(No Model.)

J. W. PUTNAM.

PILE.

No. 265,141. Patented Sept. 26, 1882.

Fig. 1.

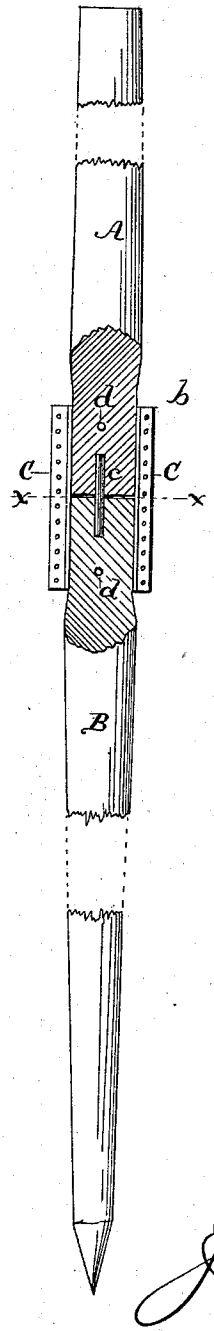


Fig. 2.

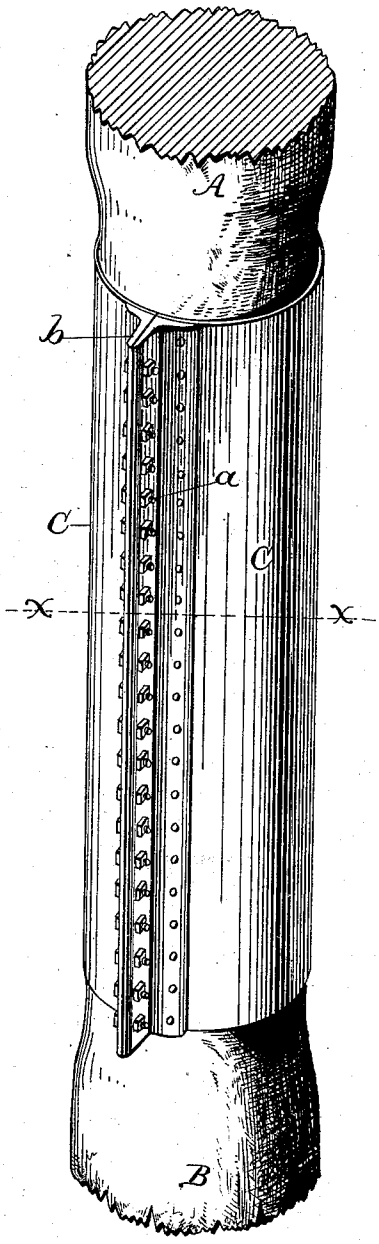
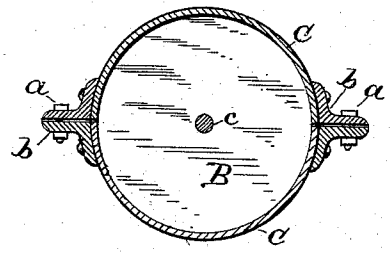


Fig. 3.



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JOSEPH W. PUTNAM, OF NEW ORLEANS, LOUISIANA.

PILE.

SPECIFICATION forming part of Letters Patent No. 265,141, dated September 26, 1882.

Application filed May 19, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH W. PUTNAM, of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Improvement in Piles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation, partly in section and partly broken away, showing my improved sectional pile. Fig. 2 is an enlarged perspective view of the splicing-sleeve for making the middle joint. Fig. 3 is a cross-section taken at the joint or through the lines *x x* of Figs. 1 and 2.

My invention relates to an improvement in piles, such as are used as a substructure for bridges, &c.; and it has for its object to provide a pile which shall be applicable for building high bridges over deep streams of running water. In such places the proper elevation of the bridge above the water, the depth of the water, and the necessary penetration of the pile into the mud or clay to get a solid support is such that it is not practicable to get piles from single trees of sufficient length and sufficient diameter to give them requisite strength to resist the current. Sectional piles have heretofore been used, however, in which the two adjacent ends of the piles were connected by a socket having double-cup-shaped ends, or a plain tubular sleeve; but pile-sections joined in this way were not strong as against lateral bulging at this point, and when this once commenced the blows of the pile-driver, not being delivered in true alignment, exaggerated this difficulty, and the pile was forced out of line and became insecure for sustaining the bridge. Another method for joining pile-sections is to connect them by dowel-joints; but this is subject to the same objection before noted.

My invention consists in a pile composed of two tree-sections having their larger or butt ends sawed off square and abutting against each other, in combination with two semi-tubular metal clamp-sections of a slightly-smaller diameter than the pile-ends, which semi-tubular sections have flanged edges, which, when bolted together, draw the said splice-sections together, compressing the ends of the piles and covering the joint, as hereinafter more fully described.

In the drawings, A B represent the two sections of a pile, which are made of separate trunks of trees sawed off square at the butt and with their butt-ends juxtaposed or abutting against each other at the middle of the pile, so that the strongest part or greatest diameter of the pile is in the middle at the joint, from which point the pile tapers to a smaller diameter at the top, and also to a smaller diameter at the bottom, at which end the pile is suitably sharpened or provided with a point. The abutting ends of the two pile-sections are dressed to a perfect circle, which reduces its diameter at this point to some extent, and around these dressed ends is clamped a metal splicing jacket or sleeve, C, made in semi-tubular sections of one-half-inch boiler-iron and about seven feet long, more or less, according to the size of the pile, which for the above measurements would be about two and one-fourth feet in diameter at the widest point. These splice-sections C are made of a slightly-smaller diameter than the circle of the dressed ends of the pile-sections, so that when the two semi-tubular sections are brought together by the gradual tightening of the line of screw-bolts *a*, passing through the flanges *b* of the semi-tubular sections, a powerful clamping effect is exerted, which partially compresses the wood, and, when the screw-nuts are turned up to their limit, maintains a powerful frictional contact between the sleeve and the pile-ends, rendering the piles as stiff as though they were of one solid piece of timber. This is a very essential feature of my invention, for I have found that when the strokes of the pile-driver are delivered upon the pile the heavy metal sleeve, which weighs nearly a ton, will, by reason of its different specific gravity from the wood, gradually crawl up, from its inertia, above the joint. The strong compression of the wood by clamping of the two semi-tubular sections together I have found to be the only means of firmly fixing the sleeve on the pile, so as to maintain its position against such tendency to move, without cutting into and weakening the pile.

In connection with the splice-section I may

also use an inserted dowel, *c*, of large size, and when the sleeve is very heavy its tendency to become displaced may be further resisted by pins *d*, driven through the sleeve from the outside.

Having thus described my invention, what I claim as new is—

A pile composed of tree-trunks having their butt-ends fitted together to give increased size and strength to the middle of the pile and dressed about the joint to a circle, in combination with a splice-sleeve of slightly-smaller diameter composed of semi-tubular sections C C, having flanged longitudinal edges, and screw-bolts passing through the same and clamping said sleeve-sections together, substantially as described.

JOSEPH W. PUTNAM.

Witnesses:
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CHAS. A. PETTIT.