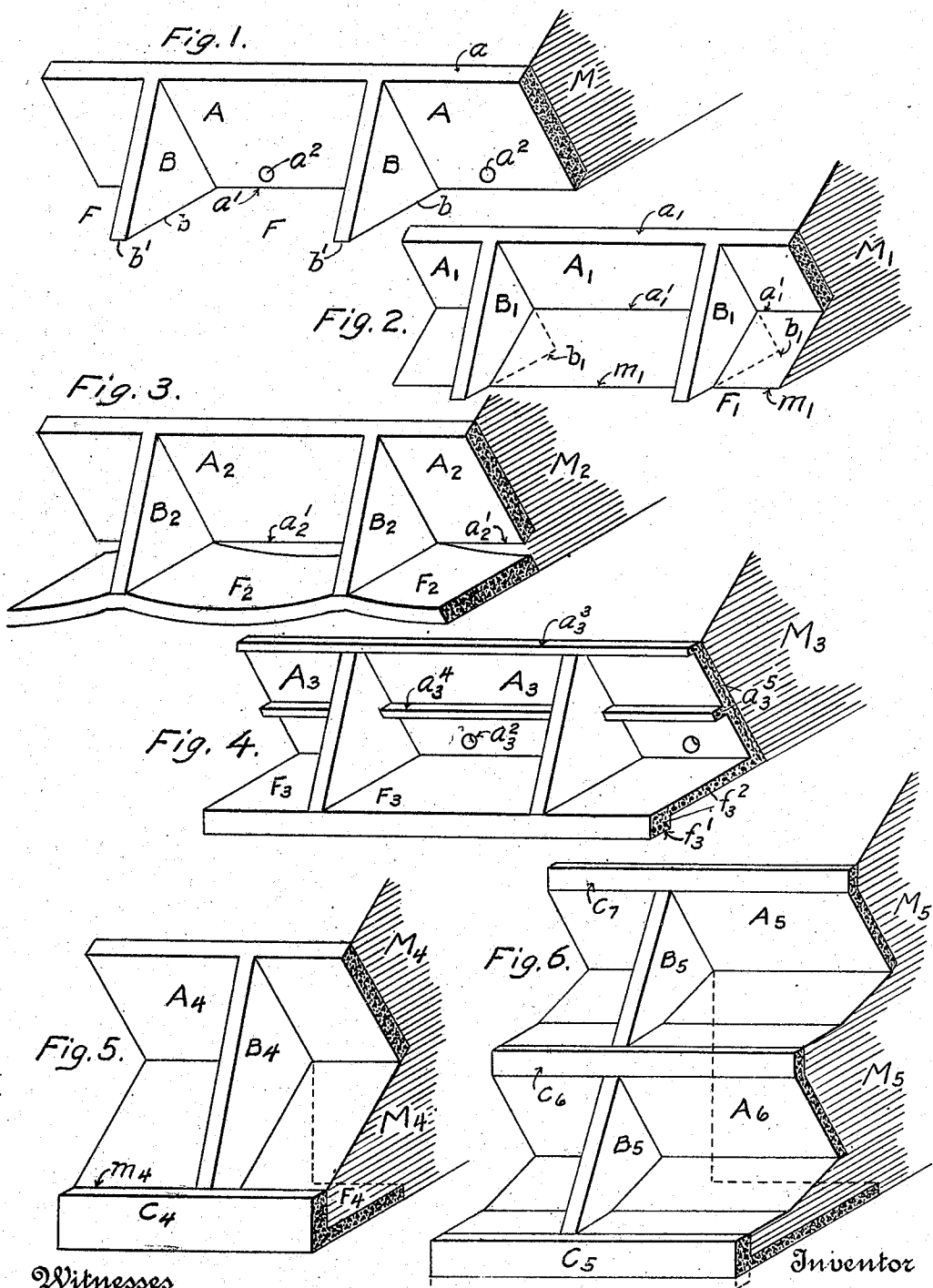


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RETAINING OR QUAY WALL OF PLASTIC MATERIAL, SUCH AS CONCRETE, &c.  
APPLICATION FILED MAY 8, 1909.

936,843.

Patented Oct. 12, 1909.



Witnesses

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# UNITED STATES PATENT OFFICE.

GEORGE P. WOOD, OF PEEKSKILL, NEW YORK.

RETAINING OR QUAY WALL OF PLASTIC MATERIAL, SUCH AS CONCRETE, &c.

936,843.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed May 8, 1908. Serial No. 494,912.

*To all whom it may concern:*

Be it known that I, GEORGE P. WOOD, a citizen of the United States, residing at No. 217 Walnut street, in the village of Peekskill, county of Westchester, and State of New York, have invented new and useful Improvements in Retaining or Quay Walls of Plastic Material, such as Concrete, Timber, Metals, or a Combination of Same, of which the following is a specification.

The object of my invention is to produce a light and economical structure with moderate and equalized pressure on foundations.

My invention primarily consists of an inclined support or slab with provision for the flow of water through or around same, thereby relieving the back of wall from hydrostatic pressure, and transverse walls or piers, under and projecting forward from the inclined support or slab, for transmitting the weight of the inclined support or slab with its superimposed load to the foundation.

The drawings illustrate and the specification describes the invention in varied forms and with varied application.

In these drawings: Figure 1 is an isometric drawing showing the invention in one of its simplest forms with openings through the inclined support or slab for the passage of water. Fig. 2 is an isometric drawing showing the invention in another of its simplest forms, with the supporting transverse walls or piers extending below the bottom edge of the inclined support or slab, thereby permitting the material at back of wall to assume its natural slope below the said bottom edge. Fig. 3 is an isometric drawing of a wall similar to that shown in Fig. 1, but having a foundation consisting of a series of inverted arches; openings for drainage being provided between the bottom of inclined support and the intrados of the arches. Fig. 4 is an isometric drawing of a wall similar to that shown in Fig. 1, but having a foundation slab, various reinforcing ribs and indicating a concrete structure reinforced by steel rods embedded therein. Fig. 5 is an isometric drawing of a wall similar to that shown in Fig. 2, but having a foundation slab and secondary wall in front. Fig. 6 is an isometric drawing of a wall such as may be used for terracing with two inclined supports or slabs and various secondary walls.

In these drawings similar letters refer to similar parts throughout.

In Fig. 1, the support or slab A is inclined at such an angle that the resultant pressure due to its weight and the pressure of the retained material M back of the wall, falls well within the bases  $b$ , of the transverse walls or piers B which project forward to the proper extent to avoid excessive pressure upon the foundation F at the toe  $b^1$ . The inclination of the support or slab A is generally such that the horizontal component of the pressures will not overcome the friction between the bottoms of the transverse walls and the foundation F. The foregoing are general features of the invention and apply to all of the figures. In this figure the support or slab A is shown plain with the retained material extending to the top edge  $a$  of same. The bottom edge  $a^1$  is shown extending down to the foundation F. The holes  $a^2$  shown near the bottom edge of support A are for the purpose of draining the retained material M, thereby preventing the greatly increased pressure that might result from a hydrostatic head. The invention is not restricted to any particular type of foundation for the transverse walls or piers. These walls may rest directly upon rock or other firm material, upon enlarged footing courses and piles in the case of less firm material or upon slabs of concrete, reinforced or otherwise. The invention is well adapted for a foundation consisting of inverted arches. The invention is not restricted to the use of any particular material in construction, but concrete, either plain or reinforced by metal embedded therein in the usual way, is very suitable.

In Fig. 2, the bottom edge  $a^1$ , of support or slab  $A_1$  does not extend to the bottom  $b_1$  of transverse walls or piers  $B_1$ , thus permitting the material  $M_1$  at back of wall to assume its natural slope under and in front of the bottom of said support as shown at  $m_1$ .

In Fig. 3 a wall is shown similar to that in Fig. 1 with an inverted arch foundation  $F_2$ . In this construction drainage is provided between the intrados of these arches and the bottom edge  $a^1$  of the inclined support or slab  $A_2$ . These arches may also be used to advantage when the inclined support or slab does not extend down to the bottom of the transverse walls or piers.

Fig. 4 illustrates a wall in which the inclined support or slab  $A_3$  is reinforced by the ribs  $a^3$  and  $a^4$ . This structure has a foundation slab  $F_3$  reinforced by a rib  $f_3$ .

This figure also illustrates the use of metal reinforcing rods embedded in the concrete inclined support and foundation slab and ribs thereof at  $a^5$  and  $f^2$ . This is not shown in other drawings although it may be applied to all the structures illustrated if desired.

Fig. 5 illustrates the combination of such a wall as is shown in Fig. 2 with a foundation slab  $F_4$  at the front edge of which is a secondary wall  $C_4$  rising to any desired height to retain material  $M_4$ . The secondary wall may, if desired, serve as a fence and immediately above same vines and shrubbery may be planted.

Fig. 6 illustrates a wall quite similar to that shown in Fig. 5 but having two inclined supports or slabs  $A_5$  and  $A_6$ . This is particularly adapted for use on high terraces where it should have a very pleasing appearance.

Having described my invention what I claim is:

1. A retaining or quay wall comprising an inclined support or slab with provision for the flow of water through or around same,

thereby relieving the back of wall from hydrostatic pressure, and transverse walls or piers under and projecting forward from the inclined support or slab for transmitting the weight of same with its superimposed load to the foundation, substantially as set forth.

2. A retaining or quay wall comprising an inclined support or slab with provision for the flow of water through or around same, thereby relieving the back of wall from hydrostatic pressure, and transverse walls or piers under, projecting forward from and extending below the bottom edge of the inclined support or slab, thereby permitting the material at back of structure to assume its natural slope below and in front of the said bottom edge, for transmitting the weight of the inclined support or slab with its superimposed load to the foundation, substantially as set forth.

GEORGE P. WOOD.

Witnesses:

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