

W. N. LOUQUE.

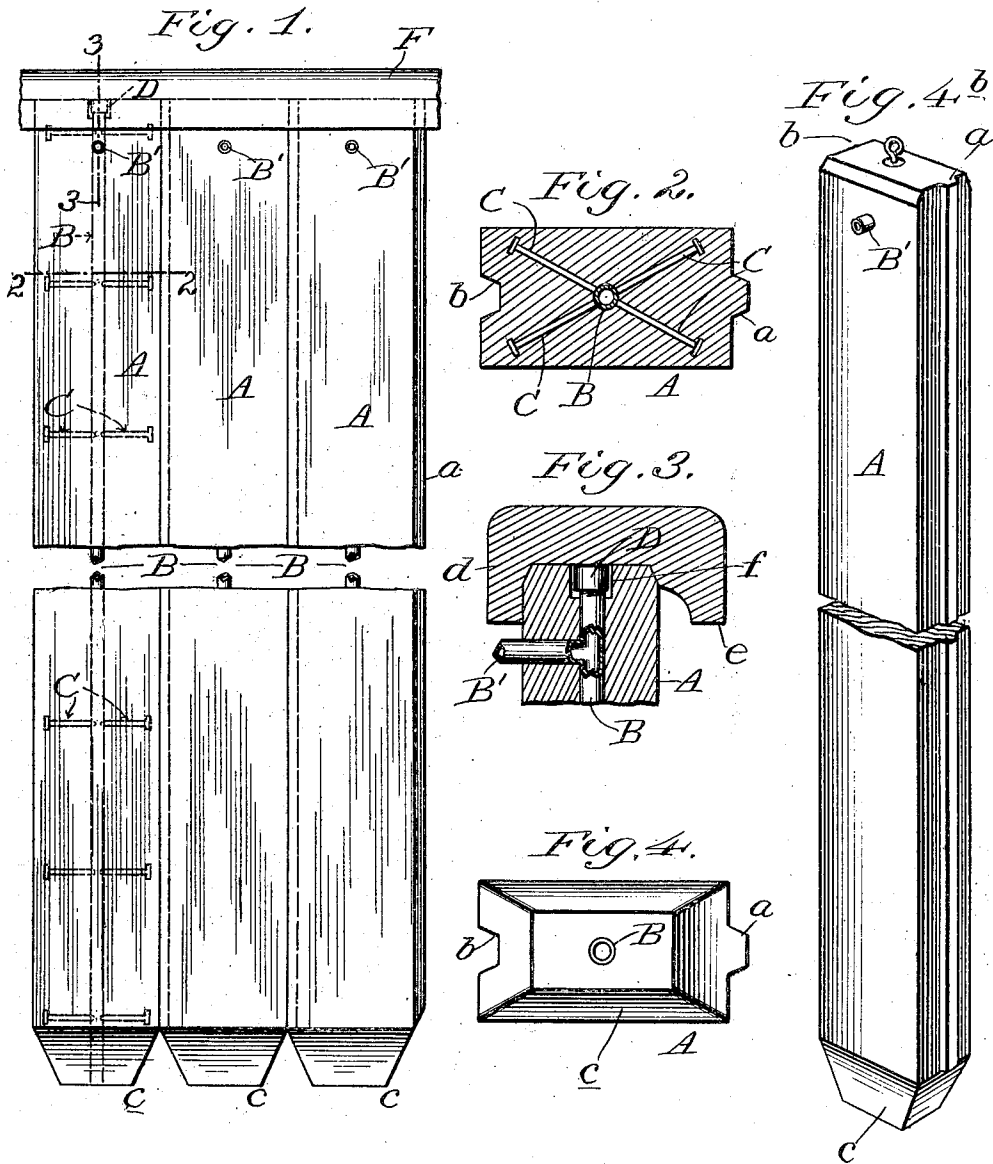
PILE.

APPLICATION FILED JULY 2, 1909.

942,653.

Patented Dec. 7, 1909

2 SHEETS—SHEET 1.



WITNESSES

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INVENTOR

William N. Louque.

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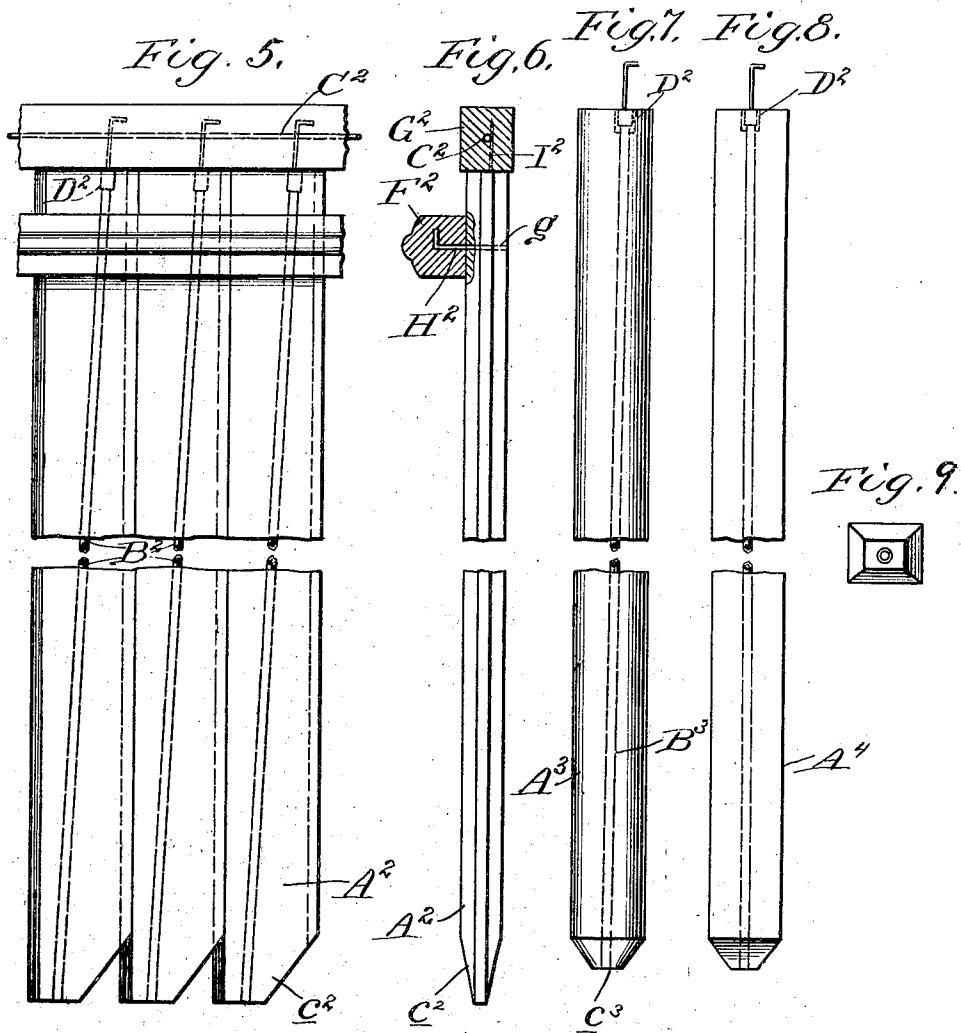
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WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM N. LOUQUE, OF NEW ORLEANS, LOUISIANA, ASSIGNOR TO WILLIAM M. WREN, OF NEW ORLEANS, LOUISIANA.

PILE.

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Specification of Letters Patent.

Patented Dec. 7, 1909.

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To all whom it may concern:

Be it known that I, WILLIAM N. LOUQUE, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented new and useful Improvements in Piles, of which the following is a specification.

My invention pertains to piles and sheet piling of concrete or analogous plastic material; and it consists in the combined reinforced and jet piles and piling hereinafter described and particularly defined in the claims appended.

In the drawings, accompanying and forming part of this specification: Figure 1 is a side elevation of a section of sheet piling constructed in accordance with my invention. Fig. 2 is a horizontal section taken in the plane indicated by the line 2—2 of Fig. 1. Fig. 3 is a detail vertical section taken in the plane indicated by the line 3—3 of Fig. 1 and showing the arrangement of the fender on the upper ends of the series of joined piles. Fig. 4 is an inverted plan view showing the lower end of one of the piles. Fig. 4^a is a detail section, and Fig. 4^b, one pile in perspective. Fig. 5 is a side elevation of a modified section of sheet piling constructed in accordance with my invention. Fig. 6 is a vertical transverse section of the same. Fig. 7 is a side elevation of an individual pile constructed according to my invention. Fig. 8 is a similar view of another form of individual pile. Fig. 9 is an inverted plan of the lower end of the latter.

Referring by letter to the said drawings, and more particularly to Figs. 1 to 4, thereof: A A are piles such as are designed to be combined in a sheet, as shown in Fig. 1. Each of the said piles A is formed of concrete or analogous plastic material, and is provided with an upright tongue *a* and an upright groove *b* and has its lower end tapered, as indicated by *c*. Extending throughout the length of the pile in the vertical center thereof is a pipe B, which serves as a combined reinforcement and jet. The said pipe B is provided adjacent the upper end of the pile with a lateral branch B', designed for the connection of a force pump (not shown), or other means for supplying water under pressure to the pipe B which is of metal, with a view of assisting in the driving of the pile. At intervals of its length the pipe B has fixed thereto horizon-

tal and preferably headed arms C which are arranged, by preference, in the manner shown in Fig. 2, relative to the pipe, and are designed in addition to tying the concrete or other plastic material to the pipe and reinforcing the concrete or other plastic material, to sustain the load when the pile is lifted or suspended by means attached to the upper end of the pipe. The said means may be connected detachably with the upper end of the pipe B in any suitable manner as through the medium of the cap D, Fig. 4^a, which is designed to be turned into threaded engagement with the pipe, and bears an eye E.

When a plurality of piles, such as described, are to be combined in a sheet they are arranged edge to edge with the tongue *a* of one in the groove *b* of another, and over the upper ends of the combined piles is arranged a continuous fender F, which is also, by preference, of concrete or analogous material. The said fender is shaped in cross-section as shown in Fig. 3, and is therefore adapted to rest snugly upon the upper ends of the series of piles and lap over one side of the piles as indicated by *d*. It will also be observed by reference to Fig. 3 that the opposite side *e* of the fender overhangs and is separated by an intervening space from the adjacent side of the piles, and that therefore the fender is adapted to serve the additional function of a breakwater. It will further be noted at this point that the fender straddling and snugly fitted on the piles as stated serves as a cap, and hence retains itself in position and at the same time lends increased strength to the individual piles comprised in the sheet.

It will be gathered from the foregoing that each pile A may be lowered to position by means connected with its pipe B through the medium of the before mentioned cap D and the eye E thereon, after which the cap may be removed, or, on the other hand, the cap may be left on the pipe and the eye E be cut off or otherwise removed; the cap serving in that case to close the upper end of the pipe. For convenience in turning the cap D on or off the pipe B, a countersink *f*, such as best shown in Fig. 3, is provided in the upper end of the pile around the upper end of the pipe.

It will be understood that by reason of the pipe B having the lateral branch B' the

lower end of the pile may be supplied with a head of water for jet purposes while the pile is being driven to position by hammer blows or other means applied to its upper end.

When the piles are properly positioned and are held in sheet form by the tongues and grooves, the fender F is placed in position over the upper ends of the plurality of piles, as shown in Figs. 1 and 2, to serve the purposes heretofore ascribed to it.

In the modified construction shown in Figs. 5 and 6, the piles A² are provided with tongues and grooves a² and b², and their lower ends c² are tapered in the manner shown. It will also be noticed that said piles are provided with metallic pipes B² constituting combined reinforcements and jets, but that said pipes B² are inclined in their respective piles, this latter in order to enable each pipe to better reinforce its respective concrete pile throughout.

The piles A² are adapted to be lowered to position and combined in a sheet in the manner before described with reference to the improvements shown in Figs. 1 to 4^a, and each pile A² is provided in its upper portion with a transverse aperture g.

The piles A² combined in a sheet as stated are equipped with a fender F² and a cap G² both of which are formed of concrete or other plastic material and are continuous as illustrated; the fender F² being secured in position by reinforcing anchors H² which are embedded in the fender and secured in the before mentioned apertures g of the piles, and the pile G² being secured in position by reinforcing anchors I², embedded in the cap and secured to the upper end portions of the pipes B². It will also be observed that a reinforcing rod C² extends longitudinally through the cap G². Caps D² may be used to connect pipes B² and anchors I².

In Fig. 7 is shown an individual pile A³, cylindrical in form, made of concrete or analogous material and having a combined reinforcing and jet pipe B³, of metal, and also having a lower beveled end c³.

In Figs. 8 and 9 I show a pile A⁴ which is similar to the pile A³ of Fig. 7 with the exception that it is rectangular in cross-section.

It will be noted here that all the several forms of piles disclosed are adapted to be quickly and easily made and that each em-

bodies a metallic pipe which, in addition to reinforcing and strengthening the concrete or other plastic material employed, is adapted to conduct a jet of water to the lower end of the pile and in that way assist in the forcing of the pile to its working position.

The constructions herein illustrated and described constitute the best practical embodiments of my invention that I have as yet devised, but it is obvious that in the future practice of the invention such changes or modifications may be made as do not involve departure from the scope of my invention as defined in the claims appended. I would also have it understood that the *modus operandi* may be varied without affecting my invention. For instance when it is found necessary to use two jets with a view of speedily prosecuting the work, an additional jet may be used; the same being placed on the outside of the pile, and being withdrawn after the pile is driven.

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

1. A pile comprising a body of plastic material tapered at its lower end, a pipe embedded and permanently secured in the body and extending between the upper and lower ends thereof to form a combined reinforcement and jet and having its upper end threaded, and an interiorly threaded cap arranged on the upper threaded end of the pipe and below the upper end of the body of plastic material and equipped with a device adapted for the connection of means employed to lower the pile to position.

2. A pile comprising a body of plastic material tapered at its lower end, a pipe embedded and permanently secured in the body and extending between the upper and lower ends thereof, arms fixed to and extending laterally from the pipe at intervals in the length thereof and also embedded and permanently secured in the plastic body, a cap threaded on the upper end of the pipe and arranged below the upper end of the body, and an eye on said cap.

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

WILLIAM N. LOUQUE.

Witnesses:

H. S. G. BURTON,
ARTHUR J. SABATUT.