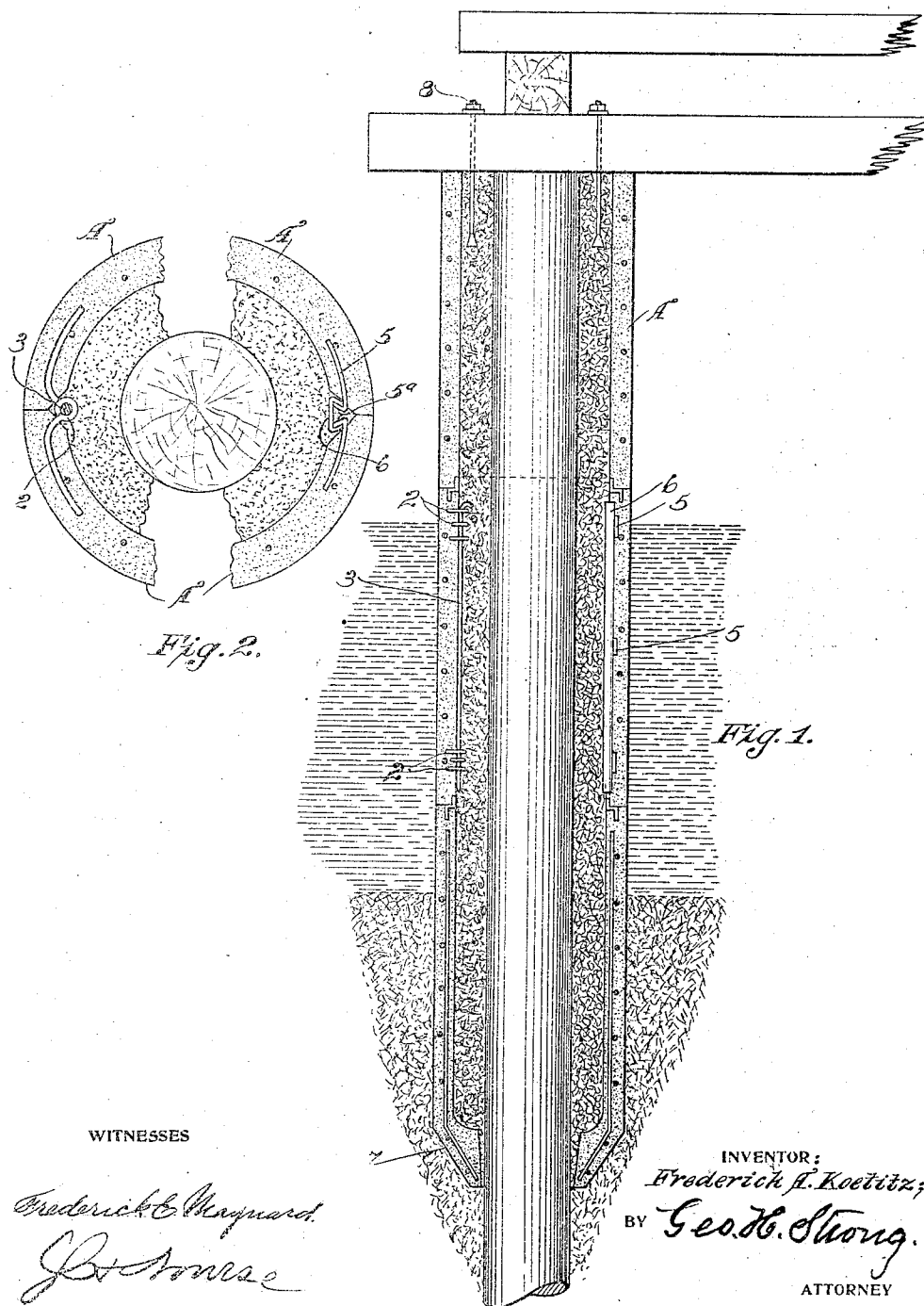


No. 884,668.

PATENTED APR. 14, 1908.

F. A. KOETITZ.
CONCRETE PILE COVERING.
APPLICATION FILED DEC. 9, 1907.



WITNESSES
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FREDERICK A. KOETITZ, OF SAN FRANCISCO, CALIFORNIA.

CONCRETE PILE-COVERING.

No. 884,668.

Specification of Letters Patent.

Patented April 14, 1908.

Application filed December 9, 1907. Serial No. 405,798.

To all whom it may concern:

Be it known that I, FREDERICK A. KOETITZ, 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 Pile-Covering, 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 combination of parts whereby the concrete inclosure may be applied to piles and structures already in place, and details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a vertical section of my invention. Fig. 2 is a transverse section.

In a former patent issued to me April 25, 1905, I have described a concrete structure for the inclosure of piles and the like. In my present invention I have designed a means for making such a structure in segments, and so connecting these segments that they may be applied to the exterior of already driven piles, and in such a manner that the piles may be protected by the inclosure, and a filling of concrete, without the necessity of disturbing the super-structure and interrupting traffic.

The concrete casing is made in segments, here shown as half cylinders A. These cylinders may be molded or formed in any suitable or desired manner, and having a length dependent principally upon the distance between the bottom of the super-structure and the water surface. The segments are formed with means for locking them together upon the sides. Said means may comprise a suitably constructed hinge joint; such a joint is here shown as consisting of eyes 2 having the inner ends embedded in the cement of the sections, so that the eyes may stand in line when the sections are properly assembled. Lock rods or pins 3 are passed through these eyes, and thus form hinges about which the segments are turnable so that they may be opened preparatory to being placed around the pile and afterwards closed. The edges may also be secured by means of open triangular yokes 5 connecting said edges in such a manner that a filling of cement may be afterwards introduced.

As here shown, the metal plates 5 are em-

bedded in the concrete near the meeting edges of the sections, and these projecting toward each other are bent to an acute angle as shown at 5^a, so that when the edges of the casing are brought together these angular plates diverge from each other.

6 is a strip or plate of metal which has its edges bent inwardly at an acute angle with the central plane surface, and these edges are designed to interlock with the outwardly turned edges 5^a of the plates 5. Thus when the casing has been closed about the pile, these meeting edges are interlocked by a series of the plates 6 engaging with the fixed angular plates of the casing, or by a continuous plate.

It will be understood that any equivalent means for closing and securing the casings may be effected; it being only desirable to close the casings after they are fitted.

The concrete or material of which the casings are formed, is preferably reinforced by metal wire fabric or steel or iron rods which may extend longitudinally and circumferentially within the concrete and so as to give it the requisite strength. The meeting ends of these sections may be made to register and remain in proper position by beveling or flanging, or they may be provided with annular rings having upwardly or downwardly turned flanges which will engage the meeting ends of the sections. The lower end of the lowermost section may be provided with a shoe or guide 7 which is fitted to the end as shown, and this serves to maintain the proper space between the pile and the casing to provide the necessary annular channel for the subsequent filling of concrete which is introduced after the casing sections are in place.

My device is applied as follows: The lowermost section is placed in halves around the pile above the water. The sections are then connected and lowered into the mud or material in which the pile is driven, the shoe acting as a guide to maintain these sections in place; and they may be afterwards pressed, driven, or otherwise forced into the submerged surface to any desired depth. As soon as the first section is lowered, with its top approximately near the surface of the water, another section is added and connected thereto, and so on until the entire pile has been inclosed to the top, or contiguous to the lower surface of the super-structure which is supported by the pile.

In cases where the piles have not received

the super-structure, attachments may be made therefor, said attachments consisting of Z-shaped, or other angular plates or anchor bolts 8 having one end embedded in the upper end of the topmost section of the casing, and the other end projecting upwardly so as to provide for the necessary attachment. The structure surrounding the pile being thus completed, the water may be pumped from the interior space, and this space filled with concrete in the usual manner, thus making a solid casing within which the pile is embedded.

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

1. The combination with a pile, of a hollow concrete casing made in segments hinged together along one of their longitudinal edges, and means for detachably securing the opposite edges of said segments.

2. An independent hollow casing formed of longitudinally divided segments, the adjacent edges of the segments being hinged together at one side of the casing, and detachable connections for uniting the meeting edges of the sections at the opposite side of the casing, said casing adapted to inclose a pile and to provide space for an intermediate filling of concrete.

3. An independent hollow concrete casing consisting of semi-cylindrical segments, said segments having hinging eyes embedded in the meeting edges on the side, and hinge pins connecting said eyes, or angular plates embedded in the opposite edges of the segments,

and angularly bent plates interlocking therewith to secure the segments in the cylindrical structure.

4. A hollow concrete casing formed of semi-circular segments, means forming a hinged connection along the meeting edges of the segments at one side of the casing, projections on the adjacent edges of the segments at the other side of the casing, and means detachably engaging said projections to lock the segments together.

5. A pile-protecting device consisting of semi-cylindrical segments having suitable locking devices upon their opposite edges whereby they may be fitted around a pile to form an annular channel, means by which the ends of said casings are fitted in line with each other, and a shoe or guide maintaining an even channel around the pile while the casing is being sunk to position.

6. A means for protecting piles, said means consisting of cylindrical segments having hinged or interlocking closing devices at the edge 5, a shoe for guiding the bottom of the lower section around the pile, means for uniting and maintaining the superposed sections in alinement, and anchor bolts projecting upwardly from the top section to form an attachment for the super-structure.

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

FREDERICK A. KOETITZ.

Witnesses:

C. A. PENFIELD,
S. H. NOURSE.