

J. C. MEEM.
 CONTRACTIBLE PILING.
 APPLICATION FILED APR. 13, 1910.

991,001.

Patented May 2, 1911.

Fig. 1

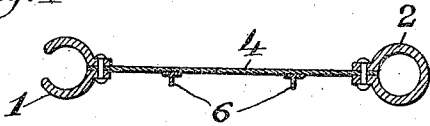


Fig. 5

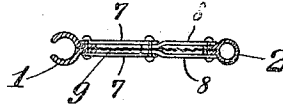


Fig. 2

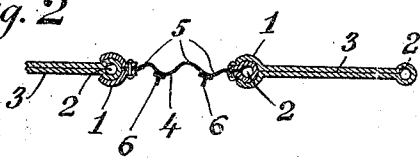


Fig. 6

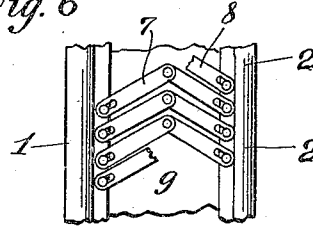


Fig. 3

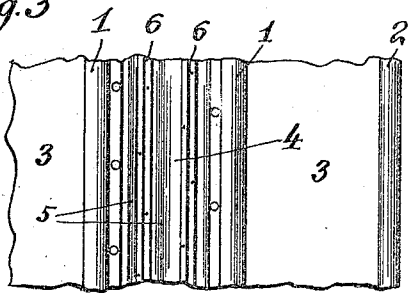


Fig. 7

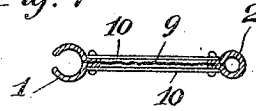


Fig. 8

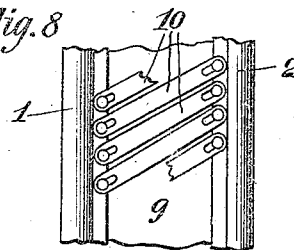


Fig. 4

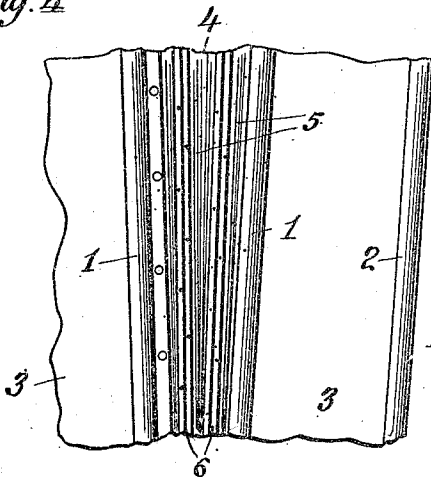


Fig. 9

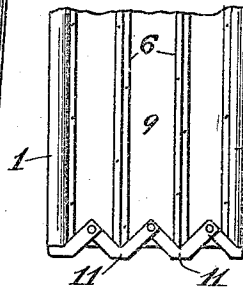
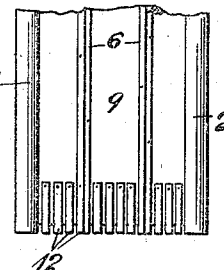


Fig. 10



Witnesses:

A. K. Schneider
 Geo. W. Kerr

James C. Meem Inventor

By his Attorneys
 Edwards, Sager & Wooster.

UNITED STATES PATENT OFFICE.

JAMES C. MEEM, OF BROOKLYN, NEW YORK.

CONTRACTIBLE PILING.

991,001.

Specification of Letters Patent.

Patented May 2, 1911.

Application filed April 13, 1910. Serial No. 355,231.

To all whom it may concern:

Be it known that I, JAMES C. MEEM, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Contractible Piling of which the following is a full, clear, and exact specification.

This invention relates to contractible piling, and has particular reference to a closure pile which can be varied in width to close the last opening in the sheathing of an excavation.

In many instances where sheet piling is used to inclose excavations, the last pile to be driven is frequently either too wide or too narrow, necessitating the use of additional piles or packings to completely close the sheathing. Also, piles do not always drive perfectly straight, and the last opening may vary in width from top to bottom, thereby rendering a pile of uniform width ineffective to completely close the space. Especially are these contingencies liable to happen where interlocking metallic sheet piling is used, which comes in various stock sizes which have to be used in the best and most economical manner possible, even though sometimes expensive and ineffective.

According to this invention, I propose to construct a contractible pile, preferably of the interlocking type, whereby it will vary in width according to the aperture to be closed, while at the same time interlocking with the adjacent piles and thereby forming a complete closure without entailing extra labor and time.

The invention with respect to several forms thereof is shown in the accompanying drawing, wherein—

Figure 1 represents in section a contractible pile embodying the invention, Fig. 2 shows the pile contracted and interlocked with standard piles, Fig. 3 is a side view of Fig. 2, Fig. 4 shows the pile of Figs. 1 and 2 being driven where the width varies, Fig. 5 is an end view of a modified construction, Fig. 6 is a side view, Figs. 7 and 8 show another modification, Fig. 9 shows a flexible stiffened canvas sheet having cutting heads, and Fig. 10 shows another modification.

1, 2, represent interlocking members of a pile adapted to interlock with similar members 1, 2 of standard piles 3. According to

this invention, I provide a contractible web member 4 between the interlocking rigid members 1, 2. As shown in Figs. 1 and 2, the intermediate web 4 is composed of a thin flexible sheet, such as steel, lead, canvas, or the like, which can be contracted and crinkled as shown at 5 in Figs. 3 and 4 to bring the interlocking members 1 and 2 closer together. If desired, stiffening T-irons or other forms 6 may be added, which will not affect the flexibility of the pile, but will add to its vertical stiffness. If it is desired to still further protect the bottom of the thin sheet, shoes with some form of apron or cutting wings may be attached to the bottoms of the T or other irons, or extra stiffeners may be attached to the footings of the flexible material. In Fig. 9, the bottom of the canvas or flexible web has cutter heads 11, and in Fig. 10, the stiffeners 12 act as cutters and also protect the web against rupture.

In Figs. 5 and 6, the members 1 and 2 are connected by joined links 7, 8, which links are loosely pivoted or slotted to permit the members 1 and 2 to adjust themselves to such an aperture as for instance is shown in Fig. 4, where the sides are not parallel. The pivots of the links 7 and 8 are made sufficiently loose so that the pile can be bent in its own plane, sufficiently for the purposes described. The links 7 and 8 and 10 thereby constitute a flexible member or intermediate portion equivalent to the flexible sheet member heretofore described.

In order to waterproof such a pile, between the links 7 and 8 will be a flexible sheet of canvas or other suitable material 9, which being between the links will be protected from abrasion and will permit the links to vary the width of the pile, as may be required. It will be seen that the links provide considerable stiffness and enable the device to be readily driven. In Figs. 7 and 8, the links 10 are straight links set on an incline relatively to the members 1 and 2, and thereby the distance between the members 1 and 2 can be varied, as may be necessary, the rivet holes being slotted to permit the members 1, 2, to take inclined positions, if necessary. In this form also, a sheet of canvas or other material above mentioned 9 may be used, as in the other forms.

It will be seen that various constructions

can be evolved embodying the idea of a contractible pile, and I do not limit myself to the specific forms herein shown and described.

5 Having thus described my invention, I declare that what I claim as new and desire to secure by Letters Patent, is:—

1. A pile having interlocking sides and a contractible intermediate portion.
- 10 2. A pile comprising side members and a flexible intermediate portion.
3. A pile comprising side members having interlocking edges, a flexible intermediate member, and a fabric overlying the flexible
- 15 member.
4. A pile comprising side members hav-

ing interlocking edges, and a longitudinally flexible intermediate member.

5. A pile comprising side members having interlocking edges, a longitudinally flexible intermediate member, and stiffening means carried by said intermediate member. 20

6. A pile comprising side members having interlocking edges, and an intermediate flexible sheet member secured to said side members. 25

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

JAMES C. MEEM.

Witnesses:

J. S. WOOSTER,

GEO. N. KERR.