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UNITED STATES PATENT OFFICE.

STEPHEN FRONTIS BURBANK, OF HONOLULU, TERRITORY OF HAWAII.

MOLD FOR CONCRETE FILES OR COLUMNS.

983,678.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, STEPHEN FRONTIS BURBANK, a citizen of the United States, residing at Honolulu, Hawaii, have invented certain new and useful Improvements in Molds for Concrete Files or Columns; 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 molds for concrete piles and has for its object to produce a device of this nature which will be capable of molding a pile while in a horizontal position, which will permit reinforcements to be cheaply and quickly placed in the molds before the material is poured, and which will be more efficient and less expensive in operation than the molds heretofore employed.

To this end, the invention consists in the novel details of construction and combinations of parts more fully hereinafter disclosed and particularly pointed out in the claims.

Referring to the accompanying drawings forming a part of this specification in which like numerals refer to like parts in all the views:—Figure 1, is a longitudinal plan view, partly in section of a mold made in accordance with my invention; Fig. 2, is a transverse sectional view of the said mold ready to receive the material, and showing a portion of the reinforcements in place; Fig. 3, is an edge view of the mold when opened out and lying flat; Fig. 4, is a bottom plan view of the parts shown in Fig. 3; Fig. 5, is a detail perspective view of one of the mold members; Fig. 6, is an elevational view of the completed pile showing the reinforcing material in dotted lines; and, Fig. 7, is a cross sectional view of the pile shown in Fig. 6.

1 indicates a series of links preferably made of individual bars, as shown, and hinged together as at 2. To these links are attached by any suitable means the individual mold boards or members 3 which are conveniently beveled at their edges to form the joints 4 when the mold is in its assembled position, as shown in Fig. 2. The last link 5 at one end of the flattened out mold is not provided with a board and the end boards 6 of the mold are so shaped that their edges 7 will come flush with the upper

surface 8 of the completed pile 9 after the material is poured. By thus beveling off the edges 7 of the parts 6, and by extending the end links 10 beyond said beveled edges 7 a clear space is left above the mold cavity in which a trowel or other smoothing tool may be operated to neatly smooth off the surface of the pile and give it a finish in all respects equal to the finish of the corresponding surfaces formed on the inside of the mold. The beveled edges 7 also serve as a guide for the workman in this finishing operation and constitute an important feature of my invention. The link 10 at the other end of the flattened out mold projects beyond its corresponding board 6, as illustrated in Fig. 2, and is secured to the link 5 by a suitable rod, as 12. There being no board below the link 5 a space 13 for pouring the material into the mold is provided. One end of the individual boards 3 is preferably provided with triangularly inclined pieces 15, beveled as shown, which extend from said boards at a convenient angle to give the taper 16 to the driven end of the pile. When the mold is assembled, as shown in Figs. 1 and 2, these tapered ends 15 close the end of the completed mold, as illustrated, except for a small hole which may be left in the center, if desired.

To adapt the mold to a pile of any length less than its own, and in order to completely close the ends of the mold and also to give it additional rigidity, there may be placed in each end of the same movable octagonal or other shaped blocks 16, as shown, and for this purpose, if desired, the individual boards may be provided with grooves 17 to receive the eight sided blocks. A plurality of the bands or links 1 are placed at suitable intervals around the boards 3, as indicated in Fig. 1, and the whole structure may be suitably supported when it is ready to receive the reinforcement now to be described.

It is well known that in making concrete columns or piles that it is an expensive proceeding to place the reinforcing structure and to hold it in place while the material is being poured. As a general proposition, longitudinal rods are required and these rods must be provided with transverse tie wires which either helically encircle the rods or else they are otherwise secured to the same before they are placed in the mold. In the case of a pile structure this reinforce-

ing structure of rods and tie wires would be quite long, and would require one or more men to complete it outside of the mold and several men to place it in position and hold it there while the material is being poured, thus greatly increasing the cost of the pile. In my construction, however, I merely produce a circular ring 20 made of a single wire and pass the wire from the circumference to the center a plurality of times to form the radial portions 21 when the ring is completed. I then suspend a plurality of these rings inside the mold from the links 5 or from other means or portions of the mold and distribute them throughout the length of the pile at any distances which may be desired. These rings are readily made on a separate machine or they may be made on suitable patterns by hand and may be shipped in bulk to any place where the molds are to be assembled. After the rings are in place, as indicated in Fig. 2, then the longitudinal rods 24 which may be also shipped in bulk to the place where the molds are to be assembled, are inserted as by threading one at a time through the eyes 25 in the rings, whereupon the completed reinforcing structure is soon assembled and suspended in its proper position in the mold. The concrete or other material is then poured through the opening 13 being careful to smooth off the top surface even with the edges 7 of the parts 6, and the pile or column is left to set, having previously removed the suspending means 22 from the rings 20 after the latter have been firmly fixed in position by the plastic material.

The completed pile after it has set may be readily removed from the mold by merely withdrawing the rod 12 and opening out the mold, whereupon it can be easily removed therefrom and shipped to any desired place.

It is obvious that those skilled in the art may vary the arrangement of parts and the

details of construction without departing from the spirit of my invention, and, therefore, I do not wish to be limited to such features except as may be required by the claims.

What I claim is:—

1. In a mold for concrete piles, the combination of a plurality of links; parts associated with said links and adapted to form a mold cavity having a pouring opening the edges of the end parts being beveled off to form a continuation of the outer surfaces of the molded pile and the end links extending beyond said beveled edges to provide a space for a finishing tool; an additional link attached to said end links serving to hold the parts together; means at one end of said mold to cause the pile to be tapered; and means at the other end of said mold to regulate the length of said pile, substantially as described.

2. In a mold for concrete piles, the combination of a plurality of links; boards associated with said links adapted to form a mold cavity with a pouring opening; the ends of said boards having beveled edges to form a continuation of the outer surface of the molded pile, and the end links extending beyond said beveled edges to provide a space for a finishing tool; triangular-shaped pieces attached to said boards at one end and extending at an angle to said boards to form a tapered end for said cavity; a detachable block fitting between said boards and closing the other end of said mold; and additional links passing over said opening and holding the parts together, substantially as described.

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

STEPHEN FRONTIS BURBANK.

Witnesses:

FRED LARSON,
S. A. ANTHONY.