Jan. 16, 1940. J. L. BRUMLEY 2,187,677

PILE REPAIR UNIT

Filed Jan. 30, 1939

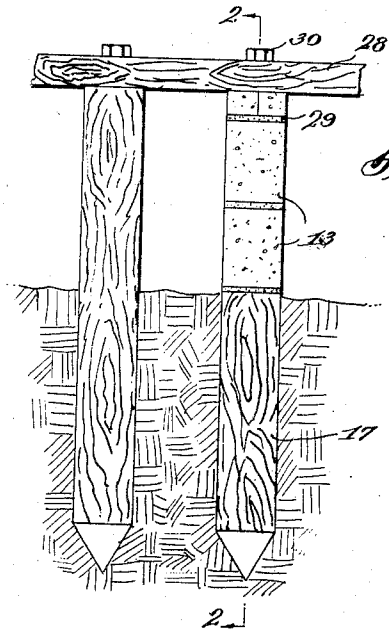


Fig. 1.

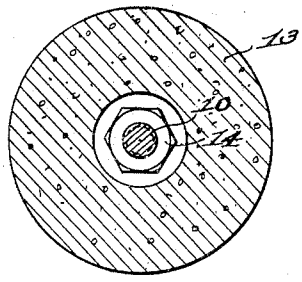


Fig. 3

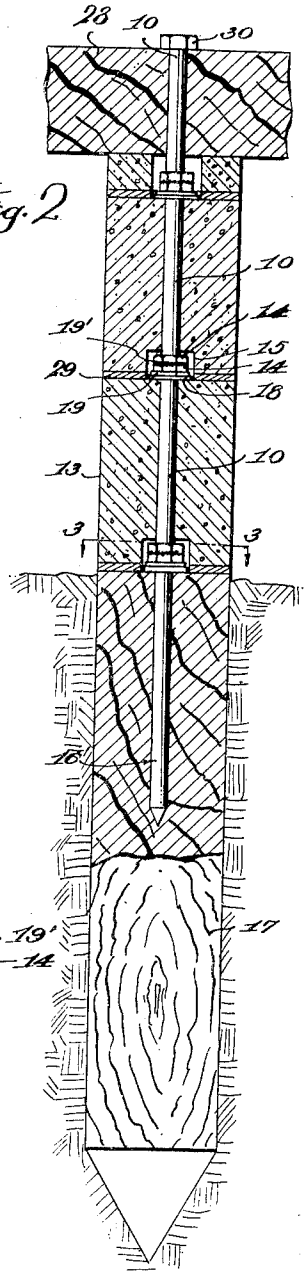


Fig. 2

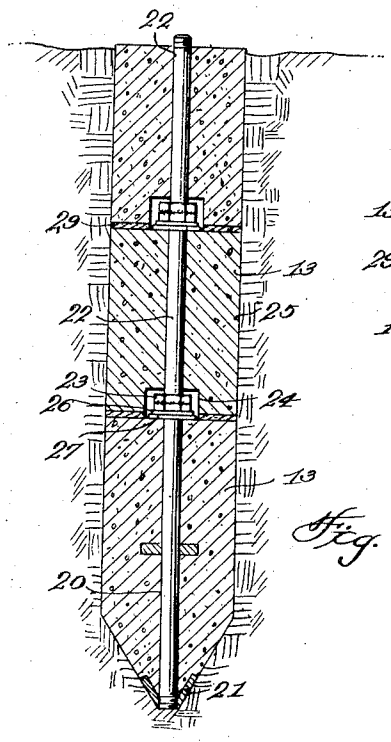


Fig. 5.

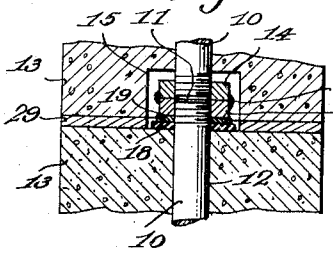


Fig. 4.

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PILE REPAIR UNIT

John L. Brumley, Sanford, Fla.

Application January 30, 1939, Serial No. 253,705

1 Claim. (Cl. 61—53)

This invention relates to a method and apparatus for repairing piling.

An object of the invention is to provide an economical method of repairing or piling under docks and buildings where a pile driver or other equipment cannot be operated.

A further object is to provide a fabricated pile formed of small blocks molded to shape and respective bolts for the blocks formed of predetermined lengths, to provide small units which may be easily assembled, under docks and buildings to repair the upper rotted parts of old piling and replace defective piling with new piling without the use of a pile driver.

A further object is to provide a fabricated pile which will be formed of a few strong simple and durable parts, which will be inexpensive to manufacture, and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claim without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawing forming part of this specification,

Figure 1 is a side elevation of a pair of piles supporting a dock, one of the piles being repaired in accordance with the invention.

Figure 2 is a longitudinal sectional view, drawn to enlarged scale, taken on the line 2—2 of Figure 1, with parts in elevation.

Figure 3 is a cross sectional view, drawn to enlarged scale, taken on the line 3—3 of Figure 2.

Figure 4 is a detail sectional view showing the threaded bolts, nuts thereon, and assembled ends of two contiguous blocks of the pile.

Figure 5 is a modified form of the pile in which the bolts extend throughout the length of the pile.

Referring now to the drawing in which like characters of reference designate similar parts in the various views, 10 designates a bolt having spaced portions 11 thereof screw threaded. The bolt extends through the axial bore 12 of a respective concrete block 13. The blocks are held in proper position upon the bolts through the medium of nuts 14 which engage the threaded portions 11 of the bolt and which are located in recesses 15 formed in one end of each block. A drift bolt 16 projects below the lowermost block as shown and is driven into the lower portion of an old pile 17 after the rotted upper portion is sawed off. A rubber washer 18 and a metal washer 19 are located on each bolt below each pair of nuts 14 as shown best in Figure 4 to compensate for expansion. The nuts may be welded together as shown at 19' or a single nut may be employed as desired.

In the modified form of the invention shown in Figure 5 the lower portion of a replacement pile is shown and in this instance the bore 20 extends through the bottom of the pile, the pile being pointed at the bottom as usual and being equipped with a cone nut tip 21. In this modified form of the invention a pipe may be first inserted through the bores of the blocks to permit water being jetted through the bottom of the pile to sink the pile whereupon the pipe may be replaced with the bolts 22 which as previously described are provided with threaded portions having nuts 23 received in recesses 24 in the ends of the blocks 25. A metal washer 26 and a rubber washer 27 are located beneath the nuts on each bolt to compensate for expansion.

In assembling the blocks and bolts underneath a dock 28 or building, the drift bolt 16 may be driven into the sound lower portion of a pile after the rotted upper portion is sawed off. The nuts may be then applied to the drift bolt and then a cement block 13 may be superposed on the driven bolt and its bolt 10 screwed down into the uppermost nut to tie the block to the pile. Then the next block with its bolt is superposed on the initially laid block and the bolt thereof screwed into the uppermost nut of the bolt of the initially laid block to tie the blocks together. This operation is continued until the pile is built up. To tie the pile to the wall 28 the bolt of the uppermost block is secured to the wharf and threaded into the uppermost nut of the block next underneath. The uppermost block may be cut to size to fill the space existing between the wharf and the uppermost block of the uniform size blocks, and may be made in half sections to facilitate application, as shown in Figure 1.

A layer of cement 29 is preferably interposed between each contiguous two blocks as the pile is built up.

From the above description it is thought that the construction and operation of the invention will be fully understood without further explanation.

What is claimed is:

A concrete unit for repairing piling, comprising a concrete block having an axial bore, a bolt in the bore having both ends threaded, there being a recess in the bottom face of the block communicating with said bore, a pair of nuts assembled as a unit and forming a tie member, said member being received in said recess, one of the nuts being threaded onto said bolt and the other nut being adapted to receive the threaded end of the bolt of a companion unit.

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