

A. HAMAR.

Improvement in Torpedoes for Wells.

No. 128,222.

Patented June 25, 1872.

Fig. 1.

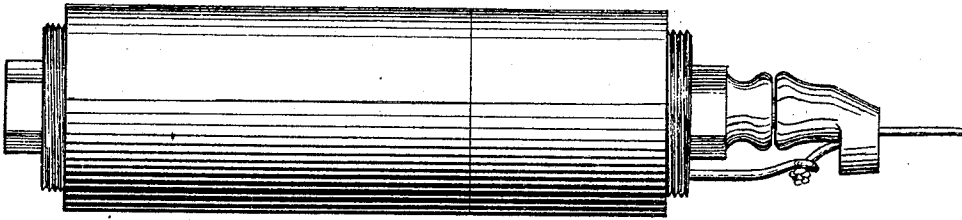


Fig. 2.

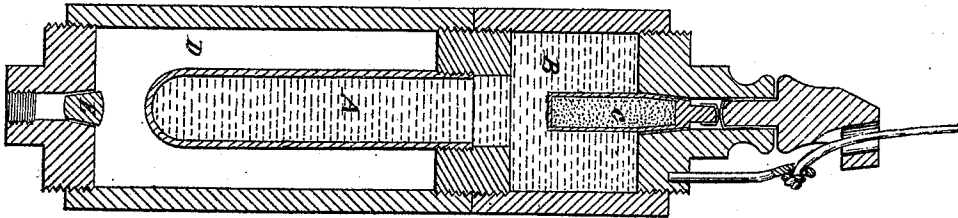


Fig. 3.

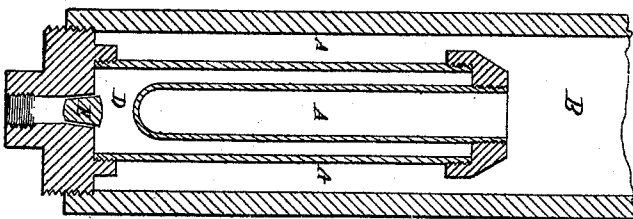


Fig. 5.

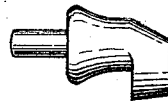


Fig. 4.



Witnesses:

J. C. Brecht.

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UNITED STATES PATENT OFFICE.

ALEXANDER HAMAR, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN TORPEDOES FOR WELLS.

Specification forming part of Letters Patent No. 128,222, dated June 25, 1872.

To all whom it may concern:

Be it known that I, ALEXANDER HAMAR, of No. 524 Walnut street, Philadelphia, Pennsylvania, have invented certain Improvements in Torpedoes for Artesian, Salt, or Oil Wells, of which the following is a specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a view in elevation of my improved torpedo; Fig. 2, a vertical section, showing a torpedo constructed with a longitudinal charge-chamber; Fig. 3, a similar view, showing an annular compression-chamber interposed between the compartments of the charge-chamber; Fig. 4, side and end views of the striker; and Fig. 5, a view of the firing-pin, detached.

The first part of my invention consists in constructing the striker or sinker with spiral grooves to cause it to rotate during its descent, experience having demonstrated that this rotation causes more rapid movement, and thus gives increased momentum to the blow of the striker on the firing-pin. The next part of my invention consists in constructing the striker in longitudinal sections, so that they may be bound upon the lowering cord when the torpedo is in position, instead of the cord sliding through the striker, which has sometimes caused serious accidents by a knot jerking the striker from the hands of the workmen and causing premature explosion. This liability is obviated by my improvement, as the sinker need not be attached until the torpedo is in position. The next part of my invention consists in combining in a torpedo a charge-chamber, constructed with concentric compartments, with an interposed chamber containing compressed air, whereby an explosion of greater effectiveness is obtained by supplying oxygen to support combustion in both compartments of the chamber.

My improved torpedo is, by preference, constructed in the form shown in the drawing. A casing is provided with an inlet, E, for the air to be compressed, and with a valve, e, opening inward to retain the compressed air within the chamber D, which projects into the

charge-chamber A, divided into concentric compartments between which the chamber D is interposed. A perforated tube, C, to contain fulminate projects into the upper portion B of the charge-chamber, and thus instantaneously ignites the charge fired. The sinker or striker, Fig. 4, is constructed, in this instance, in two longitudinal sections, and provided with annular grooves at its ends, to receive a binding-cord or wire, to secure its sections together upon the lowering-cord. The striker has, likewise, one or more spiral grooves on its exterior, which causes it to rotate as it descends through the fluid in the well, as herebefore explained. The striker, Fig. 5, rests in a passage in the casing, with its point bearing lightly upon the cap of the fulminate. A rope or lowering-cord, attached to the top of the casing on one side of its center passes through an eye in the handle of the firing-pin, the eye likewise being one side of the center; by this means the firing-pin is readily secured to the rope on which the striker descends.

I am aware that for more than twenty years torpedoes have been fired in artesian and salt-wells in Austria, Styria, and Algeria to increase their productiveness, and that such operations are described in old scientific works; I, therefore, limit my claims to the mechanical devices employed by me in carrying out this old principle.

I claim as my invention—

1. The striker, constructed as described, with spiral grooves on its surface to rotate it during its descent, and thus increase its momentum.
2. The striker, constructed as described, of longitudinal sections, to enable it to be attached to the lowering-rope.
3. The combination, in a torpedo for wells, of a charge-chamber divided into compartments, and a compressed air-chamber interposed between the compartments of the charge-chamber, substantially as set forth.

A. HAMAR.

Witnesses:

EDM. F. BROWN,
H. B. MUNN.