

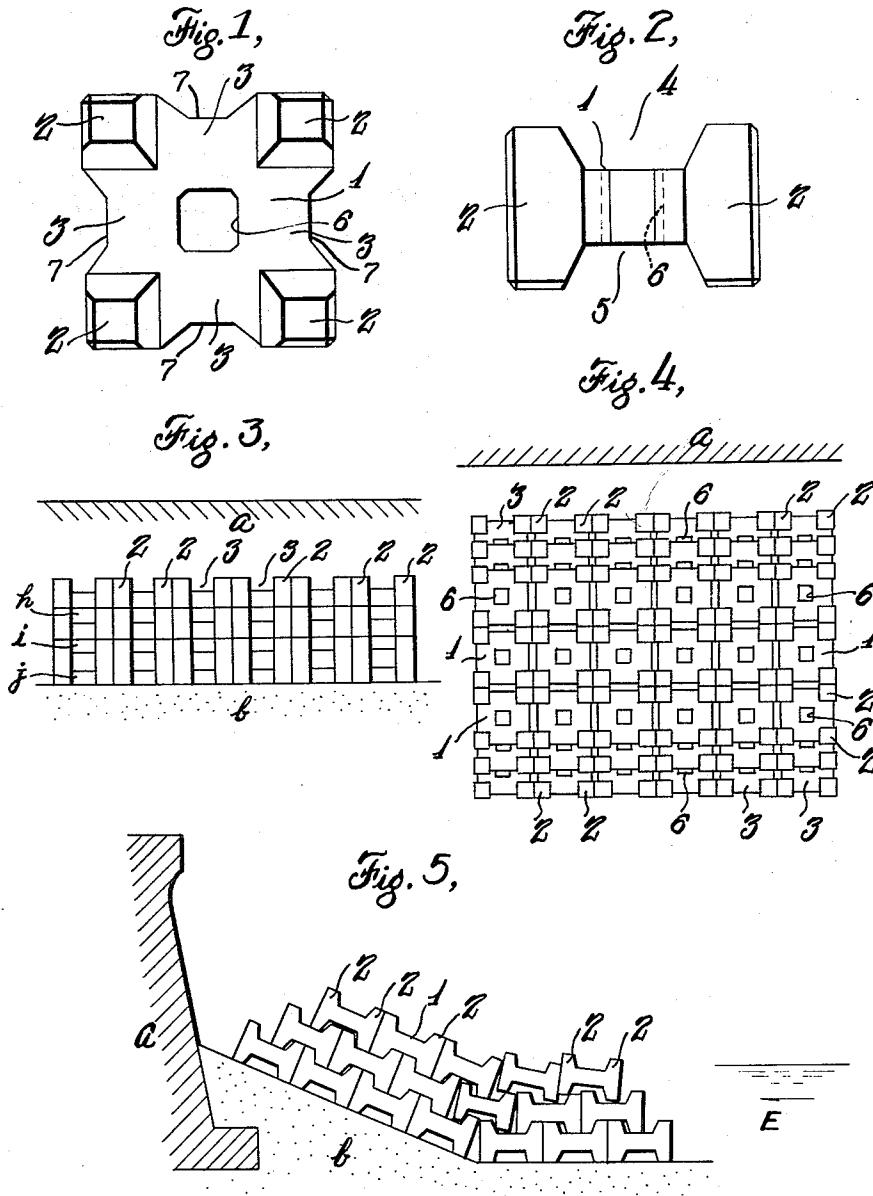
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BLOCK FOR ABSORBING WATER FLOW ENERGY

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3,176,468
BLOCK FOR ABSORBING WATER FLOW ENERGY
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The present invention relates to concrete blocks to be located at the seaside or the riverside, and its object is to obtain concrete blocks which absorb and disperse the energy of moving water such as the force of a wave or the flow of a river, and yet can be stable enough against water pressure or a drag force caused by moving water.

The invention will be described in detail in connection with the accompanying drawings, in which:

FIG. 1 is a plan view of a block according to the invention;

FIG. 2 is a side elevation view of the block of FIG. 1;

FIG. 3 is a front elevation view of a stack of blocks like the block of FIGS. 1 and 2;

FIG. 4 is a plan view of the stack of blocks of FIG. 3; and

FIG. 5 is a side elevation view of the stack of blocks of FIG. 3.

The block for use as a member for resisting and dissipating the kinetic forces of water is shown in FIGS. 1 and 2 as comprising a flat, substantially rectangular body 1 having two flat faces on opposite sides of the block and four edge faces around the periphery of the block. The block has a central aperture 6 therethrough from one flat face to the other flat face. Legs 2 are located at corresponding positions on each corner of each flat face of the body 1, said legs 2 being congruent and each having a substantially square cross section and projecting from the flat faces of said body 1. The legs on each pair of adjacent corners of said body 1 are spaced from each other a distance which is at least slightly greater than the total dimension of the terminal ends of the legs remote from the flat surfaces in the direction in which the legs 2 are spaced. The spacing of the legs 2 on adjacent corners in any plane parallel to the respective flat faces and lying between the base of the legs and the terminal ends of the legs is at least as great as said aforementioned distance. The spaces are shown in FIG. 2 as 4 and 5. The rectangular body 1 extends at least part way into the space between each pair of adjacent legs 2, as shown at 3. In the embodiment shown, the body 1 extends to the outside surfaces of said legs, and the body has a recess 7 in each edge face between adjacent corner legs 2. These recesses extend from one flat face to the other flat face and extend toward the center of the body a distance less than the thickness of the adjacent corner legs 2 at the base thereof.

As seen in FIGS. 3-5, the present invention may be used as wave diminishing blocks at the seaside, in which *a* is a breakwater and *b* is a rubble mound. On this rubble mound *b*, many blocks are regularly arranged both longitudinally and laterally, and piled up in such a manner that there are formed two layers, three layers and so on.

When the blocks are piled up in the manner described, a wave coming from the direction marked by E in FIG.

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5 penetrates into the layers of blocks through front spaces *h*, *i*, *j* (FIG. 3) left between the adjacent blocks. At that time, the energy of water is absorbed and dispersed by the frictional resistance and the turbulence produced in the layers. Moreover, the engagement of one block with the other and the mutual interlocking of the blocks is so strong that these blocks can resist the force of the wave as one body.

Next, in case of a backwash, water goes out easily through the spaces 3, 4, 5 and 6 without a strong uplift pressure and drag force caused by the backwash.

The present invention has the advantage that, because of the regular arrangement of blocks, the interlocking of one block with the other is strong, therefore the stability of the block is high and accordingly there is no fear of overturning and sliding of the blocks, and that the permeability of the spaces 3, 4 and 5 plays a great role in the absorption of the energy of moving water.

We claim as our invention:

1. A block for use as a member for resisting and dissipating the kinetic forces of water, said block comprising a flat substantially rectangular body member having two flat faces on opposite sides of the block and four edge faces around the periphery of said block, said block having a central aperture therethrough from one flat face to the other flat face, legs at corresponding positions on each corner of each flat face of said body member, said legs being congruent and each having a substantially square cross section and projecting from said flat faces, said legs on each pair of adjacent corners of said body member having the bases thereof at the said flat faces spaced from each other a distance which is at least slightly greater than the total dimension of the terminal ends of the legs remote from the flat faces in the direction in which they are spaced, the spacing of said legs on adjacent corners in any plane parallel to said respective flat faces and lying between the base of said legs and the terminal ends thereof being at least as great as said distance, said rectangular body member extending at least part way into the space between each pair of adjacent legs.

2. A block as claimed in claim 1 in which the said body member extends to the outside surfaces of said legs, and said body member has a recess in each edge face between adjacent corner legs, said recess extending from one flat face to the other flat face and extending toward the center of the body member a distance less than the thickness of the adjacent corner legs at the base thereof.

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