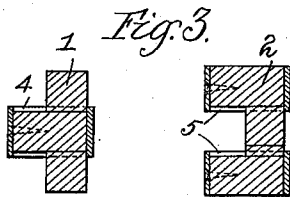
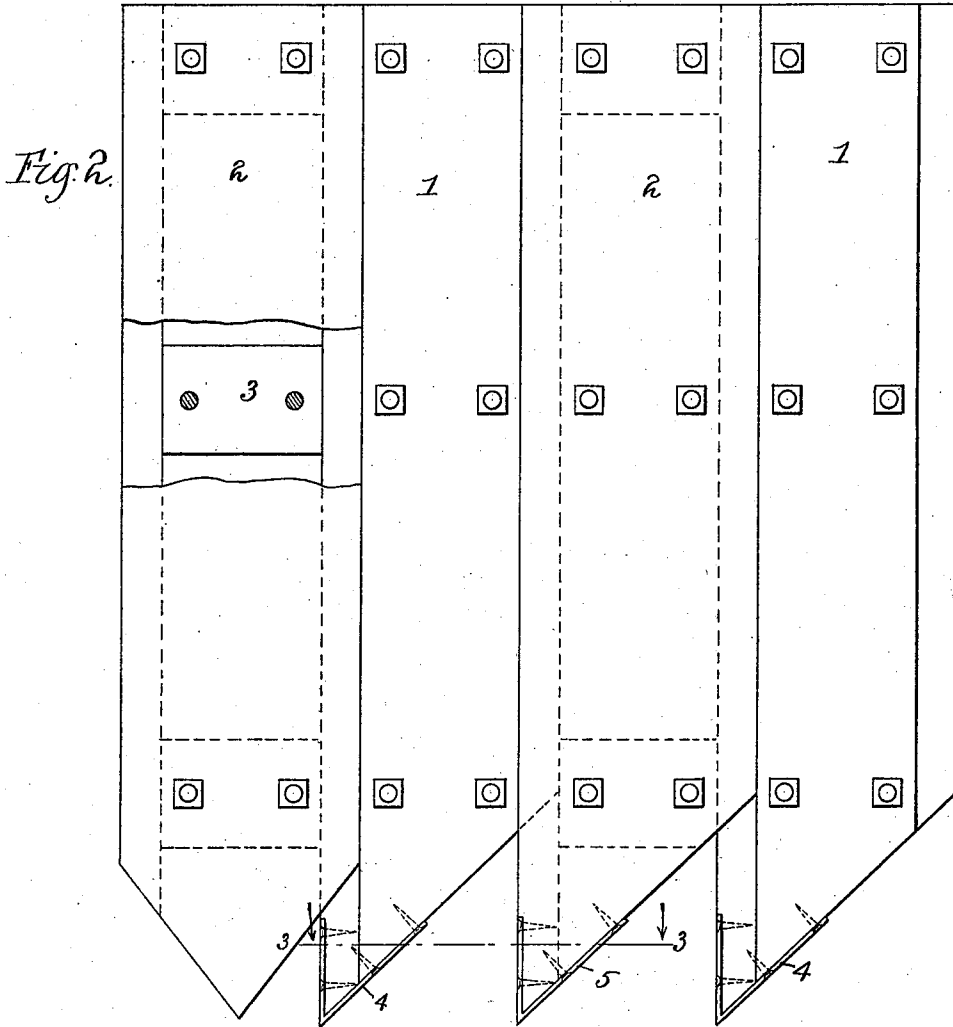
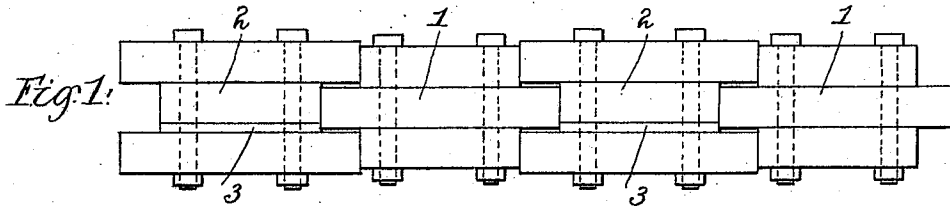


(No Model.)

E. R. BEARDSLEY.
SHEET PILE.

No. 577,942.

Patented Mar. 2, 1897.



Witnesses.

Wm. M. Rheems
Wm. J. Hanning

Inventor
Edwin R. Beardsley
by Wm. Johnson
Atty.

UNITED STATES PATENT OFFICE.

EDWIN R. BEARDSLEY, OF CHICAGO, ILLINOIS.

SHEET-PILE.

SPECIFICATION forming part of Letters Patent No. 577,942, dated March 2, 1897.

Application filed March 7, 1896. Serial No. 582,203. (No model.)

To all whom it may concern:

Be it known that I, EDWIN R. BEARDSLEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sheet-Piles; 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 appertains to make and use the same.

This invention relates to improvements in piles for dams or other structures of the kind, known as "sheet-piling," made ordinarily by bolting together three pieces of plank in manner forming rabbit-joints at the edges similar to ordinary flooring.

The object of the invention is to provide a pile so constructed that when being driven into the earth against a mating pile already inserted the tongue of one shall follow normally in the groove of the other without being driven out or diverging therefrom, as is now the case, and by reason of which leakage-gaps are formed at the lower ends of the piling, to prevent which requires the frequent withdrawal and reinsertion of the piling, thereby increasing the labor and expense of insertion and rendering the work uncertain when finished, and which is obviated and done away with in my invention.

The invention consists in the novel features of construction, combination, and arrangement of parts hereinafter described and set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a top end view of a series of piles embodying my invention joined together in an inserted position. Fig. 2 is a side elevation of the same, partly broken away to show one of the packing-strips; and Fig. 3, a transverse section taken on the line 3 3 of Fig. 2.

Referring to the drawings, 1 designates what may be termed the "male" pile, provided with a tongue upon both edges. Said pile is formed of three pieces of plank bolted together, as shown. Said plank are all of one thickness and the two outside pieces of equal width, while the center piece has such width that its edges project a sufficient distance beyond the edges of the outside pieces to form the matching tongues.

2 is the female pile, formed in like manner

except that the inside plank is made of less width than the outside ones, forming grooves between them adapted for the insertion of the tongues of the male pile.

3 represents packing-pieces formed of thin boards or other suitable materials of about one-quarter of an inch in thickness, more or less, depending somewhat upon the length and size of the pile, and are of sufficient breadth to form a substantial bearing between the planks. Said packing-pieces are inserted between the inner face of one of the outside planks and the adjacent face of the inside plank of the female pile, at a point through which the bolts pass securing the parts together. Said packing-pieces are adapted to increase the width of the groove, to allow ample play and freedom therein for the tongues of the mating piles.

The bottom ends of all the piles are sharpened. The one to be first inserted is cut obliquely from the center line to the edges, so that it may tend to a vertical position when being inserted, while the others are cut obliquely from one edge, forming an acute angle therewith, so that when driven the tendency shall be toward the inserted pile. The points of the last-mentioned piles are provided with shoes 4, secured thereto. Said shoes are formed of band-iron and are adapted to protect the sharp points of the piles from being broken or splintered, and are further adapted to remove the earth from either the tongue or groove of an inserted pile in advance of the one being inserted, and for this purpose the tongue-shoe is made of such width that it will just slide freely in the enlarged groove of the mating pile, projecting upon either side of the tongue and removing the dirt from the groove, leaving ample space and room for the tongue to follow therein, and in like manner the shoes 5 of the female piles project inward over the groove to sweep the dirt from the tongue of an inserted male pile, as will be readily understood.

Heretofore piles of this kind have been formed of planks of one thickness, the tongue of one fitting tightly into the groove of the other, and when thus formed it is found impossible, especially so in some kinds of soil, to prevent the tongues from driving out of the grooves, leaving gaps between the piling

at the bottom, the tops being usually held together by clamps, but which do not prevent their separation at the bottom. The only remedy for this heretofore has been to withdraw the pile and to try it again, thereby delaying the work and increasing the expense, as before stated.

It will be observed that by the use of planks of variable thicknesses a result similar to that of my invention could be obtained, but would be neither expedient nor profitable, as the desired thickness best adapted for the work to be done cannot always be known beforehand, besides involving a waste of material. The packing-pieces require less material, are readily obtained of any required thickness, and all liability of confusion in the sawing and building up of the piles is removed.

Having described my invention, I claim—
1. The combination in sheet-piling, of a pile formed of planks as described, with tongues upon both edges, and a like-formed mating pile with corresponding grooves in both edges, said grooves in said mating pile adapted to be increased in width beyond the normal

thickness of the planks forming said pile by means of packing-pieces interposed or inserted between the faces of said planks, substantially as set forth.

2. The combination in sheet-piling formed by a series of alternate piles, one of which is provided with tongues upon both edges, and the other with corresponding grooves in both edges, said grooves being enlarged in width by packing-pieces as described, of shoes secured to the lower or pointed ends of said piles; said shoes formed to project over the sides of one tongue and over the inside edges of one of the grooves in each of said piles as described, adapted to clear away the dirt or earth from the edges, and from the tongues and grooves of said piles, to prevent binding, and to allow play between said tongues and grooves, substantially as set forth.

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

EDWIN R. BEARDSLEY.

Witnesses:

HENRY ROTH,
SAMUEL D. PHILLIPS.