2 Sheets—Sheet 1.

M. L. PARRY.

PILES FOR BULKHEADS AND OTHER STRUCTURES.

No. 194,309. Patented Aug. 21, 1877.

Fig. 1. Fig. 2. Fig. 3. Fig. 4.

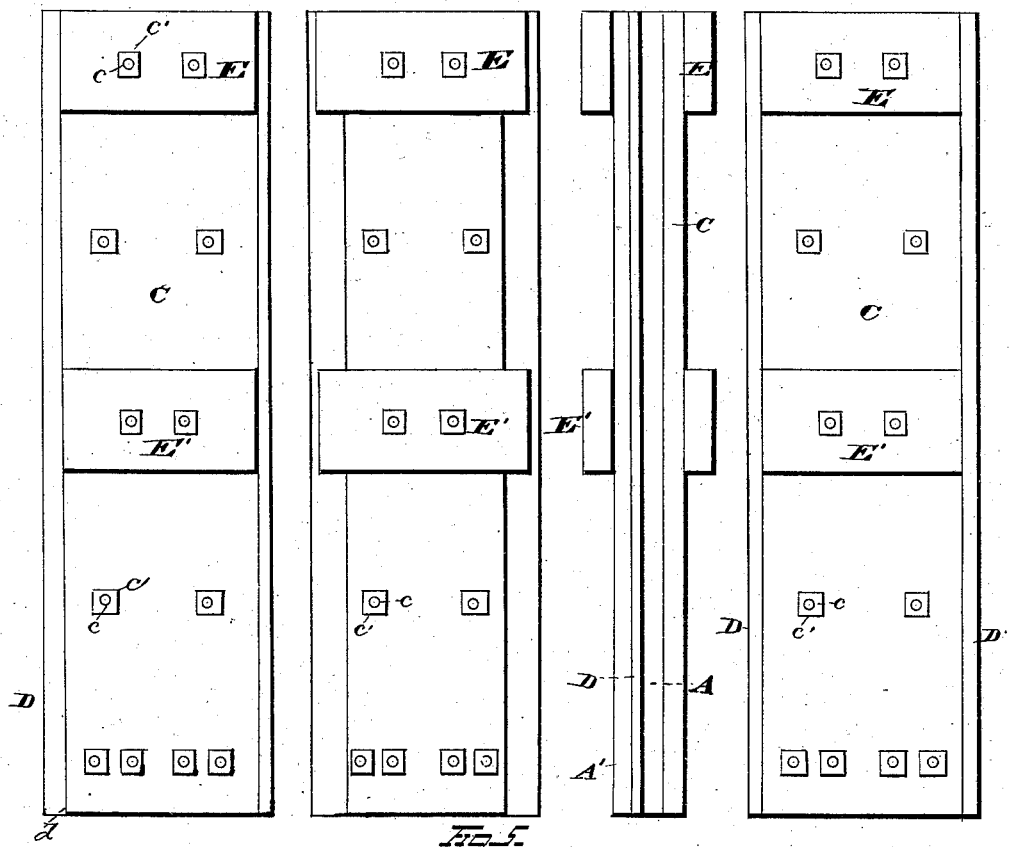
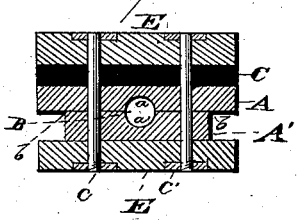


Fig. 5.



WITNESSES

Ed. L. Nottingham,

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2 Sheets—Sheet 2.

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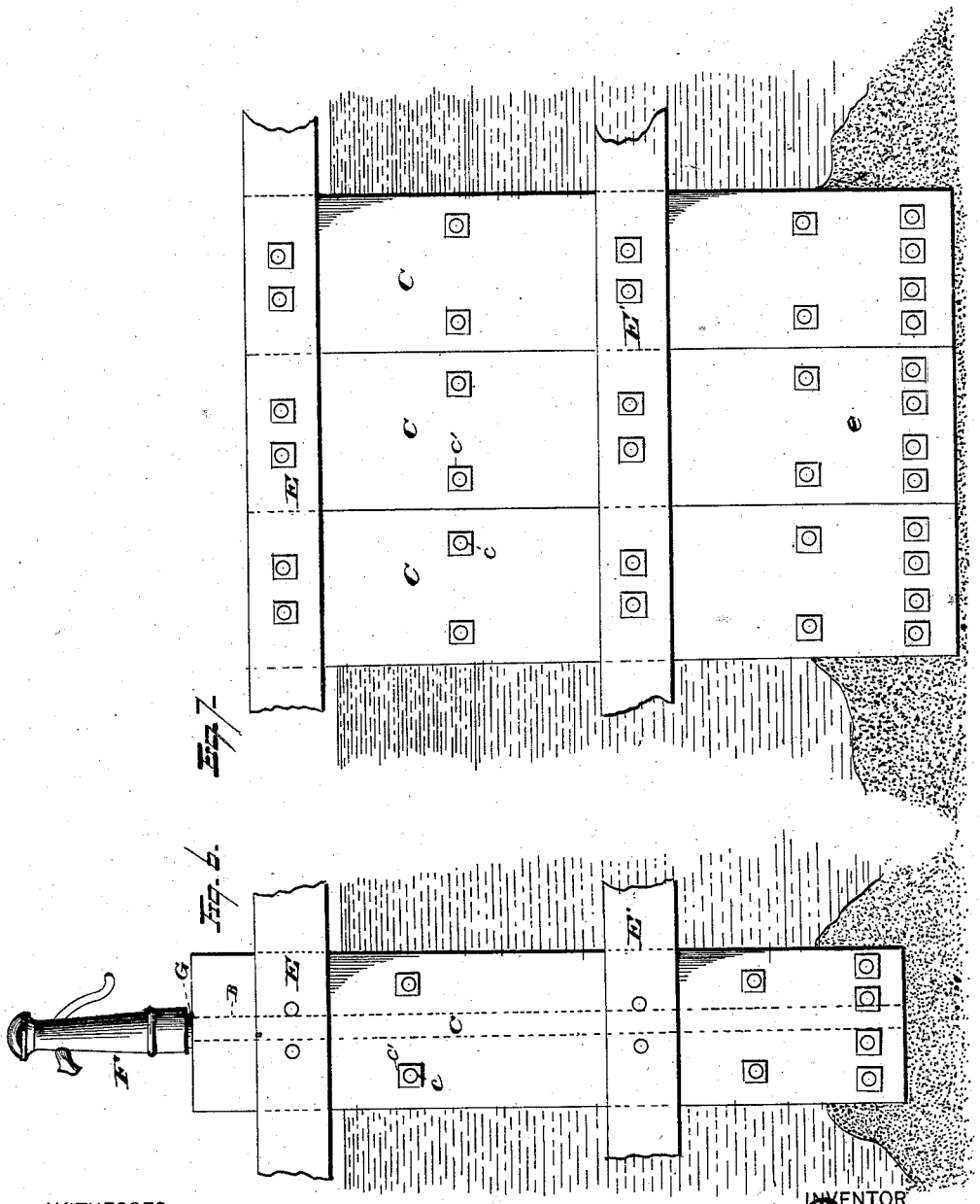

Fig. 1.

Fig. 2.

WITNESSES

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UNITED STATES PATENT OFFICE.

MORGAN L. PARRY, OF GALVESTON, TEXAS.

IMPROVEMENT IN PILES FOR BULK-HEADS AND OTHER STRUCTURES.

Specification forming part of Letters Patent No. **194,309**, dated August 21, 1877; application filed July 19, 1877.

To all whom it may concern:

Be it known that I, MORGAN L. PARRY, of Galveston, in the county of Galveston and State of Texas, have invented certain new and useful Improvements in Piles and Method of Sinking Same; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improved pile and method of sinking the same, the object of the invention being to provide a concrete-faced bulk-head composed of piles, each of which may be sunk in position by continuously forcing the sand from beneath the lower end of the pile.

My invention consists, first, in a pile having a concrete facing secured to its outer face or side; second, in a pile consisting of two or more pieces of plank or timber, the abutting faces of which have semicircular grooves formed therein, whereby a passage-way or conduit is formed through the pile when the parts of the same are secured in position; third, in the several details of construction, as will more fully appear from the following description and claims.

In the accompanying drawings, Figure 1 represents a plan view of my invention; Fig. 2, a rear view. Fig. 3 is an edge view. Fig. 4 shows the side strip in place, to serve as a mold for applying the cement. Fig. 5 is a cross-section of my improved combination pile. Fig. 6 illustrates the pile while being sunk in position. Fig. 7 is a section of a bulk-head, constructed of piles embodying my invention.

A A′ represent plank of any desired material, (cypress being preferably used, as it withstands for a long time the action of water,) which planks have semicircular grooves *a a′* formed in their abutting sides or faces, so that when they are secured in place a conduit or water-passage, B, is formed within and through the entire length of the pile. Plank A overlaps plank A′, thereby forming rabbets *b* on each side of the pile. C is cement, and the same may be formed of any desired material as will be found best suited for any given locality. Cement C is secured to the outer face of the pile as follows: Narrow side pieces D D′ are attached to the side edges of the pile, the pieces projecting above the face the desired thickness of the layer of cement, and thereby in connection with the pile forming a mold, within which the cement is evenly spread, and firmly secured by any number of bolts, *c*, which latter are provided with large heels *c′*, in order to firmly secure the cement in place. It is evident that metallic or wooden plates may be secured against the outer surface of the cement by the bolts *c*, to further provide against the displacement of the cement. After the cement has been applied the side pieces D D′ are detached from the edges of the pile and secured to the rabbeted edge parallel with the face of the pile, thereby constituting rabbets *d d*. As the piles are secured in place they are sunk in such position that their edges shall abut closely against each other, thus forming a continuous and unbroken bulk-head.

The piles are sunk in place as follows: The two horizontal lines or string-pieces E E′, made of heavy plank, are temporarily placed in position of the water-line. Each string-piece is composed of outer and inner planking *e e′*, placed a sufficient distance apart to allow of the insertion of the piles between the same. A pump, F, of any approved form is then attached to a nipple or coupling, G, inserted in the upper end of the pile. The pump, being operated, serves to force the sand from beneath the pile, and the latter is gradually lowered until its upper end comes flush with the upper string-piece E, when bolts are inserted through the string-pieces E E′ and the pile, thereby securing the sections of the pile together in a firm and rigid manner, and also binding the line of piles into a continuous and unbroken line of bulk-head, which latter, as already observed, will be provided with a continuous outer face of concrete.

This method of building bulk-heads, while it necessitates but little and simple machinery to effect the desired object, affords a strong and finished structure, and one that will withstand the injurious effects of the water for a great length of time.

Having fully described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. A pile provided with a facing of cement, substantially as set forth.

2. A pile, consisting of two or more heavy planks, the abutting sides of which have semicircular grooves formed therein, to constitute a cylindrical passage through the pile, substantially as set forth.

3. A pile provided with a facing of cement, and a conduit through the body of the same, substantially as set forth.

4. A bulk-head made of piles, provided with outer facings of cement, the several piles being secured to each other by string-pieces, substantially as set forth.

5. A pile provided with a facing of cement and detachable side pieces, the latter serving as sides of the mold in applying the cement, after which they are adapted to be attached to the edges of the pile and constitute rabbeted edges for the same, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of July, 1877.

MORGAN L. PARRY.

Witnesses:
ROBT. K. CALLENDER,
JULIUS A. BOILLIN.