J. LOBENAT.

PROJECTILE.

APPLICATION FILED OCT. 23, 1914.

1,129,696.

Patented Feb. 23, 1915.

Fig. 2.

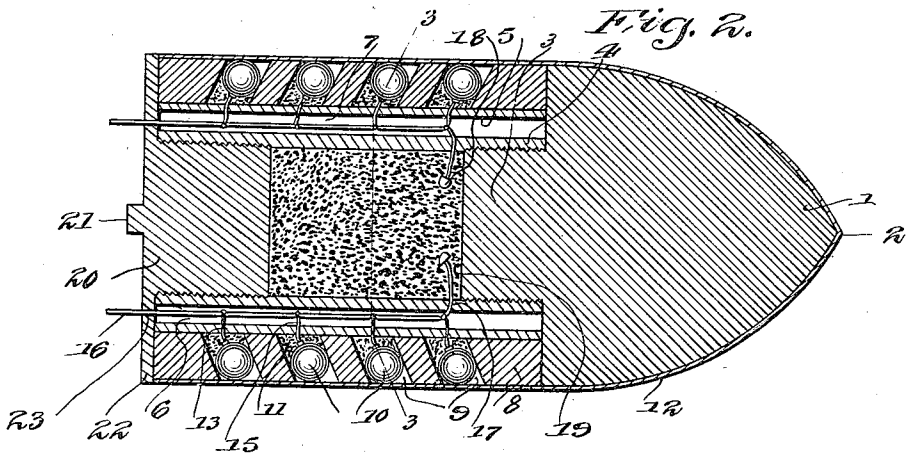


Fig. 1.

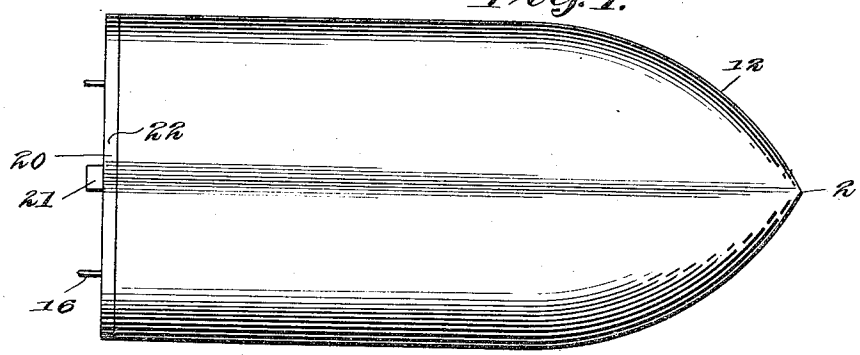


Fig. 4

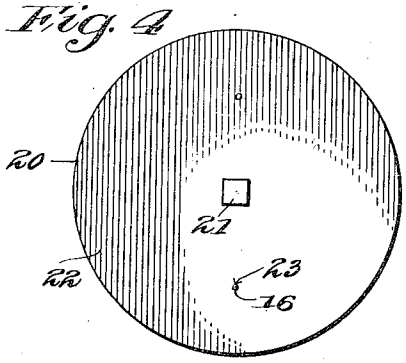


Fig. 3.

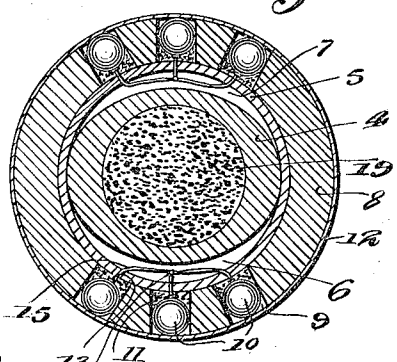
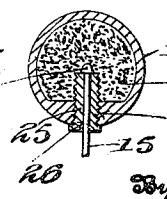


Fig. 5.



Witnesses

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PROJECTILE.

1,129,696. Specification of Letters Patent. Patented Feb. 23, 1915.

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To all whom it may concern:

Be it known that I, JOHN LOBENAT, a citizen of the United States, residing at Collinsville, in the county of Madison and State of Illinois, have invented new and useful Improvements in Projectiles, of which the following is a specification.

This invention relates to projectiles and in particular to those used in heavy ordnance, the primary object being to provide a projectile which is adapted to discharge a plurality of smaller projectiles radially thereform at intervals during its flight, the smaller projectiles bursting at predetermined times after being discharged and the major projectile finally bursting itself.

A further object of the invention is to provide a projectile of the character set forth which is constructed in such a manner that its parts may be assembled and adjusted readily and will, when united, present a structure which is nearly as rigid and non-yielding as if it were integral in construction.

The invention consists in the features of construction, combination, and arrangement of parts, hereinafter more fully described and claimed, reference being had to the accompanying drawing in which:

Figure 1 is a side elevation of the projectile constructed in accordance with the invention. Fig. 2 is a longitudinal sectional view taken through the same. Fig. 3 is a transverse sectional view on line 3—3 of Fig. 2. Fig. 4 is a rear elevation of the same. Fig. 5 is an enlarged detail view of the smaller projectiles.

In the drawing, the numeral 1 designates the solid metallic head of the projectile which is constructed preferably of iron or steel and provided with the usual pointed nose 2. The rear end of the head, which is circular in transverse section, is cut at right angles to its axis and is provided with a reduced external threaded extension 3. A metallic inner casing 4 has it forward end threaded onto the head extension 3 so as to extend rearwardly therefrom. The casing is interiorly cylindrical in form but exteriorly elliptical in section. A hollow cylindrical sleeve 5, which is not as thick as the casing 4, is adapted to fit snugly over the outer periphery of the casing and is equal in length to the same. Owing to the elliptical cross sectional contour of the casing 4, longitudinal passages or conduits 6 and 7 are provided in the opposite sides of the projectile between the outer periphery of the said casing and the inner periphery of the sleeve. An outer cylindrical casing 8 is fitted over the sleeve 5. This outer casing is constructed of metal, as are the other parts, and is comparatively thick and is provided with a plurality of radial openings 9 in alinement with the passages 6 and 7 separated therefrom by the sleeve 5. These openings 9 constitute firing chambers in the outer ends of which are the bullets 10 or other small projectiles, the inner end portions being adapted to contain charges of explosive material as indicated by the numeral 11. The frangible jacket 12 of tin or other readily penetrable material is fitted onto the outer periphery of the head 1 and the outer face so as to retain the projectiles 10 effectively within the firing chambers. A small opening 13 is provided in the sleeve 5 in communication with each firing chamber 9 to receive a branch fuse 15 which latter leads from the main fuse 16. The branch fuses are connected with the main fuse at predetermined longitudinally spaced points so that the explosive material 11 will be exploded at intervals during the flight of the projectile, thus discharging the bullets or small projectiles 10 therefrom. Each of the bullets 10 is provided with a threaded opening 24 for the reception of the screw element 25, the latter being provided with a longitudinal bore 26 extending entirely therethrough, and through which passes the branch fuse 15, the latter having secured on one end thereof a percussion cap 27. The bullets or small projectiles 10 are each filled with dynamite and are adapted to explode at predetermined intefvals after being discharged from the major projectile. The forward end of the main fuse extends into the interior of the inner casing through an opening 17 therein, where it is provided with a percussion cap 18. Explosive material 19 is adapted to be contained within the inner casing and to be retained therein by the base cap 20 which is threaded onto the rear end of the casing, a non-circular lug 21 being provided medially upon the outer face of the cap for the application of a wrench or other turning implement thereto, whereby the cap may be applied or detached. An annular flange 22 is formed exteriorly upon the lowermost end of the base cap for engagement with the rear edges of the casings

4 and 8, the sleeve 5, and the jacket 12 so as to clamp the sleeve and outer casing securely between the flange and the rear face of the head 1. Axial openings 23 are provided in the flange 22 in communication with the passages 6 and 7, through which the rear end of the main fuses 16 extend in order that they may be ignited when the projectile is fired from the gun. It will thus be seen that when the projectile is fired, the main fuses will be ignited and will burn slowly toward their inner ends. Consequently the axially spaced sets of branch fuses will be ignited at predetermined intervals and will promptly cause the explosion of the powder, dynamite or the like within the corresponding firing chambers 9 whereupon volleys of small projectiles 10 will be discharged at intervals during the flight of the major projectile. After the small projectiles have been discharged, the branch fuse will burn to the caps 27 causing the explosion of the dynamite contained within the said small projectiles 10. Finally, the main fuses will burn to the caps 18 and the large mass of explosive material 19 within the inner casing will explode, thus shattering the projectile as a whole and working further destruction to the foe.

What I claim is:—

1. A projectile of the class described, comprising a head having a pointed nose, a hollow inner casing extending rearwardly from the head and arranged concentric thereto, the outer periphery of said casing being constructed so that it is non-circular in transverse section, a cylindrical sleeve mounted upon the outer periphery of the said casing and provided with axially spaced openings registering with the passages formed between the sleeve and the inner casing, an outer casing mounted upon the outer periphery of said sleeve and having a plurality of longitudinally spaced openings therein in communication with the sleeve opening and constituting firing chambers, said firing chambers being adapted to receive explosive material and small projectiles, main fuses extending longitudinally within said passages, and branch fuses connected with the main fuses at spaced points and leading through the firing chambers into the small projectiles.

2. A projectile of the class described comprising a head having a pointed nose, a hollow inner casing extending rearwardly from the head and arranged concentric thereto, the outer periphery of said casing being constructed so that it is non-circular in transverse section, a cylindrical sleeve mounted on the outer periphery of the said casing and provided with axially spaced openings registering with passages formed between the sleeve and the inner casing, an outer casing mounted upon the outer periphery of the said sleeve and having a plurality of longitudinally spaced openings therein communicating with the sleeve opening and constituting firing chambers, said firing chambers being adapted to receive explosive material, and small projectiles, main fuses extending longitudinally within the said passages, branch fuses connected with the main fuse at spaced points and leading through the firing chambers into the said small projectiles, the latter being adapted to contain explosive material, the inner casing being adapted to contain explosive material and to receive the inner ends of the main fuses, and ignition means associated with the said ends of the fuses.

3. A projectile of the class described comprising a head having a pointed nose, a hollow inner casing extending from the head and arranged concentric thereto, the outer periphery of the casing being constructed so that it is non-circular in transverse section, a cylindrical sleeve mounted upon the outer periphery of said casing and provided with axially spaced openings registering with the passages formed between the sleeve and the inner casing, an outer casing mounted upon the outer periphery of the sleeve and having a plurality of longitudinally spaced openings therein communicating with the sleeve opening and constituting the firing chambers, the said firing chambers being adapted to receive explosive material and small projectiles, main fuses extending longitudinally within the said passages, branch fuses connected with the main fuse at spaced points and leading through said passages into said small projectiles, said small projectiles being filled with explosive material, and a frangible jacket mounted upon the outer periphery of the head of the projectile and the outer casing to shield the firing chambers.

4. A projectile of the class described comprising a head having a pointed nose, a hollow inner casing extending rearwardly from the head and arranged concentric thereto, the outer periphery of said casing being constructed so that it is non-circular in transverse section, a cylindrical sleeve mounted upon the outer periphery of the said casing and provided with axially spaced openings registering with the passages formed between the sleeve and the inner casing, an outer casing mounted upon the outer periphery of said sleeve and having a plurality of longitudinally spaced openings therein communicating with the sleeve opening and constituting firing chambers, the said firing chambers being adapted to receive explosive material and small projectiles, main fuses extending longitudinally within said passages, said small projectiles being filled with an explosive material,

branch fuses connected with the main fuses at spaced points and leading through the firing chambers into the said small projectiles, means associated with the outer ends of the branch fuses for igniting the explosive material within said small projectiles, the forward end of the inner casing being connected rigidly with the head, and a base cap adjustably connected with the rear end of the casing and having an annular flange upon its outer periphery for engagement with the rear edges of the outer casing of the sleeve.

5. A projectile of the class described comprising a head having a pointed nose, a hollow inner casing extending rearwardly from the head and arranged concentric thereto, the outer periphery of the said casing being constructed so that it is non-circular in transverse section, a cylindrical sleeve mounted upon the outer periphery of the said casing and provided with axially spaced openings registering with the passages formed between the sleeve and the inner casing, an outer casing mounted upon the outer periphery of said sleeve and having a plurality of longitudinally spaced openings therein communicating with the sleeve opening and constituting firing chambers, said firing chambers being adapted to receive explosive material in the small projectiles, main fuses extending longitudinally within said passages, said small projectiles being filled with explosive material, branch fuses connected with the main fuses at spaced points and leading through the firing chambers into said small projectiles, the forward end of the casing being connected radially with said head and its rear end being internally threaded, and a base cap threaded into the rear end of the inner casing and having an annular flange upon its outer periphery for engagement with the rear edges of the outer casing and the sleeve.

6. A projectile of the class described comprising a head having a pointed nose, a hollow inner casing extending rearwardly from the head and arranged concentric thereto, the outer periphery of the said casing being constructed so that it is non-circular in transverse section, a cylindrical sleeve mounted upon the outer periphery of said casing and provided with axially spaced openings registering with the passages formed between the sleeve and the inner casing, an outer casing mounted upon the outer periphery of said sleeve and having a plurality of longitudinally spaced openings therein communicating with the sleeve opening and constituting firing chambers, said firing chambers being adapted to receive explosive material and small projectiles, main fuses extending longitudinally within said passages, branch fuses connected with the main fuses at spaced points and leading through the fire chambers into the small projectiles, means on the outer ends of the branch fuses for igniting the explosive material contained in the said small projectiles, the forward end of the casing being connected rigidly with the said head and its rear end being internally threaded, a base cap threaded into the rear end of the inner casing and having an annular flange upon its outer periphery for engagement with the rear edges of the outer casing and the sleeve, and means by which the cap may be adjusted.

7. A projectile of the class described comprising a head having a pointed nose, a hollow inner casing extending rearwardly from the head and arranged concentric thereto, the outer periphery of the said casing being constructed so that it is non-circular in transverse section, a cylindrical sleeve mounted upon the outer periphery of said casing and provided with axially spaced openings registering with the passages formed between the sleeve and the inner casing, an outer casing mounted upon the outer periphery of said sleeve and having a plurality of longitudinally spaced openings therein communicating with the sleeve openings and constituting firing chambers, said chambers being adapted to receive explosive material and small projectiles, main fuses extending longitudinally within the said passages, branch fuses connected with the main fuses at spaced points and leading through the firing chambers into the said small projectiles for igniting the explosive material contained therein, the forward end of the inner casing being connected rigidly with the head, and a base cap adjustably connected with the rear end of the casing and having an annular flange on its outer periphery for engagement with the rear edges of the outer casing and the sleeve, the flange on the base cap being provided with openings communicating with the passages for the reception of the ends of the main fuse.

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

JOHN LOBENAT.

Witnesses:
JOHN W. DAVIS,
W. T. GERDING.