

No. 788,410.

PATENTED APR. 25, 1905.

F. A. KOETITZ.
CONCRETE CASING.
APPLICATION FILED JULY 13, 1904.

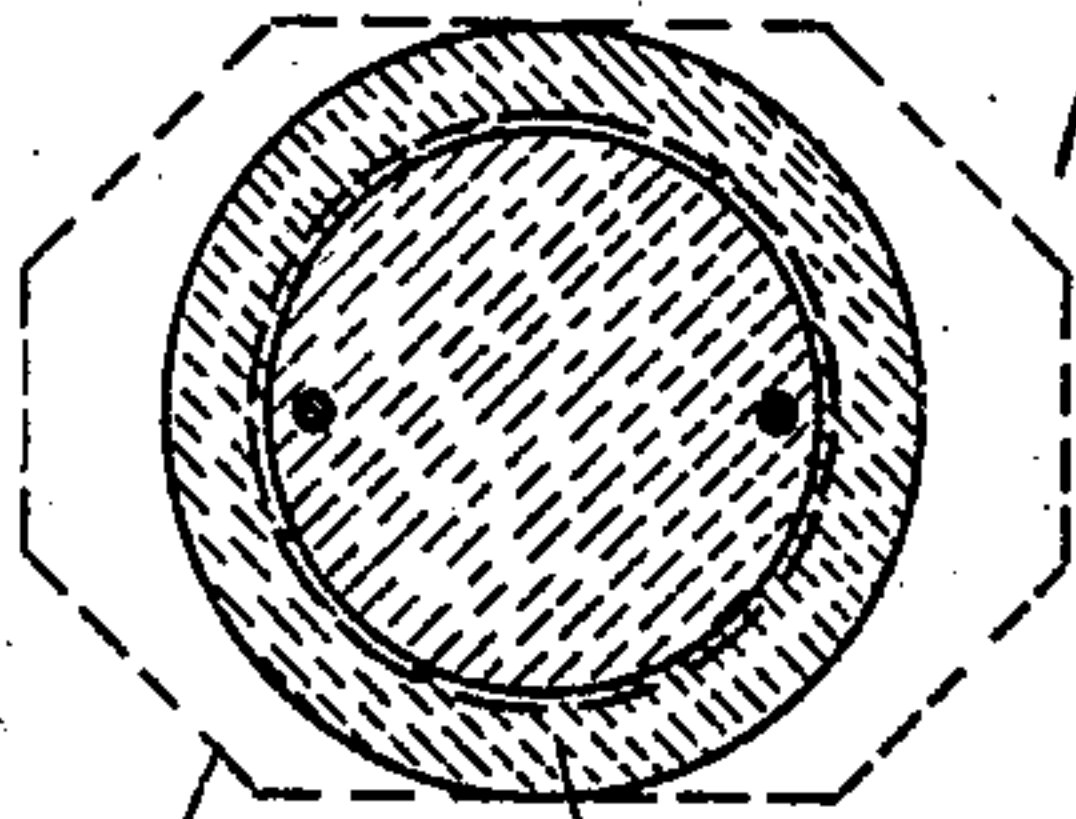


FIG. 1.

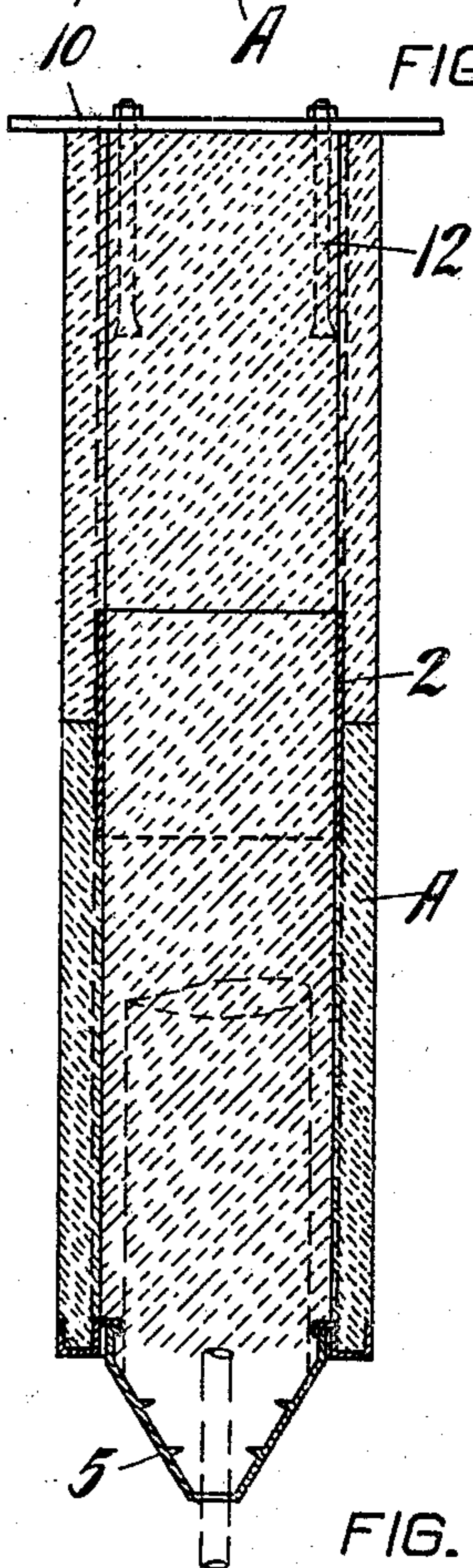


FIG. 2.

FIG. 4.

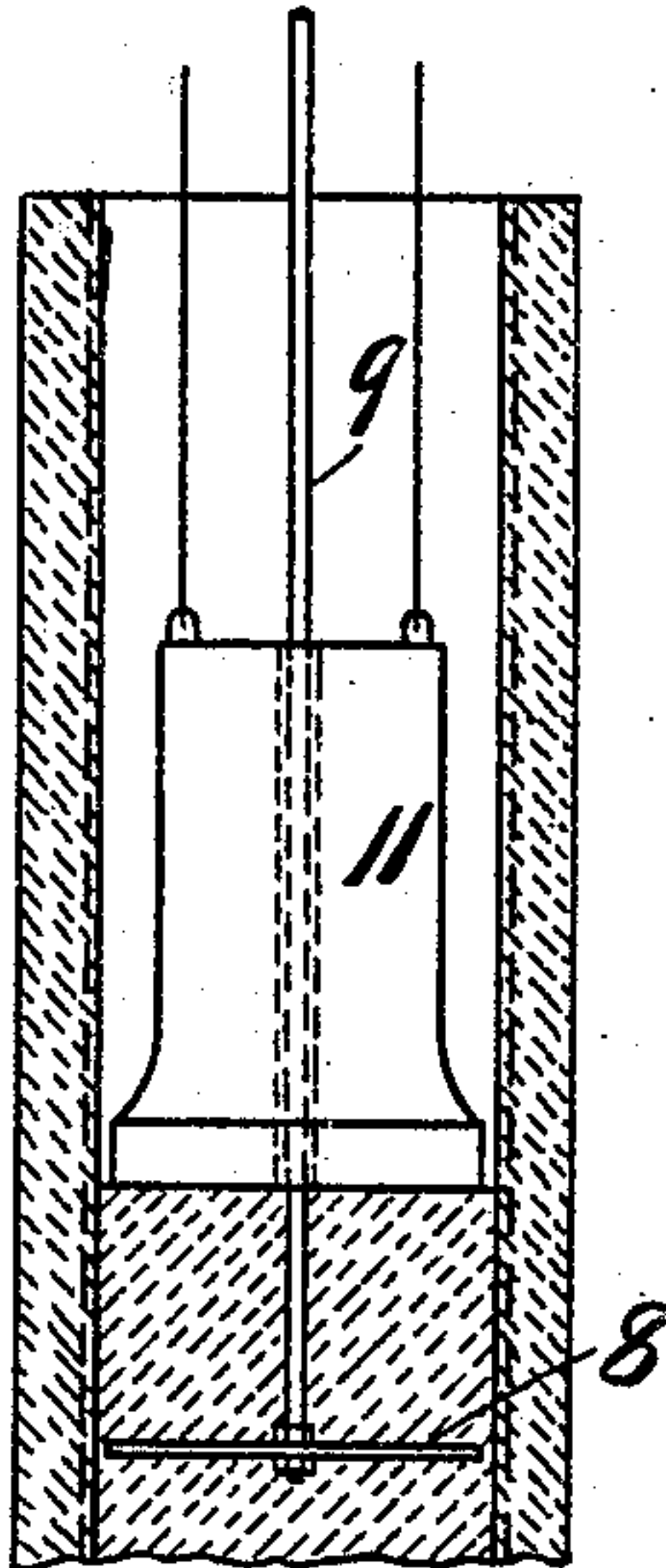


FIG. 5.

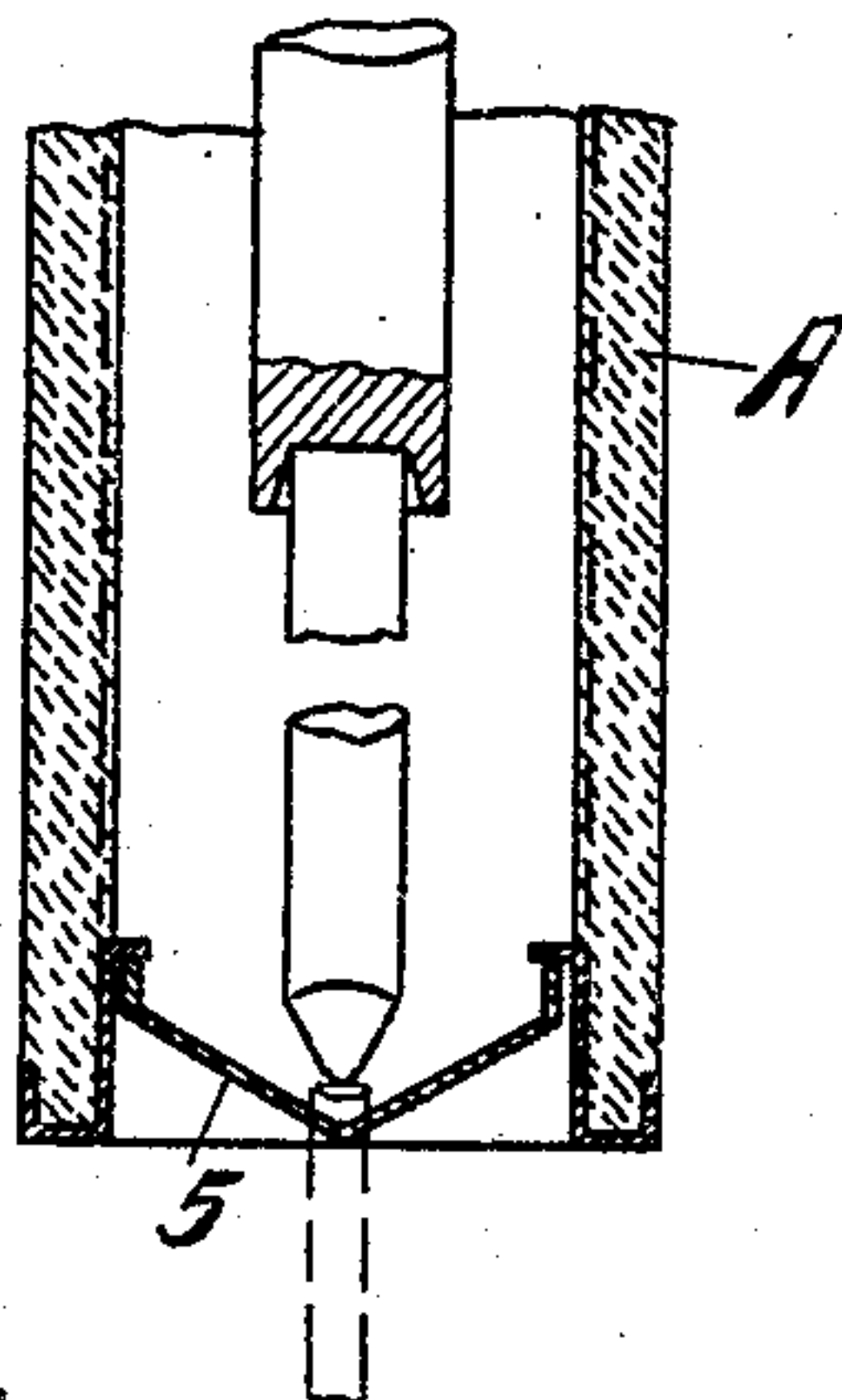


FIG. 6.

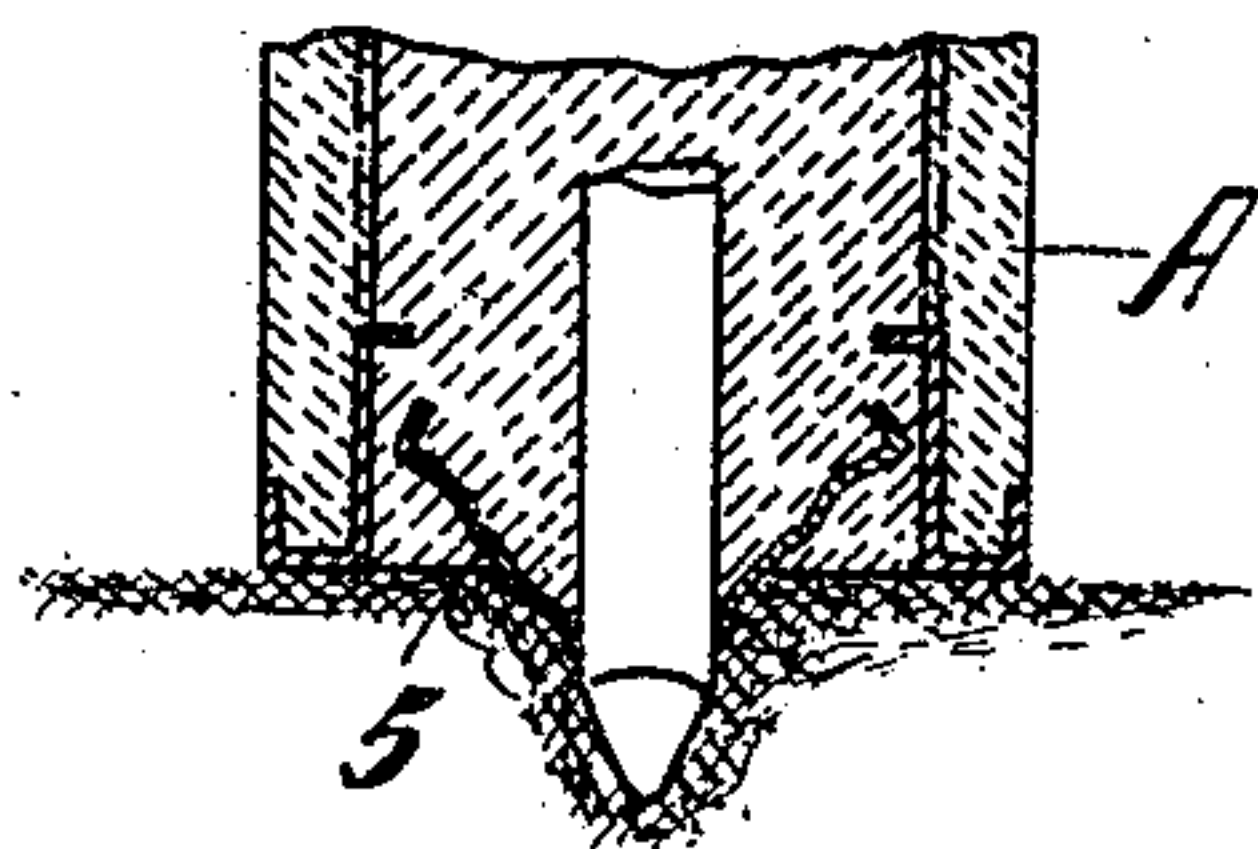


FIG. 7.

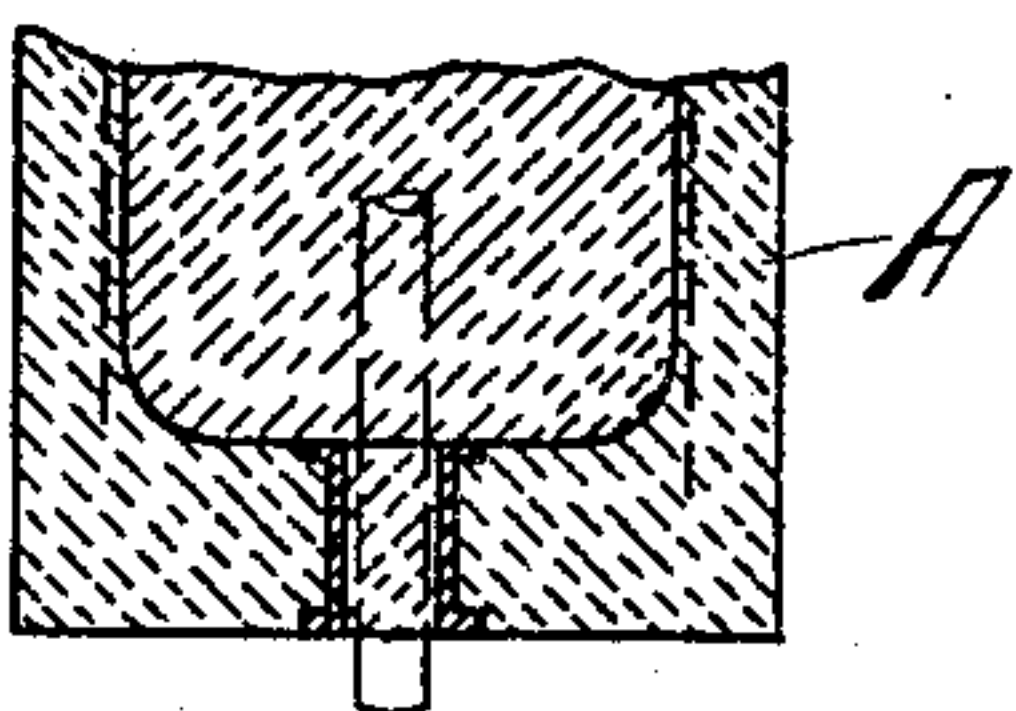


FIG. 9.

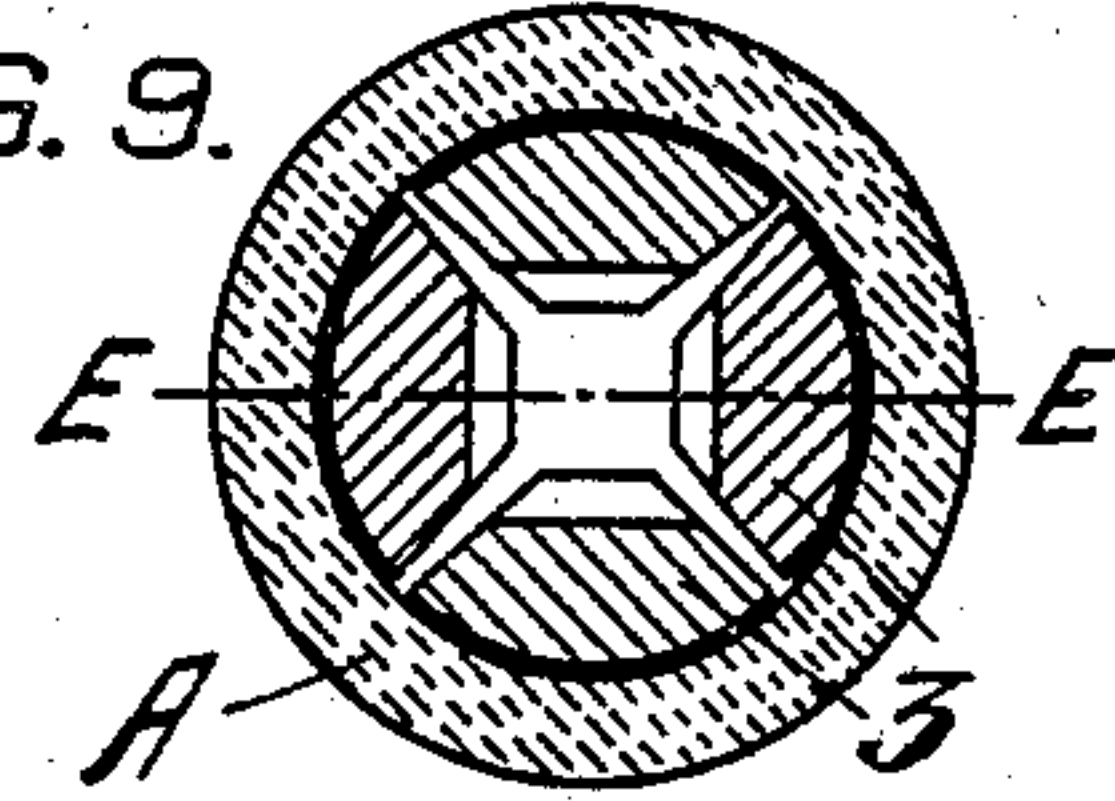


FIG. 10.

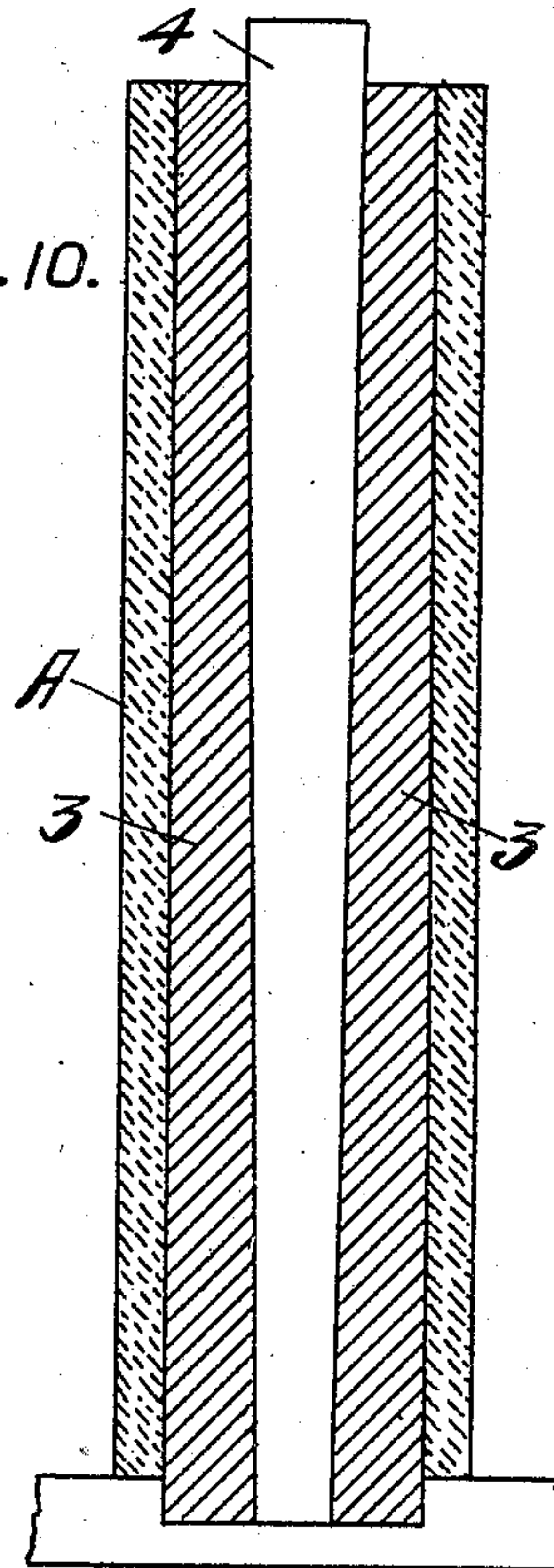
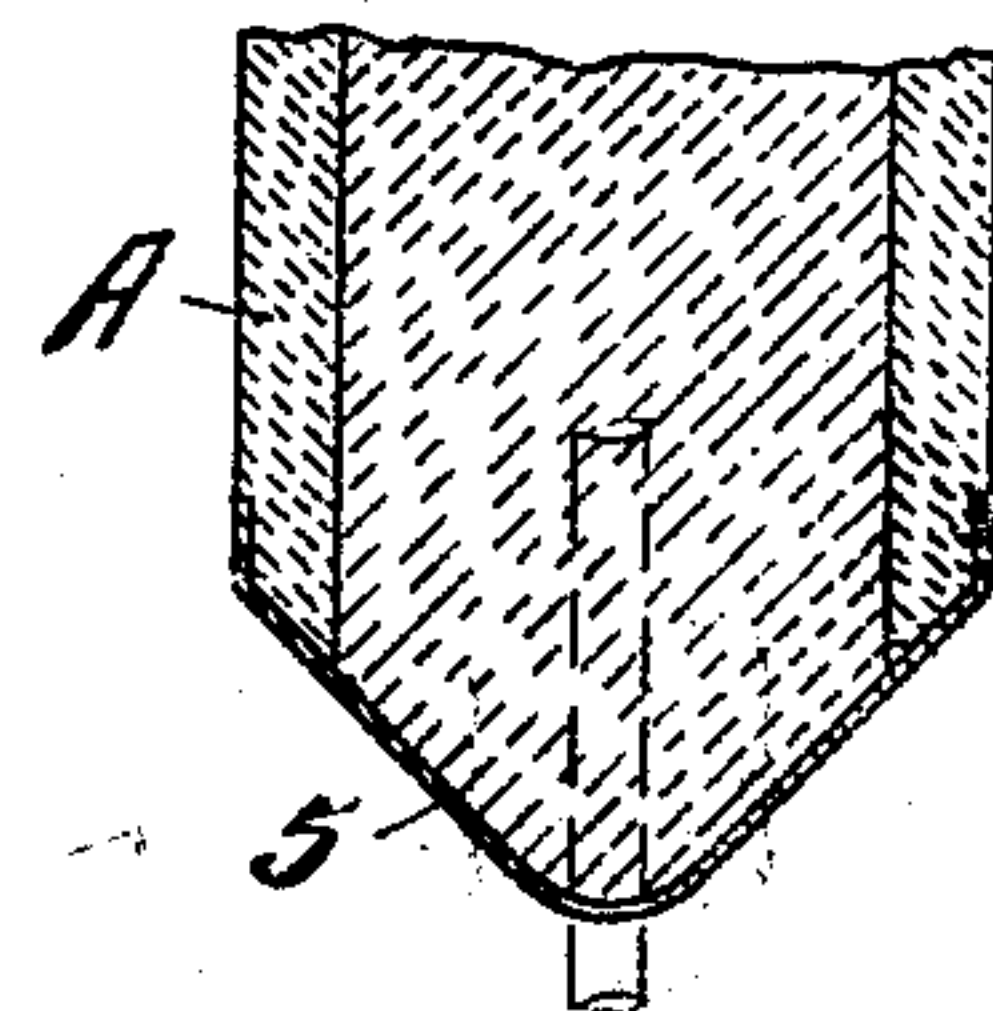


FIG. 8.



WITNESSES,

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UNITED STATES PATENT OFFICE.

FREDERICK A. KOETITZ, OF SAN FRANCISCO, CALIFORNIA.

CONCRETE CASING.

SPECIFICATION forming part of Letters Patent No. 788,410, dated April 25, 1905.

Application filed July 13, 1904. Serial No. 216,396.

To all whom it may concern:

Be it known that I, FREDERICK A. KOETITZ, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Concrete Casings, of which the following is a specification.

My invention relates to a concrete casing which is especially designed for the inclosure of piles and like structures and those parts which are exposed to the ravages of insects or to other deterioration.

It comprises the construction and combination of parts and details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a section through casing. Fig. 2 is a sectional elevation of same. Fig. 3 is a sectional elevation of bottom of casing, showing pile driven down. Fig. 4 is a sectional elevation of casing, showing ram and guide-rod. Fig. 5 is a sectional elevation of casing and iron pile. Figs. 6, 7, 8 are modified forms of bottoms. Fig. 9 is a section of casing and forms. Fig. 10 is a sectional elevation of same on line E E of Fig. 9.

As shown in the drawings, A is a hollow concrete casing of cylindrical or other form and of any suitable or desired size having substantially vertical sides, which may be parallel or tapered. This casing is of sufficient diameter to receive the pile or other structure which may be used in conjunction with it. In the present drawings I have illustrated my invention as especially applied to the inclosure and protection of piles; but it will be manifest that it may be equally well employed on other similar or equivalent structures requiring protection. This casing may be built either in a single length when it is short, or it may be built in sections, which are afterward united by a metal sleeve, as at 2, or equivalent connecting part.

The concrete structure may be reinforced by metal rods or wire-netting near the inner or outer periphery, or both, to suit the required strength.

In building this structure I may employ a

collapsible form or core of wood made in sections, as shown at 3, the outer surface of these sections being covered with paper or other material to seal the joints of the form. This form may be hollow or tubular and may be retained in its proper shape and position by an interior key, as at 4. This key may be tapered, fitting the correspondingly-shaped interior of the core or form, thus holding the sections of the core in the properly-extended position, so that the material for the concrete may be tamped or otherwise packed around the core and within an outer inclosing casing. When the concrete has set sufficiently for removal, the wedge-shaped key may be removed, and this will allow the longitudinally-divided sections of the core to be collapsed sufficiently for easy removal.

If the concrete structure is to be made in sections or short lengths and united by sleeves, as at 2, the sleeve may be let into the concrete material so as to lie substantially flush with the surface and offer no obstruction to the driving of the pile.

This concrete structure is let down into the mud or to rest upon the bottom of whatever nature and, if desired, may be sunk by superimposed loading or the use of a water-jet passing through the bottom of the casing, so as to displace the material and allow it to settle, or by driving, and any or all of these methods may be combined.

The casing may be provided with a central cone, as 5, projecting below the bottom of the casing and centrally perforated for the connection of the water-jet. The top of the cone is fitted to the bottom of the concrete casing and may be so constructed as to serve as a shoe for the wooden pile 6, which is driven through the casing after the latter has been seated in its position. The pile being let down into the casing, its lower end will rest upon or fit into the shoe, and when driven the shoe serves to prevent the splintering of the end of the pile and to properly direct it as it is driven.

In some cases it may be found desirable to drive iron piles where the bottom is of a hard

nature, such as clay or friable rock, and in such cases the iron pile is adapted to pass through the conical shoe and to be driven into the rock or bottom, so as to serve as an anchor
5 to hold the parts in position.

The lower end of the concrete structure may also be closed, having the central opening through it for the passage of the water-jet to be used in sinking it in soft material,
10 as previously described.

When the iron pile or center has been driven, the space around and between this pile and the outer concrete casing may be filled with concrete, which will be forced into the inter-
15 stices at the foot of the casing and through the space between it and the pile. The hollow space around the pile between it and the concrete casing may also be filled with concrete, so as to make a substantially solid struc-
20 ture.

When made in sections, an anchor 8 may be fixed in the lower part of the casing, and a rod 9 extending upward from said anchor may have its upper end secured in a cap-plate, as
25 at 10. This rod may also serve as a guide for a ramming-head 11, which may be employed to tamp the concrete firmly into place.

Anchor-bolts may be inserted into the upper end of the concrete filling, as shown at 12,
30 and these bolts will serve for the attachment of the cap-timbers or superstructure which it may be desired to employ in conjunction with the supports herein described.

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

1. An independent hollow concrete casing capable of being sunk in the earth at the bot-
40 tom, and a pile or filling-piece inserted in the casing, said casing serving as a guide for driving the pile.

2. An independent hollow concrete casing capable of being sunk in the earth at the bot-
45 tom said casing having a reinforcing metal structure embedded therein, and a pile subsequently driven through the material of the casing, said casing forming a guide for the driven pile.

3. An independent hollow concrete casing
50 capable of being sunk in the earth at the bottom said casing composed of sections axially in line and forming a vertical guide for a subse-

quently-driven pile, and sleeves by which said sections are secured together.

4. An independent hollow concrete casing, 55 a shoe fitting the lower end of said casing whereby the casing as a hollow unitary structure may be pressed or driven into the earth at the bottom, said positioned casing forming a guide for a subsequently-driven pile or fill- 60 ing-piece.

5. An independent hollow concrete casing capable of initial sinking in the earth at the bottom, a shoe fitting the bottom of said casing and a water-jet passage through the bottom 65 of the casing and the shoe, said casing, when in position, forming a vertical guide for a driven pile.

6. An independent hollow concrete casing capable of initial sinking in the earth at the 70 bottom, means for sinking said casing into the earth forming the bottom, said casing forming a guide for a subsequently-introduced pile or filling and a filling of concrete within said casing. 75

7. The combination with an independent hollow concrete casing sunk in the earth forming the bottom of a pile driven through the casing into said bottom, after the casing is in position whereby the casing forms guiding 80 means for the driven pile, and a filling of concrete between the pile and the inner walls of the casing.

8. A hollow concrete casing said casing being sunk in the earth forming the bottom, an 85 interior filling of concrete tamped within the casing, anchors embedded in the concrete, one or more rods extending upward from said anchor and a cap-plate to which the rods are secured. 90

9. A hollow concrete casing composed of independent lengths axially in line, sleeves by which said sections are maintained in position, an interior pile driven through the casing, an intermediate filling of concrete tamped around 95 the pile and anchor-bolts projecting upwardly from the concrete for the attachment of a cap.

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

FREDERICK A. KOETITZ.

Witnesses:

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HENRY C. DROGER.