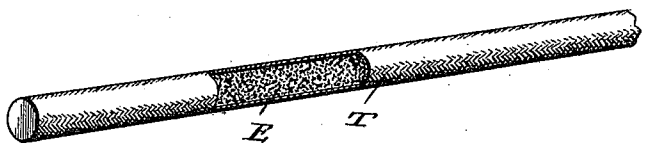
(No Model.)

J. W. GRAYDON.

HIGH EXPLOSIVE CHARGE.

No. 399,878. Patented Mar. 19, 1889.

Fig. 1.



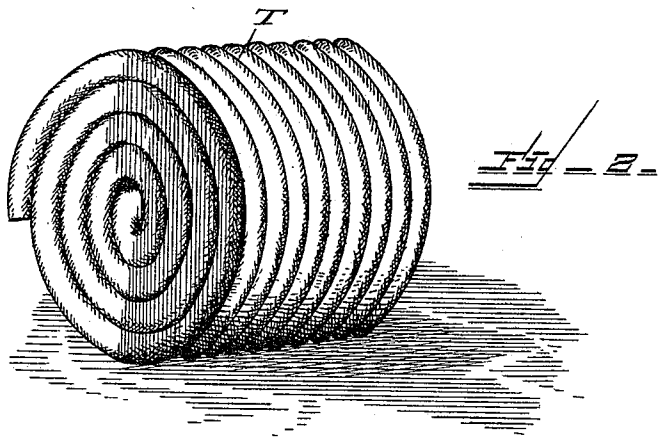


Fig. 2.

Witnesses.
Albert Speiden.
Robert Owens.

Inventor,
James Weir Graydon
By his Attorney,
W. Hunter Myers

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

JAMES WEIR GRAYDON, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO ROBERT SOUTHWORTH LAWRENCE, OF LONDON, ENGLAND.

HIGH-EXPLOSIVE CHARGE.

SPECIFICATION forming part of Letters Patent No. 399,878, dated March 19, 1889.

Application filed October 9, 1888. Serial No. 287,630. (No specimens.)

To all whom it may concern:

Be it known that I, JAMES WEIR GRAYDON, a citizen of the United States of America, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in High-Explosive Charges for Projectiles, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention contemplates an improved high-explosive charge for projectiles designed for torpedo or artillery use. It will first be described in connection with the accompanying drawings, and then clearly pointed out in the claims.

Figure 1 of the drawings is a perspective view, partly broken out, of my improved charge uncoiled. Fig. 2 is a perspective view of the charge coiled, as when in the projectile.

It is well known that all high explosives having nitro-glycerine for a base—such as dynamite—are liable to explode when subjected to a slight shock or little friction, and this characteristic renders them very inconvenient to handle in bulk, because of the extreme caution that must be exercised. By my invention I produce a high-explosive charge capable of being safely handled with the greatest facility and convenience, and one which can be made fully as effective as if the dynamite or other like material were placed in the projectile in bulk.

In carrying out my invention I first separate from the mass the quantity of dynamite or other high explosive, E, requisite for a charge, and inclose it in a flexible absorbent tube, T, about one-quarter inch in diameter, the length of the tube in this case depending on the quantity of explosive; but if the charge is to be very large it may comprise several tubes without in the least departing from the spirit of my invention. I prefer to make the tube of cotton cloth, although any other material which will not break in handling and which is also flexible and a good absorbent will answer. When the charge thus prepared is wanted for immediate use, I saturate the tube with nitro-glycerine or other active gas-producing agent until it has absorbed all it will hold, when the charge is ready to place in the projectile, which is done by coiling it within the charge-chamber. By saturating the tube with a gas-producing agent I convert it into an active explosive, and thus avoid giving up a considerable portion of the charge-chamber to a non-explosive substance.

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

1. A high-explosive charge for torpedo or artillery use, consisting of a quantity of high-explosive material inclosed in a flexible tube which is itself an explosive, the tube being laid in coils, substantially as described.

2. A high-explosive charge for torpedo or artillery use, consisting of a quantity of dynamite or other high explosive inclosed in a flexible tube rendered explosive by the application thereto of an active gas-producing material, the tube being laid in coils, substantially as described.

3. A high-explosive charge for torpedo or artillery use, consisting of a quantity of dynamite or other high explosive inclosed in a flexible absorbent tube saturated with nitro-glycerine and laid in coils, substantially as described.

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

JAMES WEIR GRAYDON.

Witnesses:
WM. HUNTER MYERS,
CHARLES F. ROBERTS.