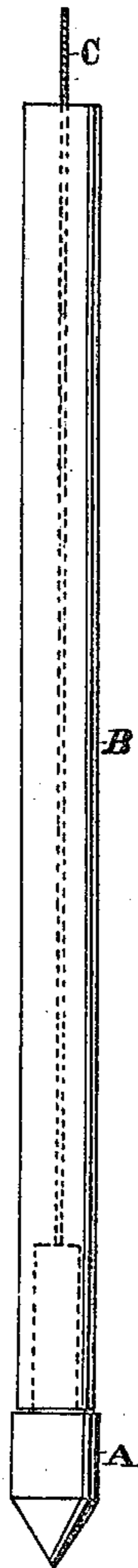


L. J. Le CONTE.

DEVICE FOR PLACING SUBMERGED BLASTS.

No. 185,447.

Patented Dec. 19, 1876.



Witnesses

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UNITED STATES PATENT OFFICE.

LOUIS J. LE CONTE, OF OAKLAND, CALIFORNIA.

IMPROVEMENT IN DEVICES FOR PLACING SUBMERGED BLASTS.

Specification forming part of Letters Patent No. 185,447, dated December 19, 1876; application filed October 7, 1876.

To all whom it may concern:

Be it known that I, LOUIS JULIAN LE CONTE, of the city of Oakland, county of Alameda, and State of California, have invented an Improvement in Locating Submerged Blasts; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates to a novel device for locating blasting-charges, whatever may be their character, at points below the surface of the earth or water, or in other places inconvenient of access.

Referring to the accompanying drawings for a more complete explanation of my invention, the figure is a view of my device.

A is a shoe, of any suitable material, made pointed, so as to be driven into the earth or substance in which the charge is to be deposited. The upper end of this shoe has a shoulder, upon which a suitable tube, B, fits, and by means of this tube the shoe is driven into the earth, clay, soft rock, sunken piles, or whatever else it may be desired to disintegrate.

Where black powder is to be used the charge may be lowered into the tube so as to rest upon the shoe, and the water or other tamping is then introduced, after which the blast is fired, by time-fuse or electricity, as each case may require. Where giant-powder, or any of that class of explosives, is to be used, a great saving may be obtained by using a detachable shoe-blast, and more particularly where there are a series of charges to be fired simultaneously.

In such cases where ground is soft the cartridge, containing two or three caps, is permanently attached to the shoe, the shoulder of which fits loosely into the lower end of the tube B. A line, C, is attached to the shoe, and is carried up along the tube, so as to temporarily hold the shoe and tube together—that is, until the shoe has been lowered so that its point rests upon the surface into which it is to be driven.

When it has been driven into its proper position the pipe B is withdrawn, and the blast remains attached to the shoe. In this manner a whole series or "crop" of blasts are planted, and when the last one has been driven, the pipe is allowed to remain, so that

the exploding-primer may be introduced and fired, and the discharge of this one will cause the entire series to explode by concussion, even though separated a considerable distance. By this means I accomplish a great saving in the amount of piping destroyed.

Where ground is hard the hollow pile is first driven, and the cap-cartridges then introduced, whereby all danger is avoided. The chief application of my device, where black powder is used, is in the removal of heavy and massive obstacles, where it is desirable to upheave and throw the same completely away without shattering. For example, in removing old sunken crib-works, &c., where the more powerful explosives, as giant-powder, are employed, my device is designed to remove piles along the water-front of cities, and it can be extensively used for breaking up hard ground to facilitate dredging.

The present method of removing piling is to withdraw such piles as can be removed by power of flotation; but all the broken ones or old stumps must be driven down by means of a socket-pile fitting upon their upper ends, which renders this work very costly and slow.

In using my device I drive my shoe, with its cartridge, into or near each submerged pile, and then explode the whole series at once. Dredging in hard-pan has hitherto been accomplished by boring a number of holes with post-augers, clearing them with a sand-pump, and introducing the cartridges, which are then exploded to loosen up the mass; but it will be readily seen that by my device the work can be very expeditiously done, as it is only necessary to drive any number of shoes with their attached cartridges.

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

The device herein described for locating or placing blasts, the same consisting of the shoe or point A, in combination with the driving-pipe B, or its equivalent device, substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand and seal.

LOUIS J. LE CONTE. [L. S.]

Witnesses:

OLWYN T. STACY,
FRANK A. BROOKS.