H. L. FRANKLIN.

WELL SHOOTING TORPEDO.

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1,270,719. Patented June 25, 1918.

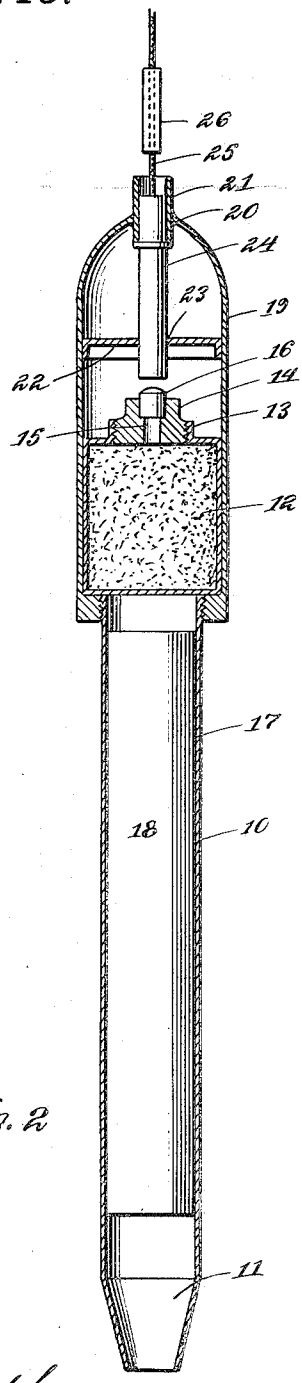
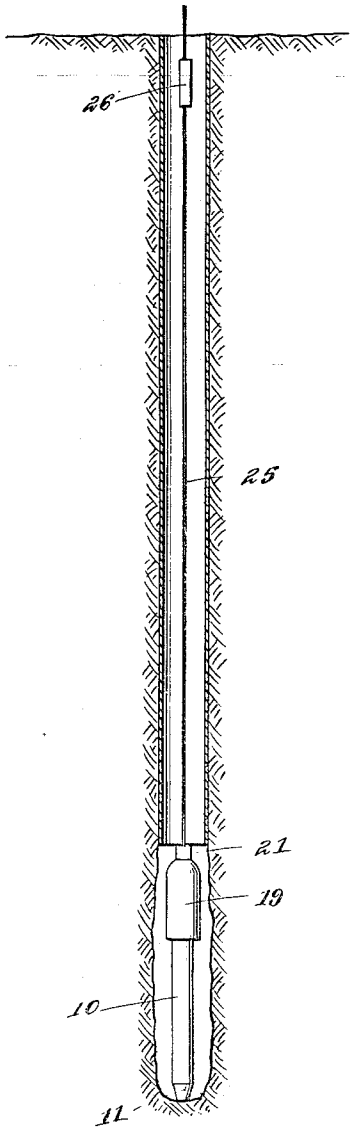


Fig. 2

Fig. 1



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UNITED STATES PATENT OFFICE.

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WELL-SHOOTING TORPEDO.

1,270,719. Specification of Letters Patent. Patented June 25, 1918.

Application filed October 29, 1917. Serial No. 198,963.

To all whom it may concern:

Be it known that I, HENRY L. FRANKLIN, a citizen of the United States, residing at Goose Creek, in the county of Harris and State of Texas, have invented new and useful Improvements in Well-Shooting Torpedoes, of which the following is a specification.

This invention relates to torpedoes of the type used in "shooting" wells, the object being to provide a torpedo which will be especially useful in the removal of casings from wells.

The invention therefore contemplates the provision of a torpedo which may be lowered into a well to a desired depth and fired by a weight dropped from above, guiding means being employed for directing the weight in contact with the firing pin or hammer.

A further object is to provide a novel form of hammer provided within the torpedo casing and having extending therefrom a guiding element for the weight, thereby insuring contact of the weight with the hammer to render positive the explosion of the torpedo.

A still further object is to provide a simple means of securing a concussion cap or explosive bullet within the torpedo and in line with the hammer, the said means consisting of providing an opening or seat within the closure for the firing chamber, this opening being in communication with the said chamber.

The invention further consists of the following novel combination and arrangement of parts, hereinafter more fully described and illustrated in the accompanying drawings, in which—

Figure 1 is a section of a well having a well casing therein and showing a torpedo in position within the well casing ready for firing; and

Fig. 2 is an enlarged vertical sectional view of the same.

Referring more specifically to the drawings, the numeral 10 designates the casing of a torpedo, which is preferably formed of a metal pipe and is tapered at one end as shown at 11 to facilitate its insertion within the well casing.

The opposite end of the casing is enlarged as shown at 12 to form a chamber for the reception of a high explosive, such as powder or the like. This chamber is formed with a filling opening 13, in which there is provided a closure 14, by means of which the firing charge is held within the chamber. The closure 14 is formed with an opening 15, in which is adapted to be seated a concussion cap or bullet 16, the opening 15 being in communication with the chamber 12, so that by exploding the cap 16 the firing charge will be ignited.

The restricted portion of the torpedo casing 10 forms a chamber 17 for the reception of the explosive charge, which is preferably in the form of a stick of dynamite 18.

Removably secured to the outside of the chamber 12 by means of screw threads or by any other desired means is a frame 19, one end of this frame being provided with an opening 20, in which is seated a guiding sleeve 21. Extending transversely across the frame 19 is a guide 22, having an opening 23 therein alining with the sleeve 21. Mounted for longitudinal movement within the sleeve 21 and the opening 23 is a firing pin or hammer 24, this hammer being located in a line with the opening 15 of the concussion cap, so that a sharp blow upon the hammer 24 will cause the concussion cap to ignite the firing charge within the chamber 12.

Secured to the hammer 24 and extending through the sleeve 21 is a flexible guiding element in the form of a wire 25, which is adapted to extend upwardly from the top of the well when the torpedo is in position within the well casing. Mounted for sliding movement along this wire is a weight 26, which when dropped in the position shown in Fig. 1 of the drawings will strike the hammer 24 to fire the concussion cap and explode the charge 18.

This is especially useful in the removal of the casing from wells that have been sunk and found to be dry, considerable difficulty being experienced in the removal of these casings. By the use of the torpedo above described the removal of these casings is rendered comparatively easy.

Having described the invention, what is claimed is:

1. In a torpedo of the class described, a casing, an explosive charge and a fire charge therein, a percussion cap, a hammer positioned for longitudinal movement within said casing having contact with the percussion cap, means for limiting the outward movement of the hammer, a guiding element

secured to said hammer and a weight slidable along the guiding element for contact with the hammer.

2. The combination with a torpedo including a casing provided with a sleeve at one end thereof, of a hammer mounted for sliding movement within said casing and guided within said sleeve, a flange carried by the hammer and engageable with the sleeve to limit its movement in one direction, a guiding element secured to the hammer and a weight slidable along the guiding element for contact with the hammer.

In testimony whereof I affix my signature.

HENRY L. FRANKLIN.