

(No Model.)

P. CUNNINGHAM.
DYNAMITE ROCKET.

No. 479,738.

Patented July 26, 1892.

FIG. 1.

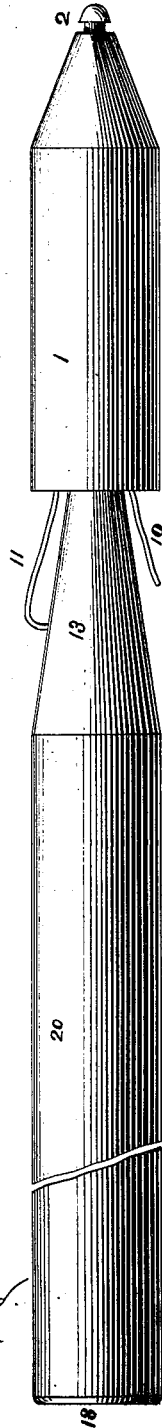
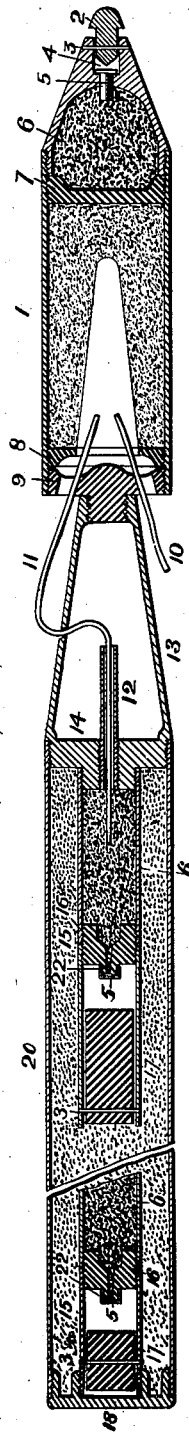


FIG. 2.



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DYNAMITE ROCKET.

SPECIFICATION forming part of Letters Patent No. 479,738, dated July 26, 1892.

Application filed June 24, 1891. Serial No. 397,295. (No model.)

To all whom it may concern:

Be it known that I, PATRICK CUNNINGHAM, a citizen of the United States, residing at New Bedford, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Dynamite Rockets, of which the following is a specification.

My invention relates especially to means and mechanism for throwing dynamite or other high explosives to a distance and for causing the same to explode either by a time-fuse or percussion or concussion, and has for its object the provision of a self-propelling projectile or rocket simple to construct, easy and safe to fire, and very effective in operation.

To attain the desired end my invention consists, essentially, in a rocket-head carrying in its apex a movable firing-pin, percussion-cap, and charge of explosive material, and in a tube forming the tail of the rocket a firing-charge connected to the rocket-head by a time-fuse and also with a percussion fuse or cap, and a movable weight adapted and arranged to strike the said cap, and a second exploding charge and percussion-fuse and exploder near the extremity of the tubular tail opposite to the firing-head, the said tube being arranged to receive the dynamite or other explosive, all of which will be hereinafter first fully described, and then pointed out in the claims.

In the drawings, Figure 1 is a longitudinal elevation of my dynamite rocket, and Fig. 2 is a longitudinal sectional view thereof.

Like numerals of reference wherever they occur indicate corresponding parts in both the figures.

1 is the rocket-firing head, made of any approved material and packed with composition in the usual manner. At the apex of the head of the rocket at 2 is a longitudinally-movable pin, having a hole therein for the passage of a safety-pin 3. This pin 3 is made of wood or equivalent material, which will break and permit the pin 2 to be driven inward when the end of the rocket strikes the ground or other object at the end of its flight.

4 is a passage in the upper extremity of the rocket-head, and 5 is a fulminate-cap which communicates with a charge 6 of explosive material.

7 is a top plate secured within the rocket-head.

8 is a choke-plate, and 9 is the back plug.

10 is the fuse for firing the rocket.

11 is a fuse communicating with the interior of the rocket-head and with a fuse-tube 12, fixed in the tube forming the tail of the rocket.

13 is a tapering head connected to the firing-head and to the tail-tube 20. This tube is designed to carry dynamite and means for exploding the same.

14 is a cross-bar or plug within the tube 20, carrying the fuse-tube 12.

15 is a tube mounted within tube 20 and carrying an explosive compound 6.

16 are interior blocks provided with nipples 22, arranged to carry fulminate-caps 5.

17 17 are weights arranged to slide in tube 15, but normally held in place by breakable pins 3, as above explained for the pin 2.

18 is a closing-plate at the extremity of the tube 20.

When constructed and arranged in accordance with the foregoing description, the operation of my device is as follows: The rocket is placed in any convenient position for firing and the fuse 10 ignited. The rocket starts with an easy movement and in such a manner as not to jar or disturb the dynamite until the same is carried to the point where it is desired that the explosion should take place.

As the rocket composition begins to burn, the fuse 11 is ignited and burns a predetermined time, at the expiration of which time the fuse ignites the explosive material with which it is connected, causing an explosion, and this explosion explodes the dynamite or other high explosive, with which its tubular tail is loaded.

I do not rely upon this means alone for exploding the dynamite, but provide three separate and distinct independent additional means for causing the explosion by means of percussion or concussion. The first is in the apex of the rocket-head.

When said head comes in contact with soft earth or other object, the pin 3 will break, permitting the piece 2 to be driven inward against the cap, exploding the charge in the apex of the rocket-head. In case the rocket should strike in a slanting direction this means of causing the explosion

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might fail, and to provide for such a contingency I have furnished the movable weights or hammers 17. When the rocket strikes, the pins 3 in the tube 15, holding said weights in place, will be broken and the weights released; but their momentum will cause them to be driven forward against the fulminate-caps, and thus the explosion of the material carried by the tube forming the rocket-tail is insured.

Having now fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. The combination, with a self-propelling projectile or rocket, of a tube forming the tail of the rocket, adapted and arranged to carry explosives, percussion firing devices connected with an explosive-chamber of the device, firing weights or hammers adapted to be actuated by the arrest of the flight of the rocket, and a time-fuse connecting the rocket-chamber with the explosive-chamber, arranged substantially as shown and described.

2. The combination, with a self-propelling projectile or rocket having a rearwardly-open propelling-chamber charged with a gradually-

burning propelling compound, of a tube forming the tail thereof, arranged for carrying explosives, and a time-fuse connected therewith and with the rocket-propelling chamber, substantially as shown and described.

3. The combination, with the rocket having a rearwardly-open chamber charged with a gradually-burning propelling compound, an explosive carried in the apex of the rocket-head, and means for exploding the same, operated by the arrest of the flight of the rocket, of the tubular tail and an explosive carried thereby, substantially as set forth.

4. The combination, with a self-propelling projectile or rocket having a rearwardly-open chamber charged with a gradually-burning propelling compound, of a receptacle for explosive, forming the tail of the rocket, and a percussion or concussion piece and cap communicating with and adapted to fire the explosive, arranged substantially as shown and described.

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