(No Model.)

J. E. ROBINSON.

METHOD OF MAKING TIGHT JOINTS IN SHEET PILING.

No. 454,382. Patented June 16, 1891.

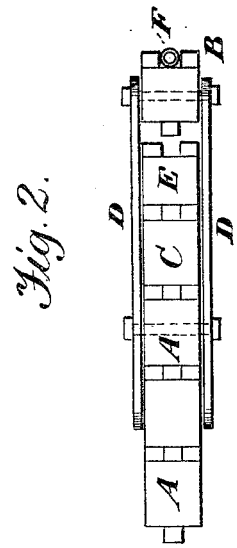

Fig. 2.

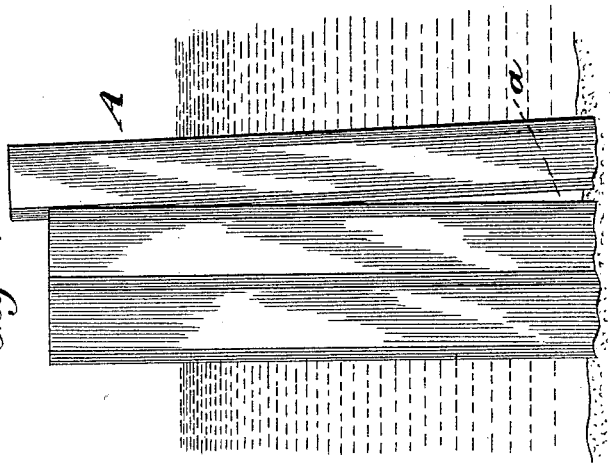

Fig. 3.

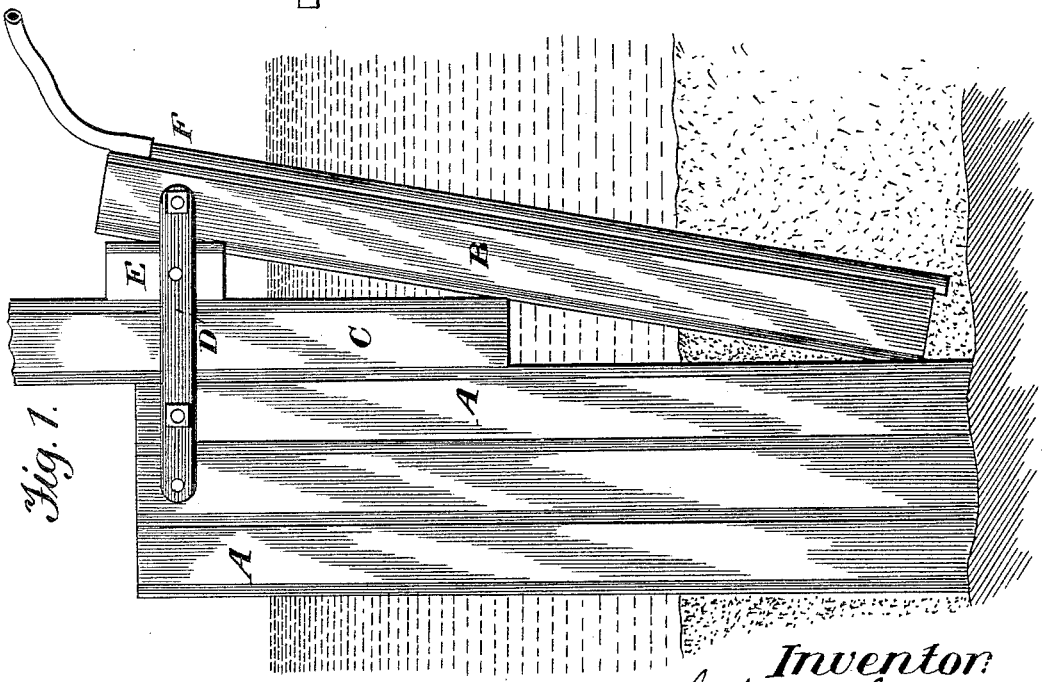

Fig. 1.

Witnesses:
A. Ruppert.
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UNITED STATES PATENT OFFICE.

JOHN E. ROBINSON, OF PHILADELPHIA, PENNSYLVANIA.

METHOD OF MAKING TIGHT JOINTS IN SHEET PILING.

SPECIFICATION forming part of Letters Patent No. 454,382, dated June 16, 1891.

Application filed March 12, 1891. Serial No. 384,731. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. ROBINSON, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Method of Making Tight Joints in Sheet Piling, of which the following is a specification, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Heretofore in the construction of cofferdams and other similar structures it has frequently happened that close joints would not be made between all the piles, with the consequence that the water and soil on the outside of the structure would leak through these open joints and cause serious trouble and delay in the prosecution of the work within it. These open joints are usually at the lower ends of the piles, for, while their upper ends are kept closely together, many conditions may arise to cause the deflection of the pile from a perpendicular line, and thus cause the adjacent piles to be separated several inches at their lower ends. To overcome this defect is the object of my invention, as will be fully set forth in the following specification.

In the drawings, Figure 1 is a view in elevation illustrative of my improved method of driving piles. Fig. 2 is a plan. Fig. 3 shows a series of piles driven in a deflective manner.

Referring to Fig. 3, A A are the piles, and *a* represents an open joint between two of them. It will be seen that, while close together at their upper ends, the two piles are separated at their lower ends sufficiently to cause serious leakage from the outside as soon as the water and soil are removed from the inclosed space.

In carrying out my improved method I drive home the first pile A in the usual manner. The next pile B is also driven in the usual manner as nearly plumb as may be, but not to the same depth as that of A. After the pile B is thus driven I force its upper end away from the adjacent pile A and tie the two in position by the straps D, as shown in Figs. 1 and 2. The third pile C is then inserted in the open space between the piles A and B and a suitably-shaped block E inserted between the piles B and C to keep the latter closely against the pile A at its upper end. It is obvious that as the pile C is driven home it will force the lower end of the pile B away from the pile A, for their upper ends, being tied together by the straps D, cannot be further separated. The resistance offered by the soil at the lower end of the piles A and B will prevent any further movement of the pile B than is absolutely necessary for the passage of the pile C between them, and as the block E will keep the pile C close to A at the top it is clear that a close joint will be formed between the piles A and C. In order that the soil may not offer too much resistance to the movement of the pile B, I use a pipe F to convey water under pressure to its lower end, the water loosening and washing the soil out of the way. After the pile C is driven home the upper end of the pile B is pushed away from it and another pile driven between those B and C, and so on, the pile B being gradually pushed along and always remaining the outer one.

Having described my invention, I claim—

1. The method herein described of making tight joints in sheet piling, which consists in first driving two piles closely together, then separating them at their upper ends to a limited and fixed extent, and then driving another pile between them, and thereby separating their lower ends the width of the mediate pile only, substantially as and for the purpose specified.

2. The method herein described of making tight joints in sheet piling, which consists in driving two or more piles closely, or nearly so, together, forcing the upper end of the outer pile away from the other piles to a limited and fixed extent, inserting another pile in the space between the outer pile and the others, loosening the soil at the bottom of the outer pile, and then driving the mediate pile home and forcing the bottom of the outer pile away from the others the width of the mediate pile only, substantially as specified.

In testimony whereof I have hereunto set my hand and seal.

JOHN E. ROBINSON. [L. S.]

Witnesses:

E. CRUSE,

G. M. FINLEY.