

T. C. CLARKE.  
 TEMPORARY WALL.  
 APPLICATION FILED MAY 11, 1910.

972,059.

Patented Oct. 4, 1910.

Fig. 1.

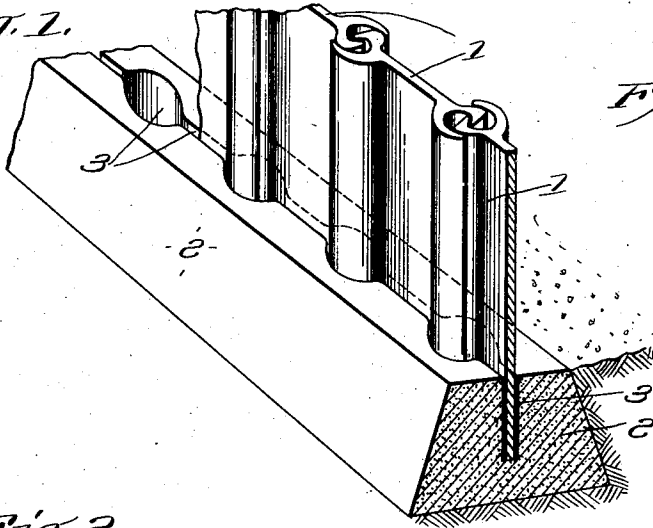


Fig. 8.

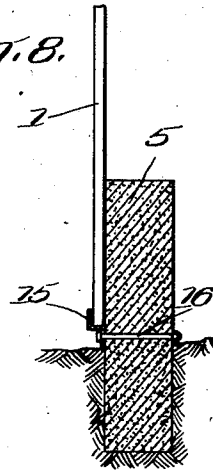


Fig. 2.

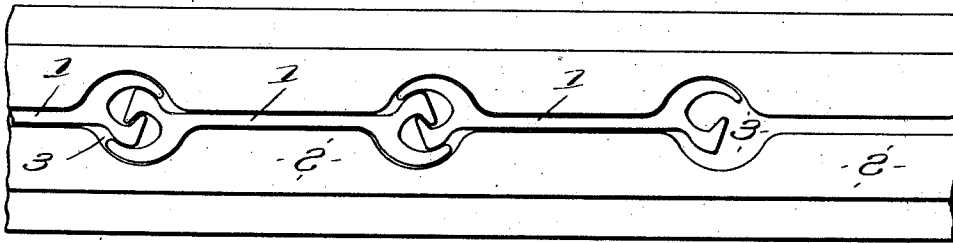


Fig. 3.

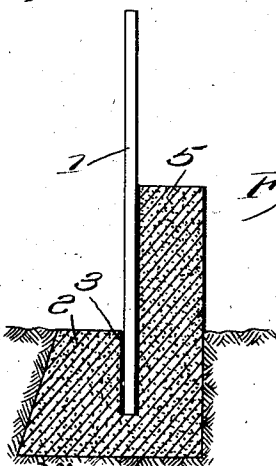


Fig. 5.

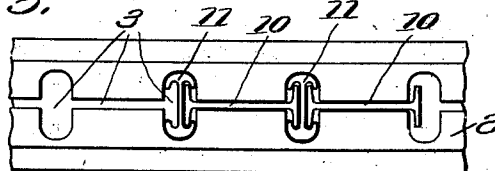


Fig. 4.

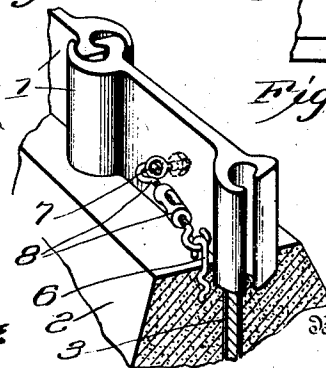


Fig. 6.

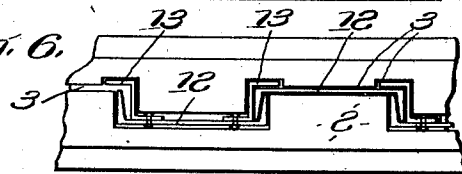
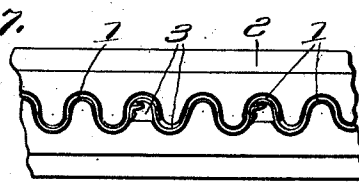


Fig. 7.



Witnesses:  
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 By his Attorney  
 Alfred Wilkin

# UNITED STATES PATENT OFFICE.

THOMAS CURTIS CLARKE, OF NEW YORK, N. Y.

## TEMPORARY WALL.

972,059.

Specification of Letters Patent.

Patented Oct. 4, 1910.

Application filed May 11, 1910. Serial No. 560,577.

*To all whom it may concern:*

Be it known that I, THOMAS CURTIS CLARKE, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented new and useful Improvements in Temporary Walls, of which the following is a specification.

My invention relates to means for protecting against floods and consists in a peculiar temporary wall, which may easily be set in position when needed and easily taken down when the need is passed, and whereby unsightly permanent levees, dikes, dams and other barriers are avoided.

The essential features of my invention are a masonry foundation, provided with a continuous groove, channel or slot, and interlocking metal pile beams adapted to fit the groove snugly enough so as to be firmly supported against the greatest pressure to which a wall may be subjected, when in position, and yet, with a little looseness, so that they may be set in place and removed easily and quickly by hand. To that end piles of such length should be used as to form a wall higher than the highest possible point of the flood, and the grooves should be deep enough to give a firm support to the piles of the length used.

My invention will be understood by reference to the drawing herewith in which the same reference numerals indicate the same part in all the figures.

Figure 1 is a perspective view partially in vertical section illustrating my peculiar construction. Fig. 2 is a plan of Fig. 1. Fig. 3 is a vertical cross section illustrating the use of my invention in connection with a permanent wall or a parapet. Fig. 4 is a fragmental view in perspective illustrating means for tightening the pile beams after they have been set in place. Figs. 5, 6 and 7 show other forms of interlocking pile sections used in my peculiar structure. Fig. 8 shows a slight modification in Fig. 3, relating to the construction of the groove.

Referring particularly to Figs. 1 and 2, 1 indicates the pile beams, or sections, of any suitable construction such as are now commonly rolled from steel blooms, fabricated from structural beams, or otherwise made. The beams are preferably provided with interlocking flanges, or other interlocking elements, along the two edges of the web, so

that, when set in position in the slotted foundation, they form a wall that is strong and practically water-tight. 2 indicates the foundation of masonry concrete or other suitable material, provided with the groove, 60 or continuous socket 3, which might be of uniform width but preferably is made, as indicated, to correspond to the section of the particular piles, that is with narrow portions corresponding to the pile webs alternating with wider portions corresponding to the interlocking or engaging edges so that a bearing is afforded on the webs as well as on the enlarged interlocking edges or interlocking elements. This foundation may be 70 constructed at any suitable height above the normal level of the water, and may be raised above the level of the earth, (in whole or in part) but generally and preferably is substantially level with the earth or the pavement, etc., at the point in question so as to be inconspicuous, for one of the particular advantages of my invention is that it does not disfigure the landscape, as for instance in a beautiful city, where the river banks have 80 been improved by embankments, river-side parks, etc. In building a foundation a trench may be dug, and a suitable form of sheet metal, or wood may be centered and arranged therein for the slot and the concrete 85 be mixed and molded around it. The foundation may of course be of such length as may be desired, and may be of any desirable depth, width and anchorage to resist the particular strains to which it will be subjected 90 at the point in question. It may follow the contour of the locality, up or down, more or less, where necessary, and, if desirable, in depressions a deeper groove may be formed for longer piles, so that the top of the pile 95 wall will be substantially level.

In Fig. 3 my invention is shown in connection with a permanent wall or parapet 5. The river is supposed to be at the left of the wall so that in times of flood the wall assists 100 in sustaining the temporary wall of piling. This illustrates the condition prevailing in Paris during the late floods, where the river rose above the parapet, but by means of my invention a temporary wall could be quickly 105 set in place rising a few feet above the top of the parapet and entirely controlling the flood. With my invention the foundation could be carried across the breaks in the parapet such as bridge roadways, and land- 110

ing approaches, and the piling quickly set in place to form a continuous wall, temporarily to span such spaces.

In Fig. 4 I have shown a means whereby a longitudinal tension may be applied to the wall at intervals after the pile beams are set in place to draw them tight, so as to render them absolutely water tight at the joints. Generally speaking this is not necessary where the slot is made to correspond to the shape of the piling. A desirable means for tightening is at intervals to set permanent screw eyes 6, in the foundation and to provide the adjacent beam with a corresponding eye 7 or hole. A turn-buckle 8 is interlocked with the two eyes and turned up, whereby the wall is tightened. It will not be necessary or desirable to do this with every beam, but the turn buckle or other means may be applied to every tenth or twentieth beam. The turn-buckle is easily loosened when the wall is taken down.

In the preceding figures particularly described, I have shown a double interlock piling, which is particularly desirable for this purpose, not only on account of its strength and firm interlock, but because in that interlock there were three points or lines of contact whereby the joints are rendered practically water tight, without the need of the aforescribed tightening means. It will be understood that generally the water pressure would tighten the joints sufficiently in case of any form of piling.

My peculiar structure can be made with any form of metal piling now on the market. Illustrations of other forms of piling are shown in Figs. 5, 6 and 7. In Fig. 5 the piling is composed of the usual structural beams 10 connected by special interlocking sections 11. In Fig. 6 a well known form of built up or fabricated piling is shown in which usual structural channels 12 are used and the interlocks formed by riveting thereto the Z bars 13. Fig. 7 shows a corrugated form made of lighter metal, where the pile edges engage, but do not interlock, strictly speaking.

While I particularly describe my invention for protection against flood, it may be used for any other purposes where such a wall is desirable, for instance as a barricade or breast work, particularly to protect railroads and bridges as at the frontier, and the foundation may be modified in form and constructed of other materials as long as it is formed with a groove or continuous socket temporarily to receive the pile beams. For instance in a modification of the particular arrangement shown in Fig. 3, a metal foundation piece, for instance a Z bar 15, might be anchored by bolts 16 to the parapet 5, when the latter is building. In such an arrangement, the parapet sustains most of the pressure exerted on the piling wall by the

water, and therefore a shallow slot only is necessary; where the foundation is of metal as suggested it may be arranged merely to grip the toe of each pile beam.

Where desirable to exclude dirt from the slot during the times that the temporary wall of metal beams is installed, the foundation could be protected by any suitable cover, such as planks having nails, or other projections, to engage with the slot, to hold the planking in place. But generally such covering would not be necessary, for the dirt and dust entering the slot could be easily cleaned out, as by a fire-engine hose, or could be puddled to prevent the water seeping under the lower ends.

I have thus produced what I believe to be an essentially new temporary structure adapted in a new way for a new purpose. Heretofore the word "pile" or "piling" has always implied a permanent structure, that is one which was installed by the use of a pile driver, and therefore permanent in fact, even though it was only for temporary use, for the piles could only be removed by expensive and difficult means such as applying a great force to draw them, and no piling structure heretofore, with which I am acquainted, could be set up and removed easily as many times as desired. On the contrary a great length of my temporary wall may be installed and removed in a few hours, the speed only depending on the number of men employed to set the piles in the slot or to remove them.

The cost of the foundation and the piling for my peculiar temporary structure is not great and is very small compared to the cost of unsightly retaining walls, barriers, etc. It can therefore be extended for miles, through a city, or elsewhere on one, or both, sides of a river at a moderate expense.

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

1. In a structure of the character described, the combination with a foundation having a continuous groove, of a series of metal sheet piles adapted to be set in said groove to form a temporary wall.

2. In a structure of the character described, a masonry foundation base formed with a continuous groove or slot of suitable depth, and in combination therewith a series of steel sheet piles adapted to be set in said groove to form a temporary wall.

3. In a wall adapted for temporary use as a protection against floods, the combination with a masonry foundation of length corresponding to the length of the protecting wall and having its upper surface substantially level with the surface of the earth, said foundation being provided with a continuous slot extending from the upper surface a suitable depth in the foundation to receive and sustain piling, and steel sheet

piles adapted to be set in said slot with their edges in contact.

4. In a wall for temporary use, the combination provided with a continuous slot, of interlocking steel sheet piles adapted to be set in said grooves with their edges interlocking and extending above said foundation to form a continuous wall of suitable height, said slot being formed alternately with narrow portions to fit the pile webs and with enlarged portions to receive the interlocking portions.

5. In a wall of the character described adapted for temporary use, the combination with a masonry foundation provided with a

continuous slot, of interlocking, steel sheet piles adapted to be supported by said wall with their ends inserted in the slot and their edges interlocking, metal projections fixed in the upper portion of the wall, and tightening means arranged each to engage with one of said projections and with an adjacent pile to tighten the wall of piling longitudinally.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS CURTIS CLARKE.

Witnesses:

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ALLAN W. FOORE.