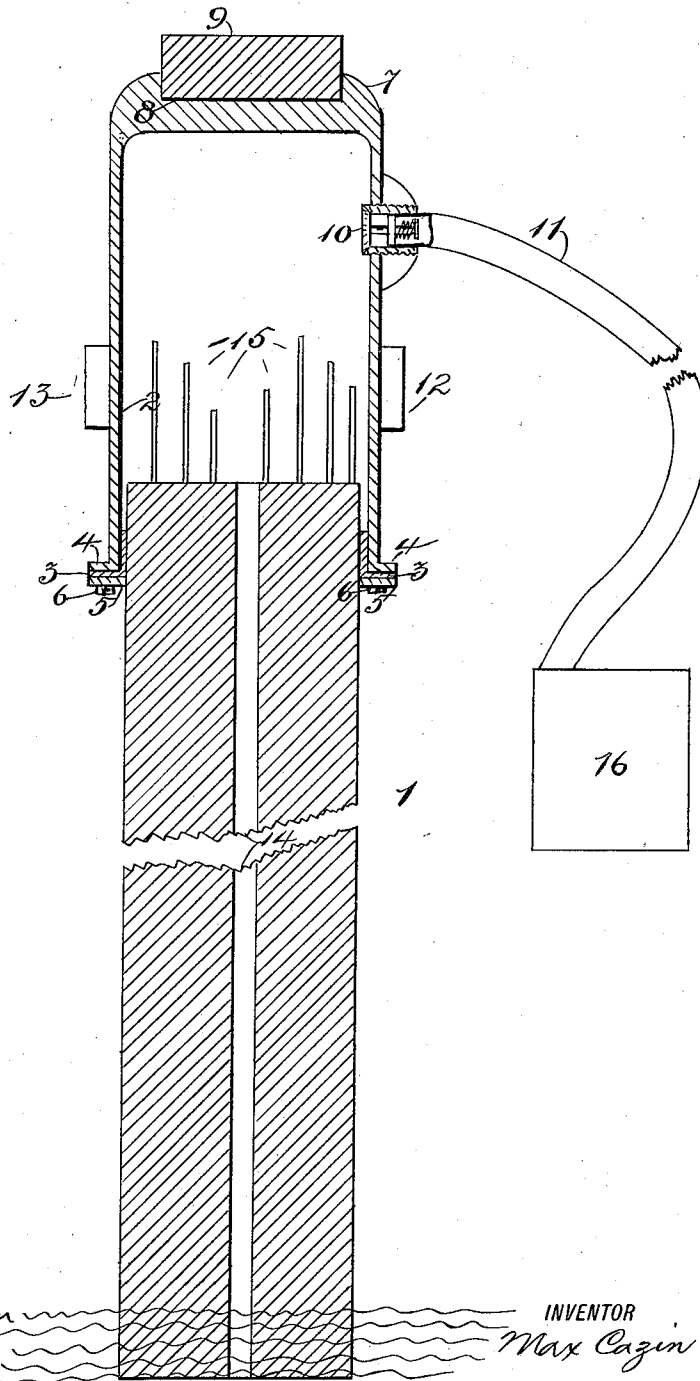


M. CAZIN.
 PILE DRIVING DEVICE.
 APPLICATION FILED OCT. 19, 1911.

1,029,102.

Patented June 11, 1912.



WITNESSES:
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MAX CAZIN, OF HAMILTON, CALIFORNIA.

PILE-DRIVING DEVICE.

1,029,102.

Specification of Letters Patent.

Patented June 11, 1912.

Application filed October 19, 1911. Serial No. 655,464.

To all whom it may concern:

Be it known that I, MAX CAZIN, a citizen of the United States of America, residing in the town of Hamilton, in the county of Glenn and State of California, have invented certain new and useful Improvements in Pile-Driving Devices, of which the following is a specification.

My invention relates to the art of driving piles, and especially to means for driving piles by blows from a hammer, and it has for its object to provide new and improved means for driving concrete and other piles through the agency of hammer blows in such a manner that the blows will be uniformly distributed over the top of the pile.

Other objects are to provide means for augmenting the churning action at the bottom of the pile due to jets of water impressed on the mud in that neighborhood by the hammer blows; and to provide means for driving by hammer piles which have reinforcing rods projecting above their tops.

With the above objects in view, my invention consists in a hydraulic pile-driving cap arranged to transmit the hammer blows to the top of the pile through a body of liquid, as water.

It also consists in a connection between the bottom of the pile, through a hole in the pile or a pipe, with the water chamber of the cap, whereby the hammer blows eject the water about the region of said bottom in powerfully augmented jets.

It also consists in the novel parts, combinations and arrangements set forth in the following description, particularly pointed out in the claims, and illustrated in the accompanying drawing, which is a vertical central sectional view of my hydraulic pile-driving cap in position, and the pile which it is capping.

Describing first the construction of my cap, I provide a metal cylinder 2 adapted by its size and shape to slip over a concrete or other pile 1. A tight fit with the pile is secured by means of a gasket 3, of rubber, leather, or other suitable material, which is secured to the flange 4 of the cylinder by the gasket ring 5, and the bolts 6, which may be of any desired number, said gasket being arranged to fit between the walls of the cylinder and surface of the pile. The gasket aforesaid makes a water-tight joint between the inner surface of the cylinder and the outer surface of the pile. At the

upper end 7 the cylinder is hermetically sealed, the head being made of the requisite thickness to allow a socket 8 to be formed therein for holding a metallic or wooden bumper 9 for receiving the blows of the hammer. A check valve 10 is provided in the cylinder, and a pipe 11 connects said valve with the source of water supply, indicated at 16, for continuously supplying water to the cylinder chamber, to replace the amount driven out through the hole or pipe 14 in the pile. Guide pieces 12, 13, are provided on the cap to hold the same in position in the pile-driving guides. The hole 14 extends through from the top of the pile, which opens in the cylinder, to the bottom of the pile.

The cylinder with its head forms a hollow cap, wherein the body of water is the only means of communicating the blows struck on the bumper in said head to the pile. The function of the gasket is obviously that of making the connection between the cap and the pile watertight, and is not relied on to communicate the hammer blows to the pile. Wherefore, every blow is equally distributed over the top of the pile, and may be communicated even though reinforcing rods extend above the top thereof. And every blow ejects a jet of water with great force at the bottom of the pile, aiding the driving thereof by its sluicing action.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States, modifications within the scope of the claims being expressly reserved, is:

1. In a pile-driving device, a bumper for receiving the hammer blows, and means for interposing a confined body of water between the bumper and the top of the pile.

2. In a pile driving device, a hollow cap having an open bottom and a hermetically sealed top, a bumper in said cap for receiving hammer blows, a gasket for making a water-tight joint between said cap and a pile, and a body of water filling the space between the top of said pile and the top of said cap.

3. A cap for pile-driving comprising a cylinder closed at the top and open at the bottom, a bumper in said top, an inlet for water, and a check valve in said inlet.

4. A cap for pile driving comprising a cylinder closed at the top and open at the bottom, a bumper in said top, guide pieces,

an inlet for water, and a check valve in said inlet.

5 5. Means for driving concrete and other piles having a hole or pipe extending longitudinally from top to bottom thereof, comprising a cap fitted about the top of a pile having an open bottom communicating with said hole or pipe and a closed top, a bumper in said top, an inlet for water, a check-valve
10 in said inlet and a source of water-supply for said cap.

In testimony whereof, I have hereto signed my name, as such inventor, in the presence of two subscribing witnesses, at Hamilton city, in the county of Glenn and State of California, this 11th day of October, in the year 1911. 15

MAX CAZIN.

Witnesses:

W. J. APPLGATE,
G. E. HEATON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."