July 26, 1927. 1,637,065

S. W. TRAYLOR ET AL

RETAINING WALL CONSTRUCTION

Filed Aug. 25, 1926 2 Sheets-Sheet 1

Fig. 1.

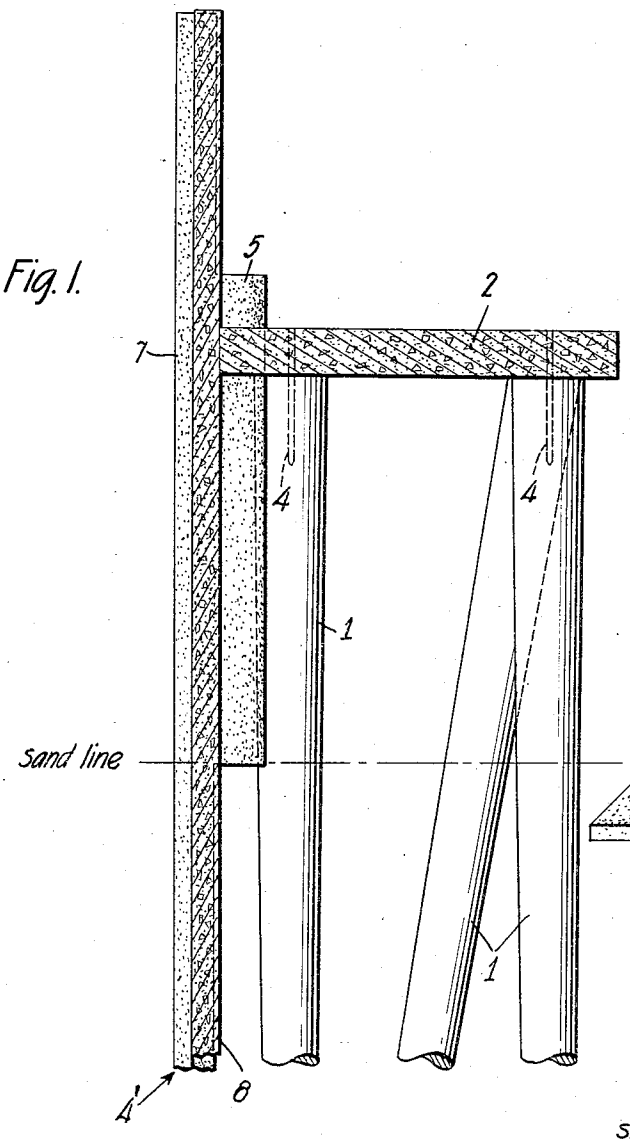


Fig. 2.

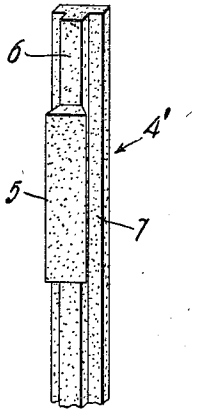
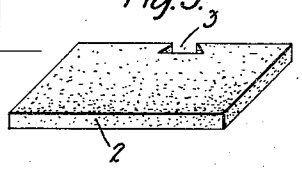


Fig. 3.



Inventors
SAMUEL W. TRAYLOR
and CHARLES H. RUGGLES.

by Marks & Clerk
Their Attys

July 26, 1927. 1,637,065

S. W. TRAYLOR ET AL

RETAINING WALL CONSTRUCTION

Filed Aug. 25, 1926 2 Sheets-Sheet 2

Fig. 4.

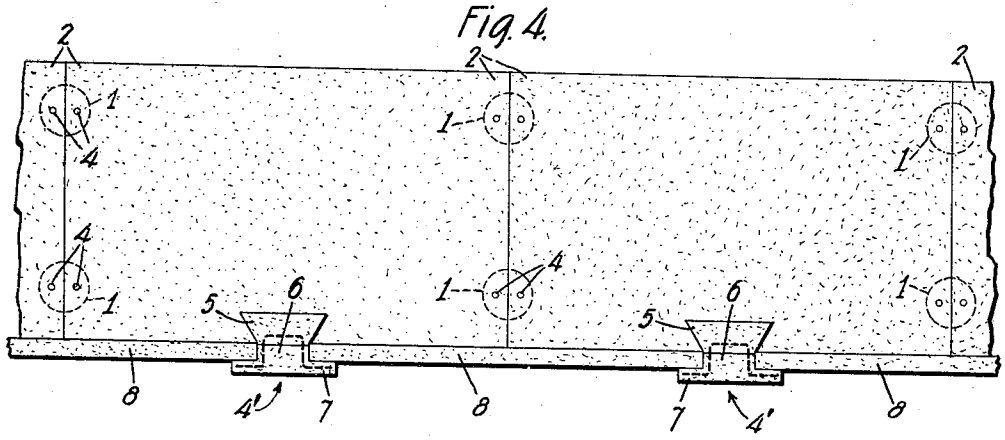
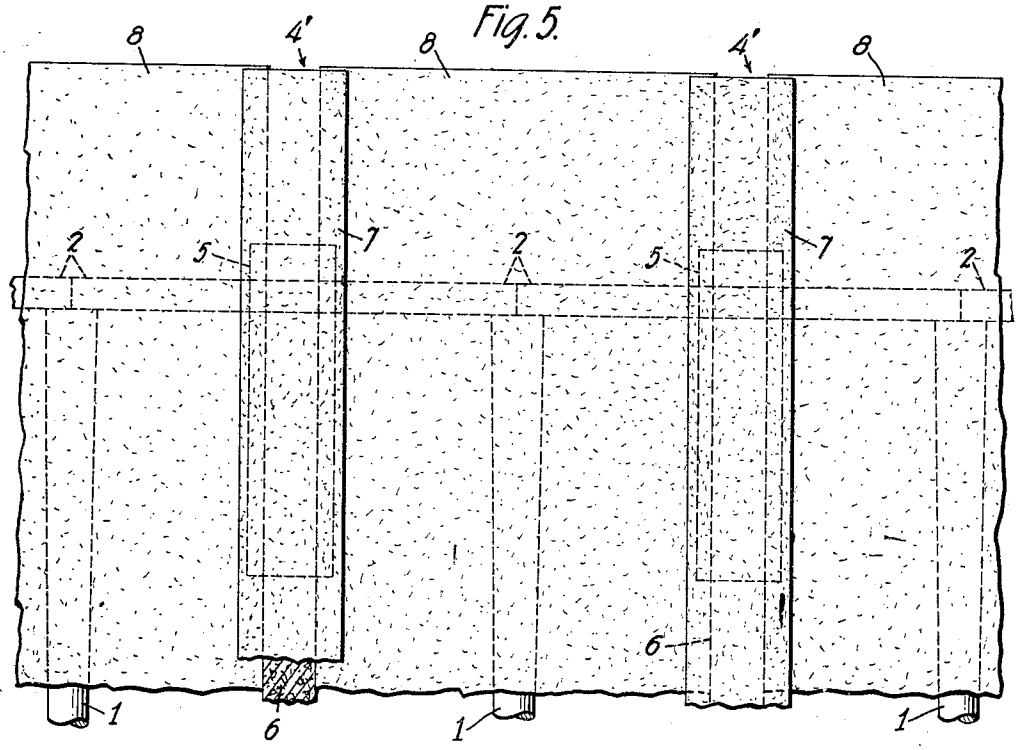


Fig. 5.



Inventors
SAMUEL W. TRAYLOR
and CHARLES H. RUGGLES.

by Marks & Clerk
Their Attys

Patented July 26, 1927. 1,637,065

UNITED STATES PATENT OFFICE.

SAMUEL W. TRAYLOR, OF ALLENTOWN, PENNSYLVANIA, AND CHARLES H. RUGGLES, OF WEST PALM BEACH, FLORIDA.

RETAINING-WALL CONSTRUCTION.

Application filed August 25, 1926. Serial No. 131,352.

This invention relates to retaining wall construction and more particularly to a wall built up of preformed sections or elements of substantial size so that the wall may be built rapidly, and to a method of making such walls.

An important object of the invention is to provide an improved wall of the character described.

Another important object of the invention is to provide a novel and advantageous method of producing such a wall.

Other objects of the invention are to provide a wall in which advantage is taken of the cantilever principle without causing undue pressure at the bottom of the wall; a structure comprising supporting posts held in position by rearwardly extending slabs positioned intermediate the ends of the slabs which in turn are supported suitably from below and are loaded from above so as to exert a strong restraint on said posts against any tendency to be forced outwardly at the upper ends thereof; a wall formed of members pre-cast or preformed by mixing dry cement and sand, preferably in the proportion of one to three, forcing the mixture under heavy air pressure from a suitable instrument in which a suitable amount of water is introduced prior to expulsion and directing the material against a suitable form or object; a wall built up of preformed concrete elements or sections and having special provisions for support against outward tilting; and a method of erecting a cement or concrete wall by forming slabs with notches at the edges thereof, supporting said slabs on temporary supporting means with said notches at the front, forming piles or posts with rearwardly extending ribs having relatively wide rear edges adapted for downward movement into said notches to fit closely therein, forming curtain slabs adapted to be moved downwardly into position at the front of the horizontal slabs and to be held thereagainst by engagement at the rear of the front portions of said posts, and filling in material at the rear of said wall to support the wall members against the pressure at the outer face thereof and to weight the rearwardly extending slabs to produce a cantilever effect which acts to prevent outward tilting of the wall.

Further objects and advantages will appear upon consideration of the following detailed description and of the accompanying drawings, in which:

Fig. 1 is a view in section illustrating one embodiment of the invention;

Fig. 2 is a view illustrating one of the piles or posts separate from the rest of the structure;

Fig. 3 is a perspective view of one of the notched slabs forming part of the relieving or anchoring platform;

Fig. 4 is a top view of a portion of the structure shown in Fig. 1; and

Fig. 5 is a front elevation of the wall, part of the wall being broken away at the lower edge in such a manner as to bring out certain features of construction and other features being shown by means of dotted lines.

In carrying out the invention, piles 1 are driven into the ground slightly to the rear of the site of the wall proper, as illustrated in Figs. 1 and 2, and after the heads of the piles have been levelled by driving them to the proper extent or by cutting off their heads, their upper ends are covered by a platform comprising slabs 2 which are provided with notches 3 at their forward edges. Although it has been found desirable to use piles 1 for supporting the slabs 2, it is entirely feasible to support the slabs in other ways as on suitable cribbing. When piles are used it has been found desirable to incline alternate piles of the rear row as indicated in Fig. 1, thus producing a stronger resistance against forward pull on the slabs 2 which are preferably secured to the piles by suitable devices such as pins 4.

Then suitably formed piles or posts 4 are placed in vertical position and key or tenon portions 5 are fitted into said notches or mortises 3 from above, the piles being driven to positions with their lower ends projecting into the ground or sand but not so far as to disconnect the key portions 5 from the notches 3. The key or tenon portions 5 are located at the rear edges of ribs 6 extending rearwardly from main or pilaster portions 7 which are spaced from the slabs 2 by the depth of said rib portions 6. The wall is then substantially completed by taking slabs 8 of suitable dimensions and moving them downwardly into position with their rear faces in engagement with the front edges of said slabs 2 and with their front faces at their edges engaging the rear faces

of the pilaster portions 7. It will be seen that the slabs 2 serve not only to form a relieving and supporting platform but also an upper wale to the vertical part of the wall.

After the wall elements have been erected in this manner, the wall is filled in at the back with suitable material. When the wall is built at the edge of the water as it is especially designed to be, sand or other material may be dredged, hydraulically for example, and deposited back of the wall, the water draining out through the openings between the slabs.

It should be understood that the present embodiment of the invention is merely illustrative and that various changes may be made in the construction and arrangement of the parts without departing from the spirit and scope of the invention.

Having thus described our invention, we claim:

1. A retaining wall comprising posts forming pilasters at the exposed face of the wall, a slab construction extending along said wall at the rear of and attached to said posts to support and to hold them in position and to serve as an upper wale to determine the position of the wall structure between said posts, and preformed curtain slabs interposed between said posts and engaging said posts so as to be held thereby against the slab construction.

2. A retaining wall comprising a concrete slab portion extending rearwardly from the wall and located substantially above the base of the wall to serve as an anchor or deadman therefor, means for supporting said concrete slab portion posts at the forward edge of said slab portion and held in position thereagainst by interlocking parts of said slab portion and said posts, and concrete slabs adapted to be placed in upright position against said slab portion and to engage at their edges with said posts to be held thereby against outward movement.

3. A retaining wall comprising a series of concrete slabs extending rearwardly from the wall and supported in a location substantially above the base thereof, a series of concrete posts one for each of said slabs and attached thereto by a mortise and tenon connection, said posts being formed with lateral projections spaced forwardly from the forward edges of the rearwardly extending slabs, and curtain slabs of cement or concrete resting against the front edges of said rearwardly extending slabs and being held thereagainst by engagement of their edges with the rear faces of the lateral projections of said posts.

4. A retaining wall comprising a rearwardly extending concrete slab portion having vertically extending mortised notches narrower at their mouths than farther back and arranged at suitable intervals, and concrete posts having longitudinal tenon portions to be fitted into said notches by downward movements of said posts, whereby the rearwardly extending slab portion will support said posts during and after the construction of the wall.

5. A retaining wall comprising T-shaped piles of suitable material such as concrete, each having a vertically extending tenon at the rear thereof and lateral extensions at the rear edge of said tenon, a rearwardly extending slab for each of said posts having a vertically extending mortise into which the rear portion of said tenon fits, and curtain slabs held against the rearwardly extending slabs by engagement at their edges back of the lateral projections at the forward edges of said T-shaped posts.

6. A retaining wall built up of concrete curtain slabs, posts of concrete interposed between said curtain slabs and holding them against outward movement, and rearwardly extending slabs having interengaging relations with said posts permitting relative movement thereof vertically but preventing relative movement horizontally or angularly, whereby upon filling in material behind said curtain slabs the posts will be held securely in position.

In testimony whereof we affix our signatures.

SAMUEL W. TRAYLOR.
CHARLES H. RUGGLES.