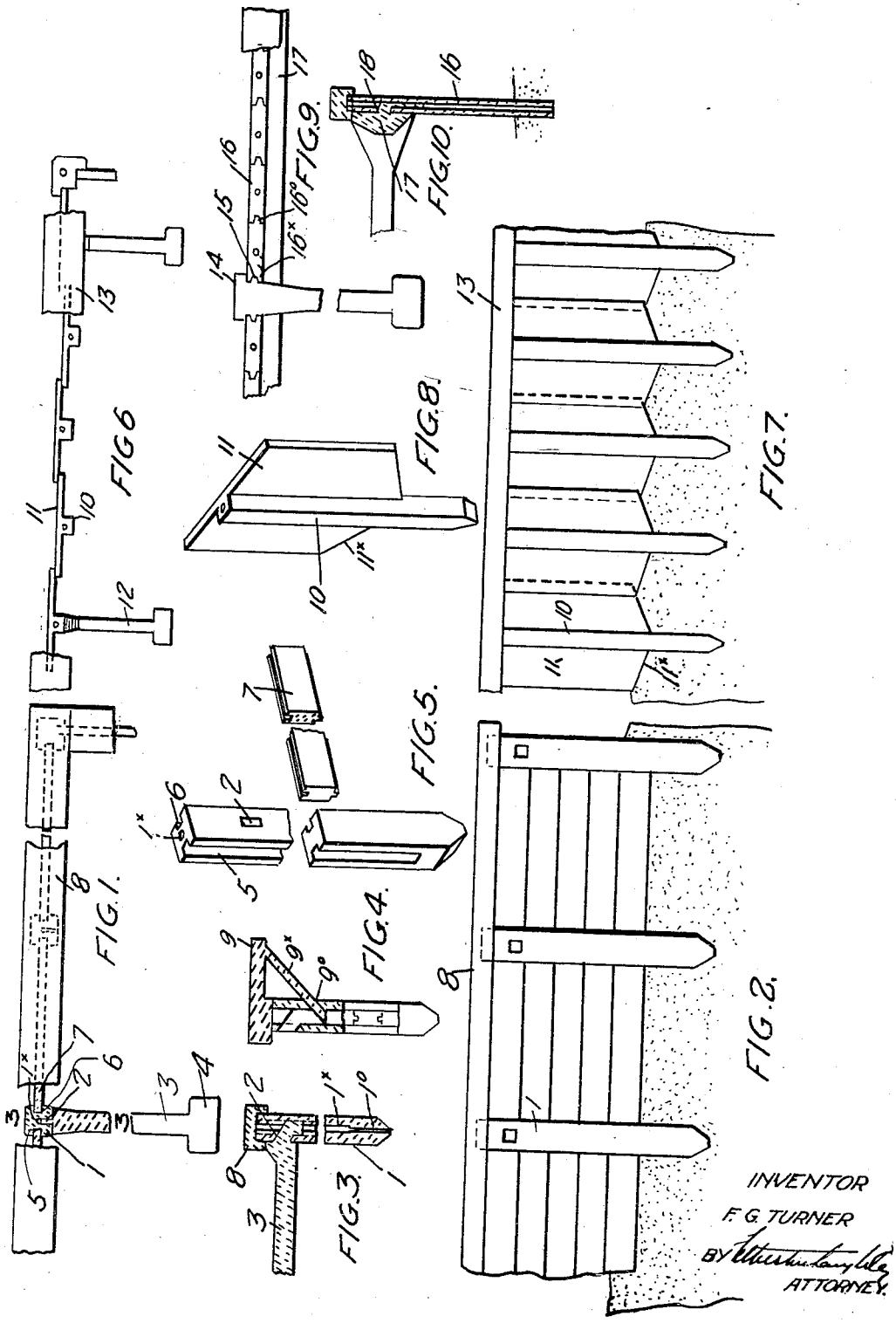
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CONCRETE PILING

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CONCRETE PILING

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My invention relates to improvements in concrete piling, and the object of the invention is to devise a piling in which various forms of square reinforced concrete piles may be provided with reinforced concrete slabs to form a barrier wall or break water, which will be simple, strong, safe and easily driven into place, and in which the members may be precast on the site saving handling and transportation, and which will permit the tying of the parts together without breaking down the concrete, and it consists essentially of the arrangement and construction of parts as hereinafter more particularly explained.

Fig. 1 is a plan view of one form of my piling.

Fig. 2 is a view in elevation of the form shown in Fig. 1 and looking from the inside of the piling.

Fig. 3 is a transverse sectional view on line 3—3 Fig. 1.

Fig. 4 is a transverse sectional view through the piling illustrated in Fig. 1 and showing a wave breaker formed integral therewith.

Fig. 5 are perspective details of a post and slab broken away intermediately of their length.

Fig. 6 is a plan view of a modied form of a piling.

Fig. 7 is a view in elevation of the form shown in Fig. 6 and looking from the inside of the piling.

Fig. 8 is a perspective detail of one of the integrally formed piles and slabs employed in the construction illustrated in Figs. 6 and 7.

Fig. 9 is a plan view of a further modified form.

Fig. 10 is a cross sectional view through Fig. 9.

In the drawings like letters of reference indicate corresponding parts in each figure.

I will first refer to Figures 1 to 4 inclusive.

1 are concrete piles which are formed with a hollow core 1^x which is preferably reduced as indicated at 1^0 towards the bottom of the pile so that as the pile is driven water and sand may pass up through the centre of the pile and thus relieve the pressure as it is driven. 2 is an orifice which is formed on the inside face of the pile leading into the hollow core 1^x and preferably inclined. 3 is a tie back.

After the posts 1 have been driven molds are set up into which the material forming the tie backs is poured, the material flowing into the orifices 2 and core 1^x so that when it sets it forms a key connection between the tie-back and pile.

4 is what is known as a dead man or anchor block which is formed integral with the tie back 3, such anchor block being set in the sand or earth so as to anchor the pile 1 in position. The opposite side facings of the piles 1 are provided with vertical grooves 5 and 6. 7 are slabs which are in the form of concrete boards and which are set, at their ends, in the grooves 5 and 6, the lowermost slab being driven to a slight extent into the sand or earth to prevent any erosion which would otherwise be likely to occur underneath the piling.

The piles 1 preferably extend slightly above the upper edge of the uppermost slab 7. A cap strip 8 is then poured into a suitably formed mold constructed around the upper edge of the uppermost slab and pile end, the concrete forming the cap sitting around the upwardly projecting ends of the piles so as to key them together.

When the device is used as a break water, a wave breaker 9, as illustrated in Fig. 4, may be formed integral with the cap 8 and strut 9^x being formed integral therewith, the lower end of the strut being poured into an orifice 9^0 formed in the outer face of the pile so as to tie the parts together when set.

In Figs. 6, 7 and 8 I have illustrated a modified form in which 10 are the piles constructed similarly to those illustrated in Figs. 1 to 5 inclusive. 11 are concrete slabs which are formed integral with the piles 10, the lower edges of the slabs 11 being preferably inclined downward as indicated at 11^x towards the pile so as to permit the slabs being more easily driven with the pile into the sand or earth. When driven the slabs are set in an overlapping position as clearly illustrated in Fig. 6 so as to form a continuous wall between

each pair of piles which are provided with a tie back as illustrated at 12. This construction is also provided with a cap piece 13.

In Figs. 9 and 10 I have shown a further modification in which the concrete piles are provided with an enlarged outer portion 14, the body of the pile being provided on their side faces with vertical ribs 15.

16 are a series of slabs which are set vertically and provided on their opposing vertical edges respectively with grooves $16^{\times}$ and tongues 16^{0} forming a tongue and groove connection between the piles and between slab and slab. In order to tie the piles and slabs together I provide what is termed a wale 17 which extends horizontally, the slabs and piles being preferably provided with an orifice 18 into which the concrete passes into the core of the slab or pile so as to key all the parts together.

From this description it will be seen that I have devised a very simple construction which may be readily set up and the parts precast on the grounds so as to save any transportation, which will be strong and durable and in which the general form of piles may be varied without effecting the interconnecting structure between the piles and the slabs, and in which parts may be tied together without breaking away the concrete after it is once set.

What I claim as my invention is:

1. A concrete piling comprising a plurality of piles adapted to be driven and having hollow cores extending vertically therethrough and having an orifice extending through the wall of each pile into the core, a concrete tie back provided with an anchor block at one end and extending at its opposite end into and filling the pile orifice and adjacent portion of the core, and a concrete slab structure extending between the piles to fill the interspace between pile and pile.

2. In a concrete piling, the combination with the tie back, wale and cap, of a concrete pile having a hollow core extending longitudinally therethrough and having orifices in the wall of the pile leading into the core to permit the entrance of the material forming the tie back, wale and cap when poured or otherwise formed into the core to form a monolithic structure.

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