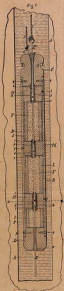


J.S. Morris Torpedo.

No. 50924

Patented Nov. 20, 1888



Witnessed.

John H. Morris
Sept 27-88

Inventor.

John H. Morris
by J. H. Morris & Co., atty

United States Patent Office.

IMPROVED TORPEDO.

JOSIE S. MORRIS, OF BUFFALO, NEW YORK.

Letter Patent No. 10,000, dated November 10, 1900.

SPECIFICATION.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOSIE S. MORRIS, of the city of Buffalo, in the county of Erie, and State of New York, have invented certain new and useful improvements in Torpedoes; and I do hereby declare that the following is a full, and exact description thereof, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a longitudinal vertical section of my improved torpedo as represented in a well, and

Figure 2 is a cross-section of the same in the plane of line *x-x*.

Like letters designate corresponding parts in both figures.

My improvement consists in the use or employment of a straight friction roll or wire passing longitudinally through the torpedo, and armed with touch, or otherwise roughened, at different portions of the same, in combination with corresponding fuses or detonating tubes, by which the powder or other explosive substance may be ignited at several places at the same time. Also the manner of securing the fuse within the shell of the torpedo, and the peculiar construction of the frame or plug for closing the ends of the shell, in combination with wax or other suitable material for packing around the friction roll.

In the drawings A represents the lower portion of an oil well filled with water, B the shell or case of the torpedo, C the upper wall D the lower plug for covering the ends of the same, E is a roll or wire, extending longitudinally through the same, furnished or (preferably) made triangular in cross-section at the different portions *e-e*, and roughened or provided with teeth, the bottom of which causes the ignition of the detonating powder or other compound contained in the fuses or detonating tubes *f-f*. These flattened or triangular portions, as in some in which or also in a direction opposite to that of the intended motion, so that each tooth will necessarily act upon the friction composition as the roll is drawn or forced through it. The fuses *f-f* consist of short tubes, (preferably slightly conical,) closed at one end except a hole for the passage of the friction roll E, and open at the other, through which the detonating or other friction composition, *g*, is first inserted; and then I prefer to fill the remainder of the tube with the same or the powder *h*, enclosing it within the bottom by means of a canvas or other easily ignited wrapping *i*, by which means the lining of the powder *h* with which the shell A is filled is rendered absolutely certain. Of these fuses there may be any number required, according to the length of the case or portion required, so that the same may be ignited at a sufficient number of places to insure the instantaneous explosion or combustion of the entire quantity. By this arrangement a large amount of powder is saved and utilized, which in torpedoes fired as only one piece, as is ordinarily done, would be unnecessary and immediately become lost and wasted, and, as a consequence thereof, the explosive and lethal and effects are proportionally greater. The fuses are secured in position by being inserted in slots of wood B B, fitting transversely the shell A, and which are maintained in their relative position by being fastened to longitudinal plates or stays I I. The whole may then be introduced into the case, and secured in proper place by means *j-j*; or it constructed as shown, the plugs C D would enclose them sufficiently without the stays. The plugs C D, I prefer to make of wood or some of their harder cleavages; and they may be prepared as so to be impervious to wet by being or being coated with a suitable material, or in any other desired manner. They are constructed as shown, and the ends, after being properly fitted, and dipped in any suitable preparation for rendering the joint tight, are drawn or otherwise forced in, and then fastened by screws *p-p*. At the outer end of each plug the hole through which the friction roll passes is enlarged, as represented, forming a cone, into which wax or any suitable fluid may be poured, so as to render the passage water-tight, and still leave the end capable of being easily slid through the same, as required in exploding the apparatus. The upper plug C is provided with a collar or groove, *k*, in which a "nut-bolt" or other suitable device may engage when from any cause it is required to raise the torpedo, and the ring or cap *l* and caps *j*, by which it is lowered down, passes longitudinally for the purpose. The powder may be introduced at one end, after the other parts are inserted, and then closed by the plug; or it may be filled in through a hole in C or D made for the purpose.

The apparatus may be exploded by three different methods, viz:

First, by extending the friction-rod a short distance below the lower plug, as shown, so that, as the torpedo is descending, the end of the roll will first strike the bottom of the well, when the weight of the apparatus will force the twisted portions *i* through the detonating powder, causing its explosion.

Barrel, a cord, or wire, &c., may be extended from the upper end of the friction-rod to the top of the well, and the thing effected by giving the work, after the torpedo has reached the bottom, a sudden jerk or pull upward.

Third, the frame may be inverted, and the explosion accomplished by dropping a weight, guided by a wire or cord attached to the friction-rod and passing through the weight, which strikes the end of the cord and sets off the explosion.

If desired the friction-rod may be constructed with a tapered portion above each fuse, so as to act in an opposite direction from the one before, so that any two or all three of the above methods may be employed with the same torpedo, as required, which would render the firing certain.

In addition to the advantages already enumerated, I would call attention to the following:

The extreme simplicity of the various parts of my improved torpedo and its cheapness of construction. Constructing the wooden portions a triangular or cross section, as shown in fig. 2, presents three friction edges instead of two, which renders the operation more certain. Firing the torpedos at different places by fuses arranged in a straight line and exploded by the same straight rod at the same instant not only effects the great saving and increases the beneficial results, but it is also a most simple arrangement, which enables the apparatus to be exploded by either of the three methods before specified and without the aid of complex mechanism. The arrangement of the parts B I with the descending valve enables the latter to be easily moved in place and maintained in their proper relative position within the case A.

What I claim as my invention, and desire to secure by Letters Patent, is—

A blasting cartridge or torpedo, constructed substantially as described.

I also claim the blocks H and valve K, in combination with the descending valve L, by which the latter are moved in place, and maintained in their proper relative position within the case A, substantially in the manner specified.

I also claim constructing the plug G B, with the hole for the friction-rod enlarged at the outer end, when used in combination with wax, or other suitable substance for packing the same, and also constructing the frame with the grooves A, all arranged and operating substantially in the manner and for the purpose described.

JOHN S. MOORE.

Witness:

Jas. H. Gray,

Attorney at Law.