

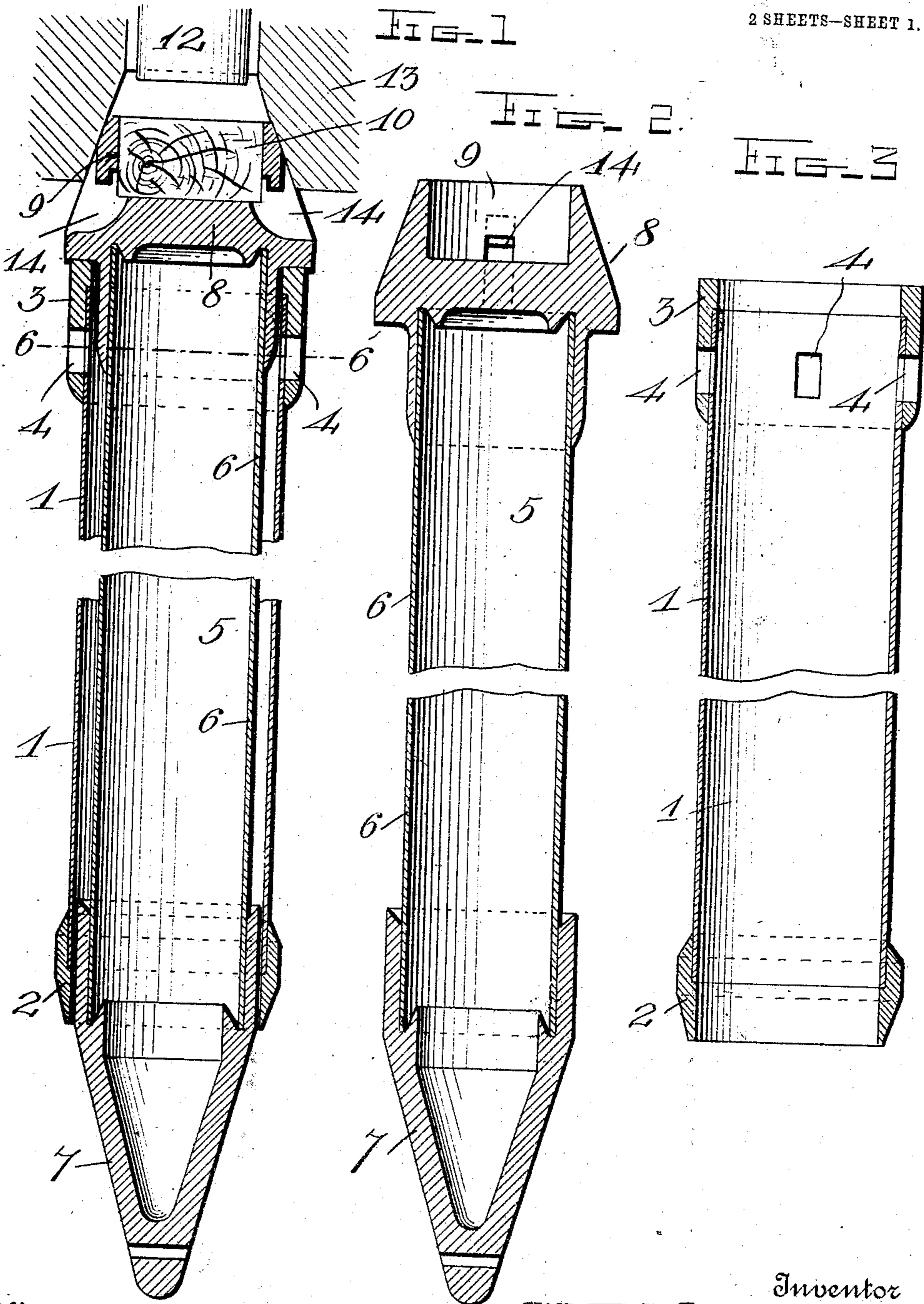
No. 850,389.

PATENTED APR. 16, 1907.

W. T. McCLINTOCK.
DEVICE FOR DRIVING AND FORMING PILES.

APPLICATION FILED NOV. 9, 1905.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

FIG. 4

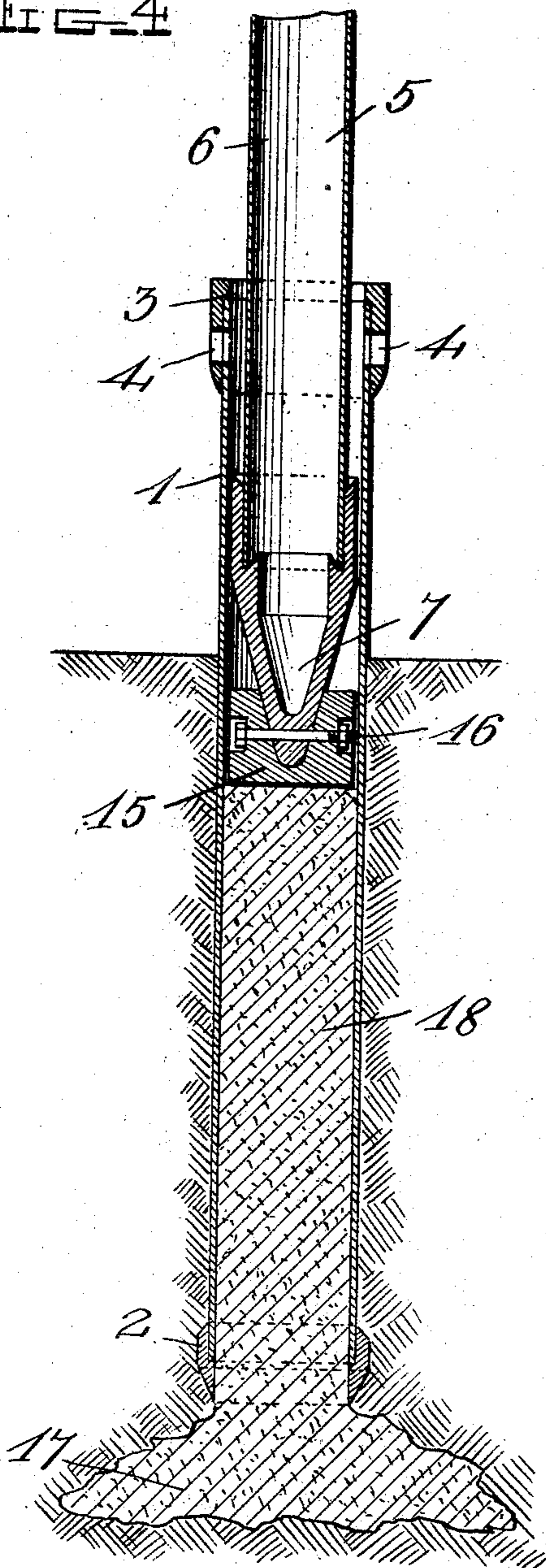


FIG. 6

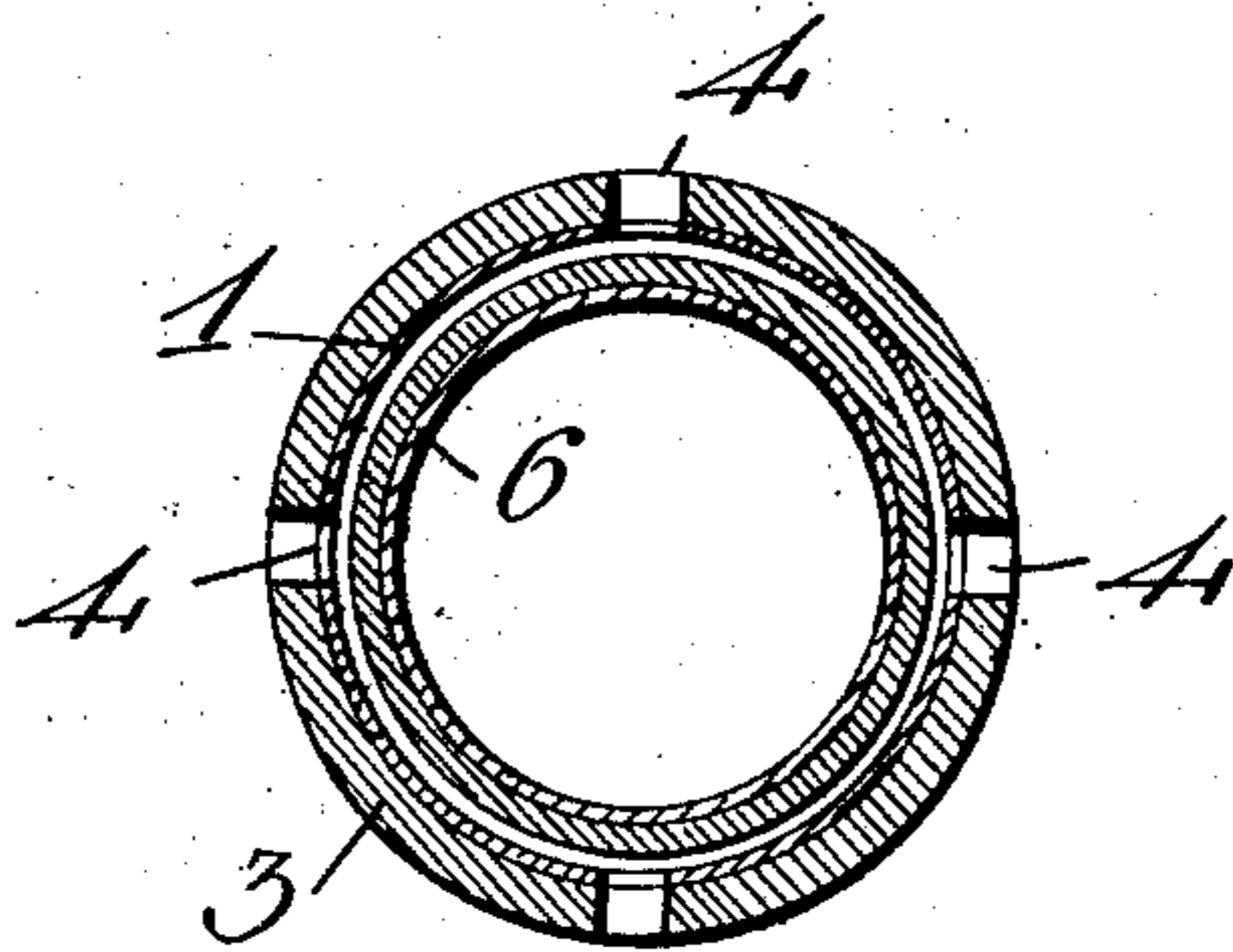
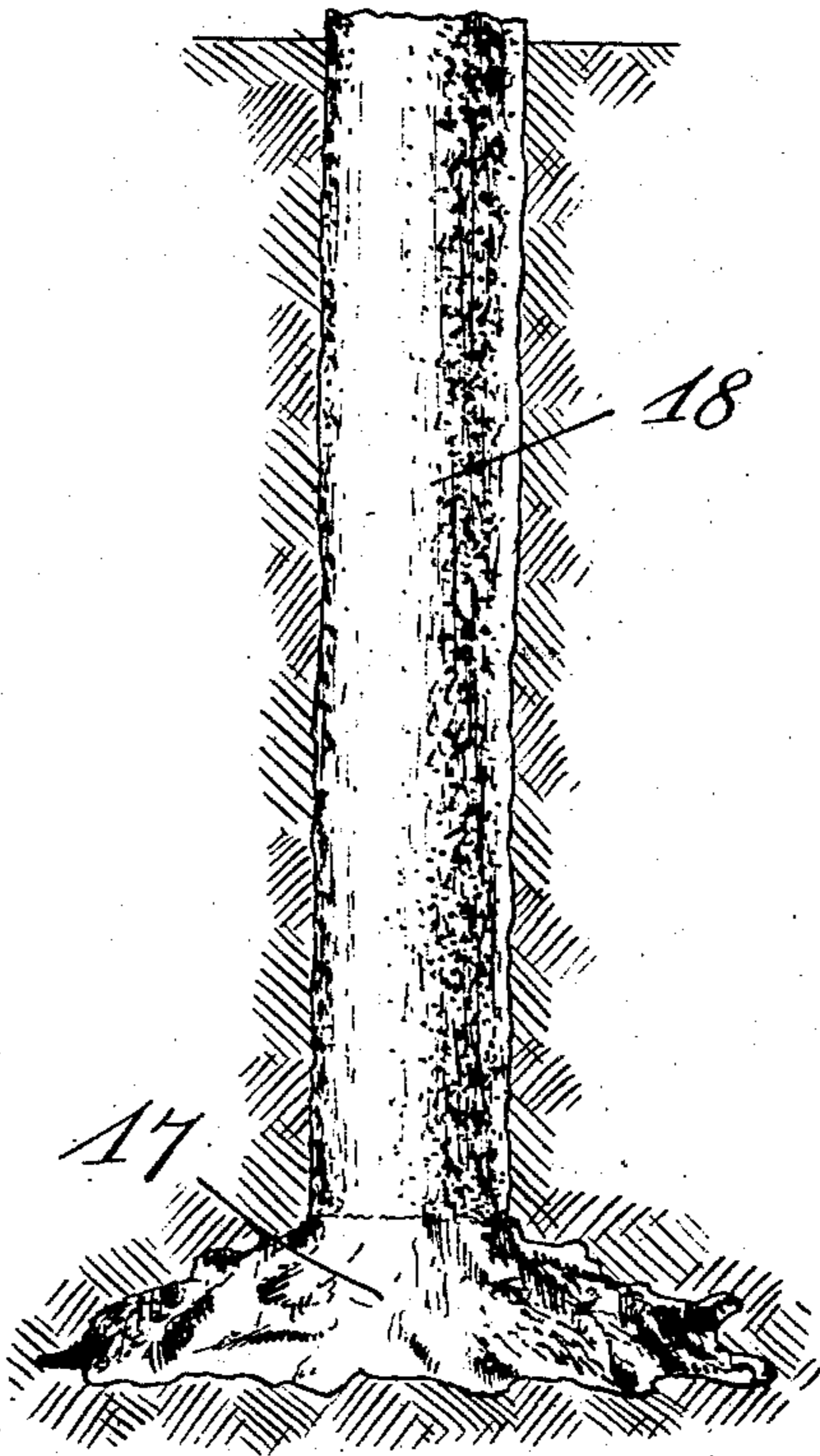


FIG. 5



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UNITED STATES PATENT OFFICE.

WILLIAM T. McCLINTOCK, OF SPRINGFIELD, WEST VIRGINIA.

DEVICE FOR DRIVING AND FORMING PILES.

No. 850,389.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed November 9, 1905. Serial No. 286,619.

To all whom it may concern:

Be it known that I, WILLIAM T. McCLINTOCK, a citizen of the United States, residing at Springfield, in the county of Hampshire and State of West Virginia, have invented certain new and useful Improvements in Devices for Driving and Forming 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.

This invention relates to improvements in devices for driving and forming piles.

The object of the invention is to provide a device or tool for driving hollow piles which may be used as they are driven or which may serve as molds to receive a concrete filling, said filling forming a concrete pile from which after the same has been filled the hollow pile may be withdrawn, thus leaving only the concrete pile in the ground.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a vertical sectional view of the device applied to and arranged for driving a hollow pile. Fig. 2 is a similar view of the tool removed from the pile. Fig. 3 is a similar view of the hollow pile. Fig. 4 is a similar view of the hollow pile, showing the manner of using the same in forming a concrete pile. Fig. 5 is a side view of the concrete pile after the hollow pile has been removed therefrom. Fig. 6 is a horizontal sectional view on the line 6-6 of Fig. 1.

Referring more particularly to the drawings, 1 denotes a hollow pile upon the lower end of which is shrunk or otherwise secured a strengthening ring or collar 2, the outer lower edge of which is beveled, as shown. On the upper end of the hollow pile is shrunk or otherwise secured a ring or collar forming a head 3, in the sides of which at diametrically opposite points are formed apertures or slots 4 to receive the ends of grappling-hooks or other devices for drawing the pile out of the ground.

In order to facilitate the driving of the pile 1, a driving-tool 5 is provided, said tool consisting of a cylindrical tubular body portion 6, on the lower end of which is shrunk or otherwise secured a driving-point 7, while on the upper end of said body portion is shrunk

or otherwise secured a driving head or anvil 8, in the upper end of which is formed a recess or socket 9, in which is adapted to be inserted a wooden block 10. This block 10 is adapted to receive the blows from the pile-driver piston, which works through a guide-head 13, said head being provided with a frusto-conical-shaped recess to receive the head 8 of the driving-tool. In the sides of the head 8 at diametrically opposite points are formed recesses 14, with which are adapted to be engaged the ends of grappling-hooks, by means of which the tool is withdrawn from the hollow pile after the same has been driven.

After the hollow pile has been driven into the ground to a suitable distance the same may be filled with concrete or cement, which after being filled may be withdrawn, leaving simply the concrete pile embedded in the ground. In forming the concrete pile a portion of the material is placed in the hollow pile and is rammed down by means of a clamping head or block 15, which is removably connected to the lower pointed end of the tool 5 after the same has been withdrawn from the hollow pile. Said block is secured to the point of the tool in any suitable manner, but preferably by means of a bolt 16, which is passed through an aperture in the block and through an aligning aperture in the point of the tool, as shown. As the clamping head or block 15 is applied to the concrete in the lower end of the hollow pile said concrete will be forced downwardly with sufficient pressure to cause the same to bulge outwardly into the ground surrounding the lower end of the tool, thereby forming an enlarged base 17 for the concrete pile 18, which base will add to the carrying capacity of the pile. After the base portion 17 has been formed the tool 5 and the clamping-head 15 are withdrawn from the hollow pile and the same filled with concrete, which is forced or pressed into the hollow pile by means of the pile 5 and the clamping-head 15, said concrete uniting with the concrete forming the base, thus producing a solid concrete pile from which the hollow pile may be withdrawn immediately after being filled.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion,

and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

10 1. A pile-forming device comprising a hollow pile adapted to be driven into the ground to receive a plastic pile-forming material, a tool to enable said pile to be driven, a tamping-block removably connected to said tool, and means to facilitate the withdrawing of said tool and pile-forming device, substantially as described.

15 2. A pile-forming device comprising a hollow pile having on its lower end a beveled reinforcing band or collar, an annular driving ring or collar arranged on its upper end, a driving-tool adapted to be inserted into said hollow pile, said tool having on its lower end a driving-point, a driving head or anvil arranged on its upper end, and means adapted to be removably connected to the driving-point to force concrete or other plastic material into said hollow pile, substantially as described.

25 3. A concrete-pile-forming device consisting of a hollow pile having formed on its

lower end a beveled driving ring or collar, an annular driving ring or band arranged on its upper end, said driving-ring having formed therein slots to receive an extracting device, a driving-tool adapted to be inserted into said hollow pile, said tool having on its lower end a conically-shaped driving-point, a driving head or anvil arranged on the upper end of said tool, said head having formed in its sides recesses to receive the ends of extracting devices and in its top a socket, a wooden block arranged in said socket and a tamping-block adapted to be removably attached to the lower end of said driving-point, substantially as and for the purposes described.

40 4. The combination, with an outer form or casing, of a pile-core having an enlarged and non-detachable point and adapted to be driven under pressure, and a cap for adjustment to the point of said core, substantially as described.

50 In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM T. McCLINTOCK.

Witnesses:

P. L. HEDDING,
K. E. LARKINS.