J. DOUGLASS.

Torpedo for Oil-Wells.

No. 211,385. Patented Jan. 14, 1879.

Fig. 1.

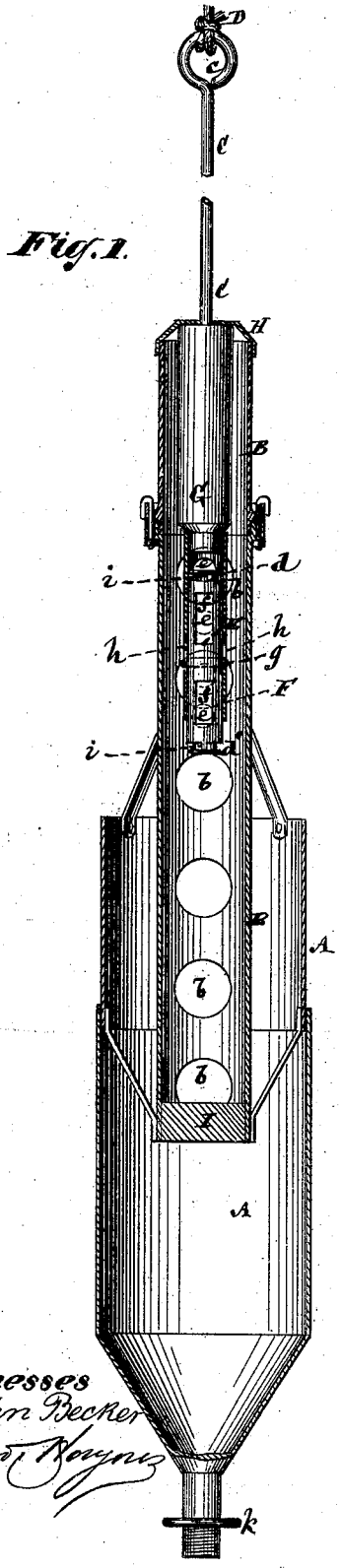
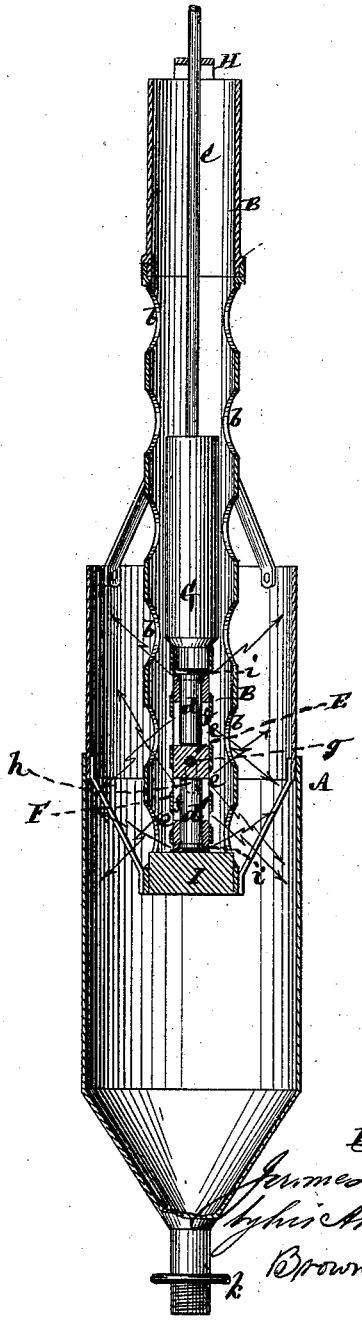


Fig. 2.



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JEROME DOUGLASS, OF JEFFERSON, PENNSYLVANIA.

IMPROVEMENT IN TORPEDOES FOR OIL-WELLS.

Specification forming part of Letters Patent No. **211,385**, dated January 14, 1879; application filed June 8, 1878.

To all whom it may concern:

Be it known that I, JEROME DOUGLASS, of Jefferson, in the county of Clarion and State of Pennsylvania, have invented certain new and useful Improvements in Torpedoes for Oil-Wells and other purposes, of which the following is a description, reference being had to the accompanying drawing, forming part of this specification.

The invention consists in the combination of an outer shell having a perforated inner tube, a drop-weight, and a perforated cartridge-holder adapted to hold a cartridge in each end, and supported entirely above the mouth of the outer shell, a perforated tube surrounding the cartridge-holder, and an anvil supported within the outer shell, as more fully hereinafter specified.

In the accompanying drawing, Figure 1 represents a longitudinal section of my improved torpedo, with its parts in position prior to exploding the charge or while the torpedo is being lowered into the well. Fig. 2 is a longitudinal section in a plane at right angles to Fig. 1, with the parts in position when the torpedo is being exploded.

A is the shell of the torpedo, into which the nitro-glycerine or other explosive material is introduced. B is a tube or case entering to any suitable distance down within the shell and projecting up through or above the latter. This tube, which is in communication by lateral apertures *b* with the interior of the shell and with the outside of the torpedo above the shell, and also holds the explosive material within it, forms the case for the weight and movable device within the torpedo for exploding the shell. C is a rod for lowering the torpedo into the well by means of a cord or line, D, attached to said rod by an eye, *c*. E is a double or upper and lower ended cartridge-holder having upper and lower cartridges, *d d'*, within it. This cartridge-holder is freely or loosely contained, so as to admit of an independent up-and-down movement of it within a tube, F, having lateral perforations *e*, and attached to or immovably connected with the weight G, which serves to explode the cartridge. Such connection of the cartridge-holder E, which has also lateral openings *f* in it, is or may be established by means of a wire, *g*, passing through upright slots *h* in the perforated tube F and through the cartridge-holder. The cartridges *d d'*, which are here shown as rim-fire ones, are introduced into opposite ends of the holder E, and rest at their rims against lugs or projections *i i* on the upper and lower ends of the tube F.

The lowering-rod C has attached to it the weight G, and the upper end of tube B is provided with a bail, H, which rests on the weight G when the torpedo is suspended by the cord D before or while lowering it into the well.

Attached by a screw-thread or otherwise to the lower end, K, of the shell is an anchor, that strikes or rests on the bottom of the well, which anchor may be a simple tube.

The operation of the torpedo is as follows: When the torpedo is lowered, so that its anchor strikes or rests upon the bottom of the well, the line or cord D is slackened, and the weight G drops, which causes the lower cartridge, *d'*, to strike on an anvil, I, at the lower end of the tube B, and, by means of the pin or wire *g* and upright slots *h* in the perforated tube F causes the upper cartridge, *d*, to strike or be struck by the weight G, thus exploding both cartridges at or near the same time and firing the exploding material in the shell A and tube B.

The case or tube B is made with a detachable upper section to provide for the insertion of the weight G and cartridge-holder E.

By this construction and combination of devices the exploding weight and cartridge-holder are supported above and out of the explosive material while filling the torpedo and lowering it, and are effectually prevented from entering the shell in advance of the torpedo reaching the bottom of the well.

I claim—

The combination, in a torpedo for oil-wells having a casing, A, for the nitro-glycerine, and a central tube, B, communicating therewith by lateral apertures *b*, and provided with an anvil, I, at its lower end, the cartridge-holder E, consisting of a laterally-perforated tube attached to the weight G by means of the wire *g* passing through the slots *h*, whereby, when the weight descends, the cartridges contained in the holder are fired in rapid succession, substantially as specified.

JEROME DOUGLASS.

Witnesses:

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