact part should be placed forwardly in the chamber and should be approximately the same cross section as the chamber, as illustrated in dotted lines in Fig. 2.

Broadly speaking the essential elements seem to be a bullet body with a forward annular cutting edge and chamber, a yielding filler to close the opening of the chamber and form the nose of the bullet, but of such a nature as not to perform any material function in fracturing the target, and an impact part carried by the bullet within the chamber and adapted to move independently of the bullet and to effectively strike the target after the cutting edge has performed its first function. It is with this sense that I have used these several terms.

I claim:

1. In a projectile the combination of a body with a forward annular cutting edge and chamber, a yielding filler to close the chamber opening and form the nose of the bullet, and an impact part within the chamber.

2. In a projectile the combination of a body with a forward annular cutting edge and chamber, a yielding filler to close the chamber opening and form the nose of the bullet, an impact part within the chamber, and secured to the bullet body.

3. In a projectile the combination of a body with a forward annular cutting edge and chamber, a yielding filler to close the chamber opening and form the nose of the bullet, an impact part within the chamber and secured to the bullet body near the bottom of such chamber.

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