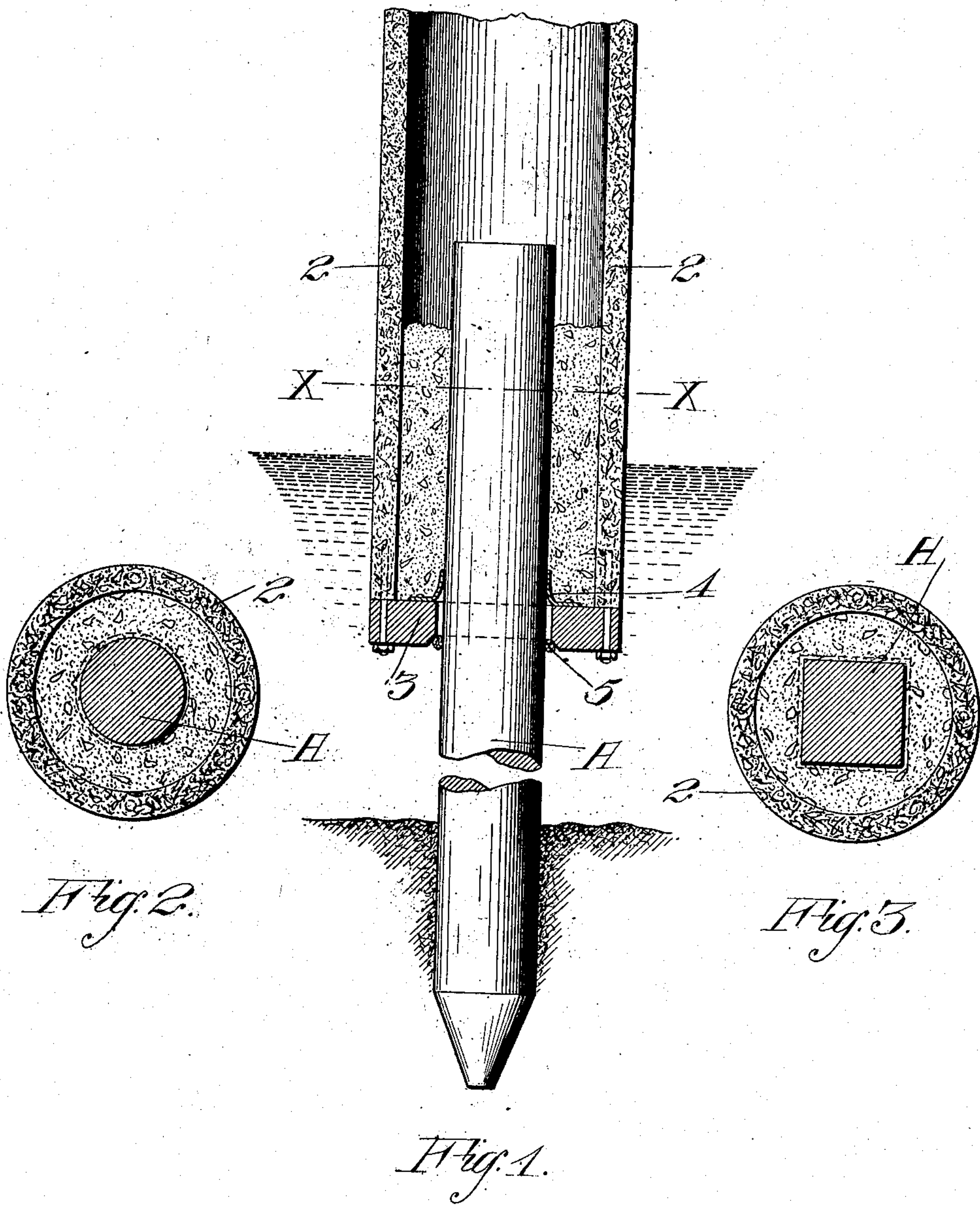


F. A. KOETITZ.  
 FITTING FOR CONCRETE CASINGS.  
 APPLICATION FILED DEC. 24, 1908.

930,974.

Patented Aug. 10, 1909.



Witnesses.  
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*Att'y.*



# UNITED STATES PATENT OFFICE.

FREDERICK A. KOETITZ, OF SAN FRANCISCO, CALIFORNIA.

## FITTING FOR CONCRETE CASINGS.

No. 930,974.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed December 24, 1908. Serial No. 469,103.

*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 Fittings for Concrete Casings, of which the following is a specification.

My invention relates to improvements in the fitting of concrete casings to driven piles, and for like purposes, where the structure to be protected is submerged.

The invention consists in a means for preventing the entrance of mud and water into the space within the casing and around the pile, and in 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 vertical longitudinal section, Fig. 2 is a section on line X—X, Fig. 1. Fig. 3 is a similar section showing a square timber.

For the purpose of protecting driven piles, it is customary to drive an inclosed casing, which may be made of concrete, or other material, and which is subsequently filled with concrete which embeds and protects the inclosed pile. In the usual method of driving the exterior casing, it is necessary to excavate and pump out the mud and material which enters the casing from below, as the latter is sunk to the proper distance into the mud into which the pile is driven.

It is the object of my invention to prevent the entrance of the mud and water and to make a substantially tight joint between the concrete casing and the pile, so that after the casing has been sunk to its position it will not be necessary to excavate and pump out material to make place for the concrete which is to be placed within the casing and around the pile.

As shown in the drawings, A is a pile, and may represent any structure which is to be embedded in the bottom underneath the water. 2 is a concrete casing of sufficiently larger diameter which is to be sunk around the pile and subsequently filled with concrete. I prepare this casing by fixing in the lower end a closure 3 which may be of any suitable or desired form for the purpose. It may be introduced into the bottom of the casing; but I have found a very suitable method is to secure the closure 3 by means

of bolts which may be cast into the concrete casing when the latter is formed; and the closure 3 has an opening in the center, large enough to fit loosely around the pile, and the outer edges passing over the bolts which project from the concrete may be secured by nuts, or in other suitable manner. As the pile usually tapers from the head to the point, the space through which the pile passes must be of sufficient size to fit over the upper end; and in order to substantially close this space until the casing has been embedded in the mud around the pile, I employ a flexible strip 4 which is fitted to the upper side of the closure or shoe 3, to which it may be attached, and the inner edges may be upturned, or in other way brought to contact with the surface or periphery of the pile. Upon the top of this shoe, and surrounding the upper end of the pile after the casing has been lowered to the surface of the water, I place a mass of soft concrete which may be tamped or otherwise compressed so as to fit closely around the pile and upon the top of the shoe and the flexible gasket. As a further protection, I may make a channel around the inner periphery of the opening in the bottom of the shoe, and in this channel I may fit a gasket 5 of rope, or other suitable flexible material. When the casing thus prepared is let down through the surface of the mud and is afterward driven, the shoe, with the gaskets 4 and 5 and the filling of concrete, will prevent the entrance of any mud or material forming the bottom into which the casing is to be driven; and the soft concrete around the pile also serves to strengthen and support the casing at this point, and prevent its rupture when being driven. Any suitable guiding means may be employed to maintain the pile in the center of the casing, one of such means being shown in the present case by the shoe which is secured to the bottom of the casing. After the casing has been sunk to its final position, the remainder of the space around the pile may be filled by concrete, which will be introduced and tamped in the usual manner.

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

1. In combination with a driven pile and a concrete casing therefor, a shoe having a central opening to fit around the pile, and

a filling of soft concrete upon the shoe and around the pile while the casing is being driven.

2. The combination with a driven pile and a concrete casing therefor, of a shoe substantially closing the lower end of the casing having a central opening surrounding the pile, a flexible gasket surrounding the pile on the upper side of the shoe, and a similar

gasket fitting the channel around the lower side of the shoe.

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

FREDERICK A. KOETITZ.

Witnesses:

M. D. BROWN,

W. D. BELL.