W. HAUS.

Torpedo for Oil-Wells.

No. 203,034. Patented April 30, 1878.

Fig. 1

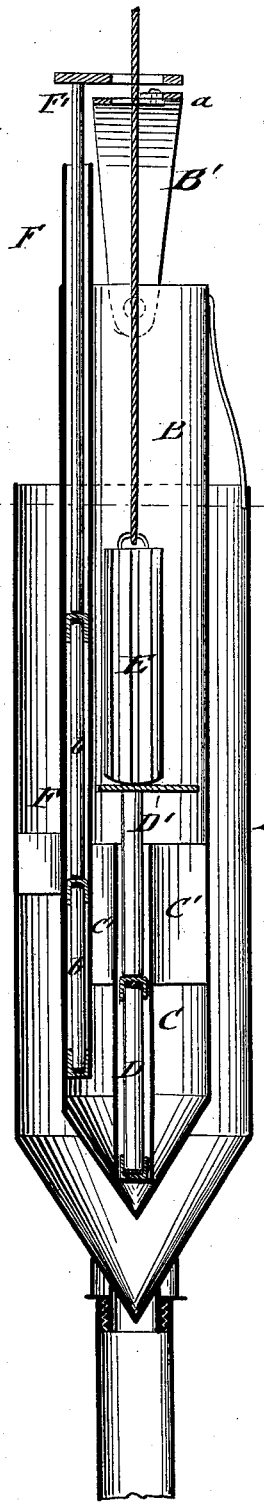


Fig. 2

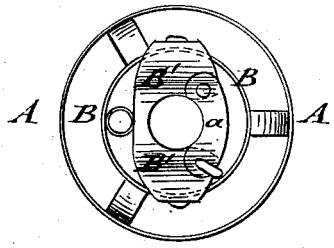
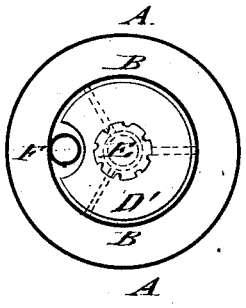


Fig. 3



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WILSON HAUS, OF CHURCH P. O., PENNSYLVANIA.

IMPROVEMENT IN TORPEDOES FOR OIL-WELLS.

Specification forming part of Letters Patent No. **203,034**, dated April 30, 1878; application filed February 5, 1878.

To all whom it may concern:

Be it known that I, WILSON HAUS, of Church P. O., in the county of Clarion and State of Pennsylvania, have invented a new and Improved Oil-Well Torpedo, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical central section of my improved oil-well torpedo; and Figs. 2 and 3 are, respectively, a top view and a horizontal section of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to an improved oil-well torpedo for opening the lower parts of well-holes, whether they are filled with fluid or dry, the torpedo having a supplementary exploding attachment, so that the torpedo may be exploded, even when the regular caps fail, without drawing the shell out of the well.

The invention consists of an oil-well torpedo having an interior exploding-shell and an exterior shell filled with a sawdust or paper mixture.

The interior shell has a loose guide-tube for the capped exploder and for the anvil-rod that is forced down by the dropping of the fluted weight. A pivoted guard-piece of the bail admits the insertion of the weight after the inner shell is filled with glycerine. A supplementary exploder with interior capped rods, and a second anvil extending above the bail, serve to explode the torpedo by dropping a weight from above, in case the regular exploder fails to do its work.

Referring to the drawing, A represents the outer cylindrical shell, and B the inner shell, that is filled with nitro-glycerine and extended about half-way down, more or less, into the outer shell, and rigidly secured by inner radial and top stays. The space between the outer and inner shells is filled with sawdust, or with sawdust and brown paper or other mixture, so as to increase the smoke and heat in the well. At the interior of the inner shell is placed a short guide-tube, C, that is steadied by radial wings C′, so as to retain its position in the shell. A small exploding-rod, D, with caps at both ends, is inserted into the guide-tube C, and on the same placed the rod of the anvil-plate D′.

The anvil-plate D′ is struck by a drop-weight, E, that is fluted at the side, so as to pass easier through the nitro-glycerine. The force of the dropping weight explodes the caps in the guide-tube C, and thereby the shell.

At the upper end of the inner shell is a pivoted bail, B′, that has a central perforation for the suspension line or wire of the weight, and a pivoted guard-piece, *a*, that may be opened for removing or inserting the weight. This admits the inserting of the weight after the shell is filled, and also the removing of it with perfect safety. At the inside of the inner shell is further arranged a second fixed guide-tube, F, of greater length, into which one or more small rods, *b*, with percussion-caps, and also the rod of a second anvil, F′, are inserted, which latter is supported above the bail B′, and provided with a perforation for the passage of the line of the drop-weight.

Should, for some reason or other, the caps of the central exploding device fail to go off, the torpedo may be exploded directly from the top of the well by dropping a weight, which, by striking the second anvil, explodes the caps of the longer guide-tube, and thereby the nitro-glycerine, without necessitating the drawing of the torpedo out of the well for recapping. Thus a safer and more reliable shell is obtained.

The torpedo is supported on an anchoring-rod at suitable distance from the bottom of the well, the socket of the anchoring-rod being screwed to the lower end of the outer shell in the customary manner.

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

1. An oil-well torpedo having exterior and interior shells, the former filled with sawdust, and the latter having a loose guide-tube for the cap-exploder, and an anvil-rod that is forced down by the dropping of a weight, as shown and described.

2. In an oil-well torpedo, the charged shell B, having a pivoted bail, B′, with center hole and recess, and a pivoted guard or closing device for inserting or removing drop-weight from shell, substantially as described.

WILSON HAUS.

Witnesses:

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SIGMUND WARSHING.