H. T. JONES.

METHOD OF SINKING PILES.

APPLICATION FILED SEPT. 2, 1913.

1,173,355.

Patented Feb. 29, 1916.

Fig. I.

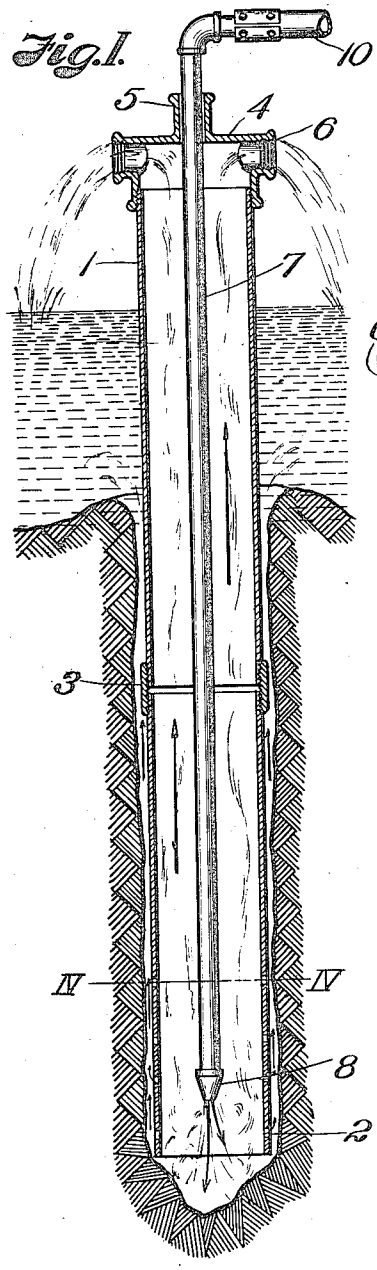


Fig. III.

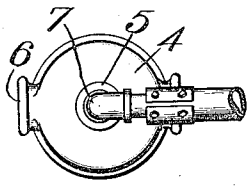


Fig. IV.

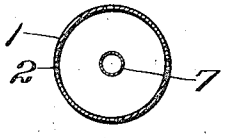


Fig. V.

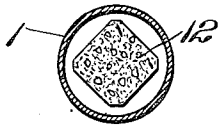
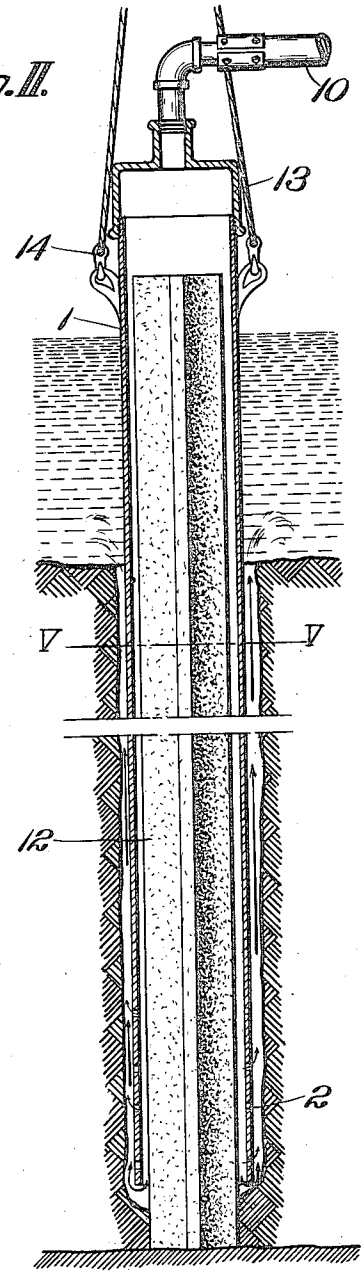


Fig. II.



WITNESSES:

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METHOD OF SINKING PILES.

1,173,355. Specification of Letters Patent. Patented Feb. 29, 1916.

Application filed September 2, 1913. Serial No. 787,705.

To all whom it may concern:

Be it known that I, HARRY T. JONES, a citizen of the United States, residing, at Seward, in the county of Seward and State of Nebraska, have invented certain new and useful Improvements in Methods of Sinking Piles; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to a method of sinking piles, and has for its object to provide a method for sinking a pile of concrete or other material otherwise than by forcing the same into the earth or sand into which it is to be embedded.

In sinking piles in accordance with my method, I prepare a well or hole for receiving the pile by sinking a casing, which is adapted for not only preparing the well or hole but also for holding back earth or sand from the pile, while the latter is being lowered to position, lowering the pile through the casing when the well has been formed, and afterward removing the casing from the pile.

In order to fully explain the operation of the method and the structure used in carrying it out, I will describe same with reference to the accompanying drawings, wherein:—

Figure I is a central, longitudinal section of the well forming casing and jet pipe, showing the well partially formed. Fig. II is an elevation of a pile after it has been lowered through the casing, and showing the casing partially removed. Fig. III is a plan view of the casing, showing the jet pipe fitting. Fig. IV is a horizontal section, on the line IV—IV Fig. I. Fig. V is a horizontal section on the line V—V Fig. II.

Referring more in detail to the drawings: 1 designates the casing used in forming the well or hole into which the pile is ultimately lowered, and which preferably comprises cylindrical sheet metal sections adapted for connection so that two or more of the sections may be joined in order to sink the well or hole to the proper depth; the lower section being provided with transverse apertures 2, through which water discharged from a jet member may be forced to rise along the outer surface of the casing and serve to keep back the earth or sand therefrom while the casing is being sunk. The successive casing sections may be joined by coupling rings 3 of any suitable structure.

Mounted on the upper casing section is a fitting 4, comprising a vertical sleeve or stuffing box 5, and lateral ports 6, having communication with the interior of the casing, and extending through the said sleeve or stuffing box is a pipe 7, which terminates in a nozzel 8, adjacent the lower end of the casing. The outer end of the pipe is connected with a hose or supply pipe 10 which may lead to a source of supply from which water is delivered to the jet pipe under pressure.

When it has been determined at what point a pile is required, the casing 1 is lowered over the earth or sand through which the pile must be projected to its foundation, and the water turned into the jet pipe so that a flow of water under pressure is delivered downwardly at the bottom of the casing. The jet of water excavates in advance of the casing and the discharged water rises through the casing and about the sides thereof, carrying displaced earth or sand with it, so that the latter is delivered through the side ports 6, of the fitting 4, and about the sides of the casing, leaving a vacant space in advance of the casing into which the latter sinks by its own weight.

It is apparent that when the lower section of the casing has reached a point slightly above the surface of the material through which it is to be projected, an additional section may be applied, and the sinking process continued. When the casing reaches the required depth, the water is shut off, the fittings and jet pipe removed, and the pile 12 lowered through the interior of the casing until its lower end rests on the bottom of the well. When the pile has been lowered to its required depth, the casing is removed, so that the earth or sand which has been held back by the casing, may flow in about the pile and embed the same.

In order to remove the casing, it is necessary, when the latter has been sunk to a sub-

stantial depth, to turn the water back into its interior so that a film may be caused to rise about the outer surface thereof, to keep back the earth and sand, while the casing is being lifted. In carrying out this part of the method I prefer to apply a fitting 13 to the top of the casing, connect the supply pipe 10 to the fitting, and attach a grapple 14 to the upper end of the casing, so that when water is turned on and forced down through the casing and through the side apertures, the earth or sand through which the casing is embedded is displaced immediately about the casing, so that when the grapple is raised, the casing is lifted from about the pile. It is apparent that as the casing rises, the earth and sand will flow in about the pile and lock same in place. It is apparent that with the present method, the pile may be formed at a convenient point above the ground and lowered to place without damaging impact from a hammer or the like, so that there is no danger of the pile being cracked or weakened while being placed.

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

1. The method of sinking a pile, consisting of sinking a casing having a jet pipe located therein, removing the jet pipe when the casing has reached the required depth, lowering a pile through the casing, discharging water within the casing about the pile, and withdrawing the casing.

2. The method of sinking a pile consisting of sinking a casing having a fitting at its upper end, by means of a jet pipe that is projected through the fitting, removing the fitting and pipe when the casing has reached a required depth, lowering a pile within the casing, applying a fitting to the casing, discharging water under pressure through said fitting into the casing, and withdrawing the casing.

In testimony whereof I affix my signature in presence of two witnesses.

HARRY T. JONES.

Witnesses:
RETTA F. THOMAS,
ARTHUR C. BROWN.