C. I. DEANE.

PILE.

APPLICATION FILED FEB. 24, 1913.

1,111,366.

Patented Sept. 22, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

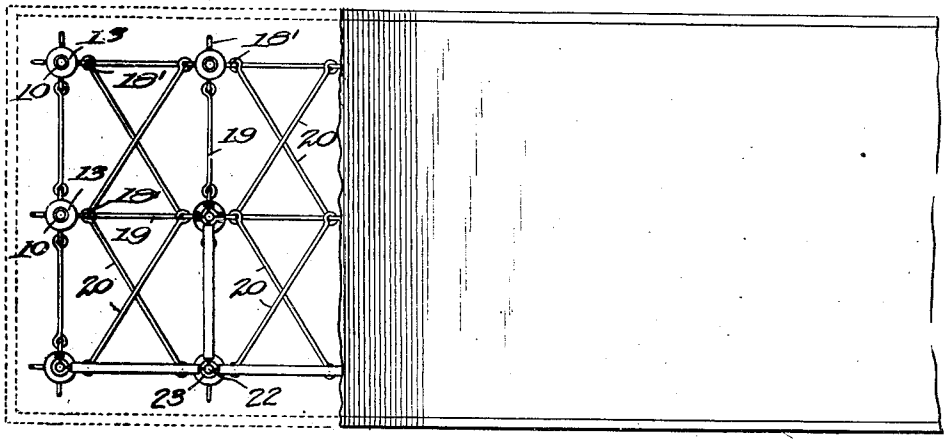
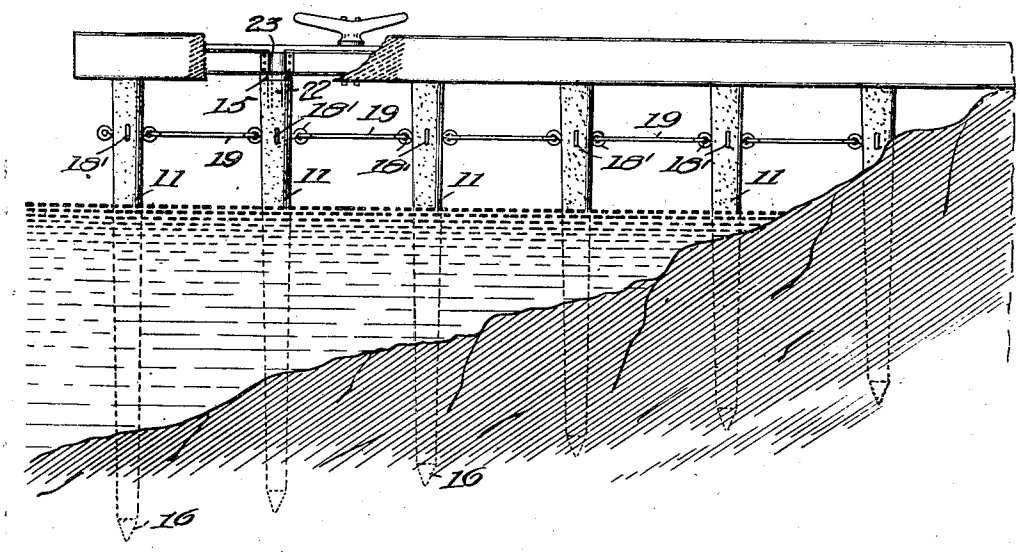


Fig. 2.



WITNESSES

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2 SHEETS—SHEET 2.

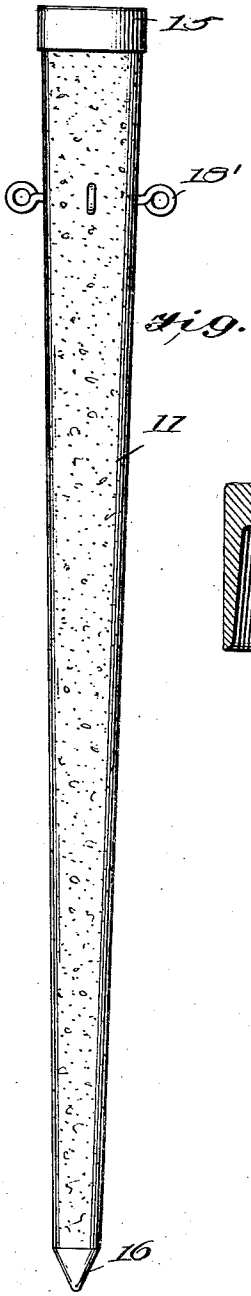


Fig. 3.

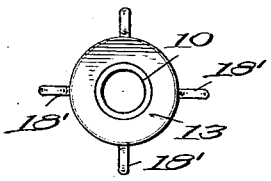


Fig. 4.

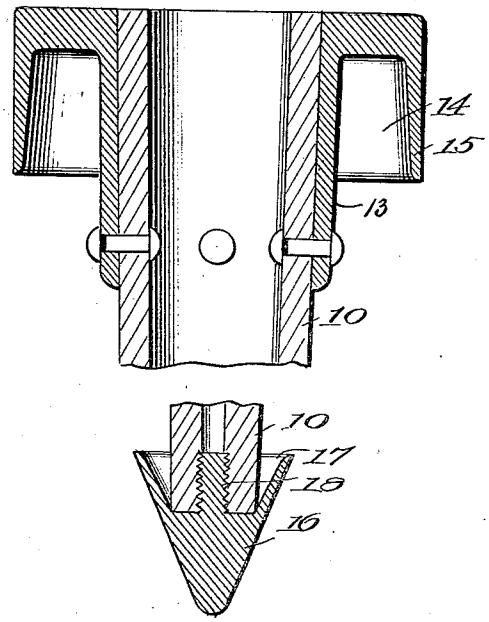


Fig. 6.

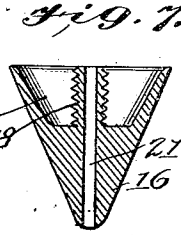


Fig. 7.

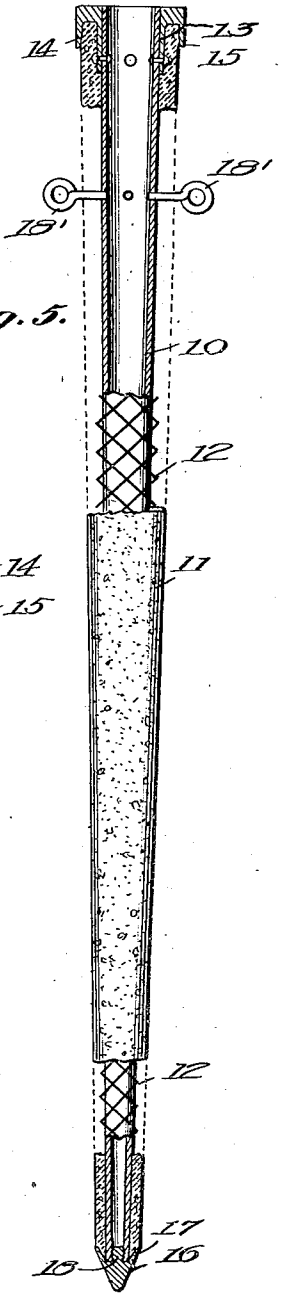


Fig. 5.

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PILE.

1,111,366. Specification of Letters Patent. Patented Sept. 22, 1914.

Application filed February 24, 1913. Serial No. 750,288.

To all whom it may concern:

Be it known that I, CHARLES I. DEANE, a citizen of the United States, residing at Walla Walla, in the county of Walla Walla and State of Washington, have invented certain new and useful Improvements in Piles, of which the following is a specification.

This invention relates to piles which are formed of reinforced concrete, and its object is to provide a pile which can be easily and cheaply constructed, and which is strong and durable.

In order that the invention may be better understood, reference is had to the accompanying drawings, in which—

Figure 1 is a plan view of a pier or dock, partly broken away, showing the method of using the piles. Fig. 2 is a side elevation of the pier or dock, partly broken away. Fig. 3 is an elevation of one of the piles. Fig. 4 is a top plan view thereof. Fig. 5 is an elevation of the pile, partly in section. Fig. 6 is a longitudinal section of the metal reinforcing core of the pile. Fig. 7 is a sectional view of a modified form of driving shoe.

Referring specifically to the drawings, my improved pile comprises a central steel or other metallic core 10 in the form of a tapered tube of suitable length according to the desired length of the pile, and a shell 11 of concrete in which said core is embedded. The pile tapers in the direction of its lower end as usual. If desired, the concrete shell may have a suitable reinforcing element 12.

The pile has a head 13 comprising a steel ring which is riveted or otherwise rigidly fastened to the upper end of the core 10 and encircles the same. The head has a bottom recess 14 formed by providing the ring with an annular flange 15 surrounding the same in spaced relation and concentrically.

The bottom of the pile is armed with a steel driving shoe 16 which latter is solid and substantially conical. The shoe has a top recess 17, at the center of which is an upstanding threaded stud 18 which is screwed into the lower end of the core 10. The recess 17 tapers inwardly and the lower end of the core seats squarely on the floor thereof. The diameter of that portion of the core 10 which extends into the recess 17 is less than the diameter of the latter, so that a portion of the recess is left open to receive the concrete material at the bottom of the pile. In the same manner, the material at the top of the pile fills up the recess 14. Thus, a support for the concrete at the ends of the pile is had, and the shell of this material surrounding the core 10 is firmly held and braced. The shell is flush with the outer surface of the shoe 16.

At 18′ are shown eye-bolts which may be screwed into the core 10, and they project from the surface of the pile a sufficient distance to permit the attachment of stays 19 and lateral bracing rods 20 as shown in Figs. 1 and 2.

The pile will be made complete, ready for driving, and it may be driven in the usual manner, as any ordinary pile. If the jet system is used, the shoe 16 will have a vertical aperture 21 extending entirely through the same, as shown in Fig. 7, to afford an outlet at the point of the shoe. If the pile is not to be jetted, the core 10 need not be tubular, but may be solid. If a tubular core is employed, the same may be filled with concrete, after the pile has been driven, leaving enough of the core unfilled at the top to permit the insertion of a post 22 for the attachment of the connections 23 shown in Figs. 1 and 2. This post is of such size that a railing post may be secured to it if required.

Figs. 1 and 2 show how the pile may be employed in a pier or dock structure, and the system of stays and bracing employed.

The pile herein described is adapted for foundations, piers, docks, or any other construction requiring a system of piles, and by its use the cost of the construction is lowered without lessening the efficiency of any of its parts.

I claim:

1. A pile comprising a metallic core, a head permanently fastened to the upper end of the core, a driving shoe permanently fastened to the lower end of the core, and a concrete shell rigidly attached to and surrounding the core between the head and the shoe the head covering the upper end of the concrete shell, said core, and its head and shoe being permanently incorporated in and forming a part of the pile and the means whereby the pile is driven.

2. A pile comprising a metallic core, a ring fastened to and encircling the core at the top thereof and having a flange sur-

rounding the ring in spaced relation, and a concrete shell rigidly attached to and surrounding the core and filling at its upper end the space between the aforesaid ring and its flange, said core being permanently incorporated in and forming a part of the pile.

3. A pile comprising a metallic core, a ring fastened to and encircling the core at the top thereof, and having a flange surrounding the ring in spaced relation, a driving shoe fastened to the lower end of the core, and a concrete shell rigidly attached to and surrounding the core and filling at its upper end the space between the aforesaid ring and its flange, and extending at its lower end to the shoe, said core being permanently incorporated in and forming a part of the pile.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES I. DEANE.

Witnesses:
J. G. THOMAS,
E. E. SAUZE.