Jan. 31, 1939. K. KATO 2,145,396

DAM

Filed Feb. 8, 1938

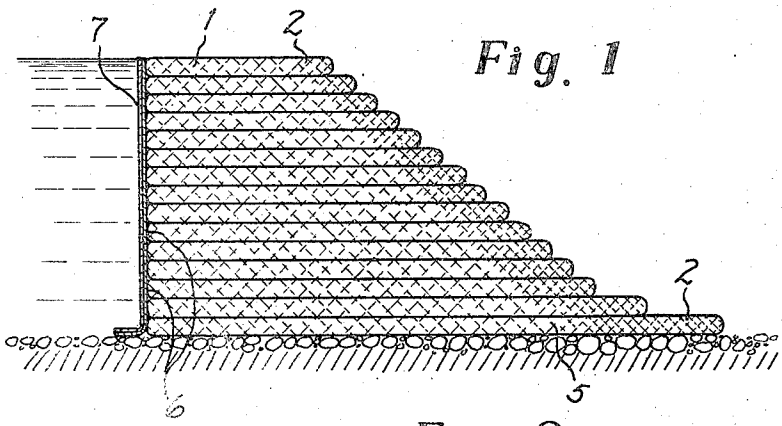


Fig. 1

Fig. 2

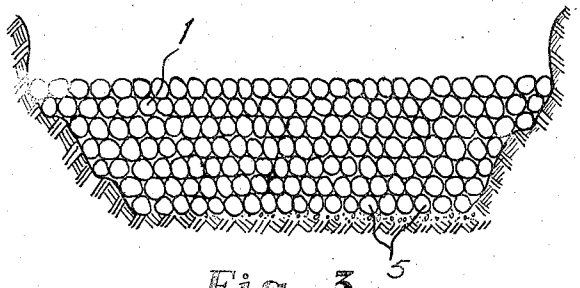
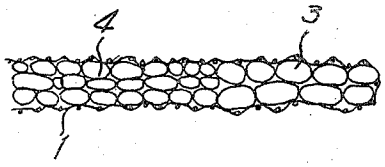


Fig. 3



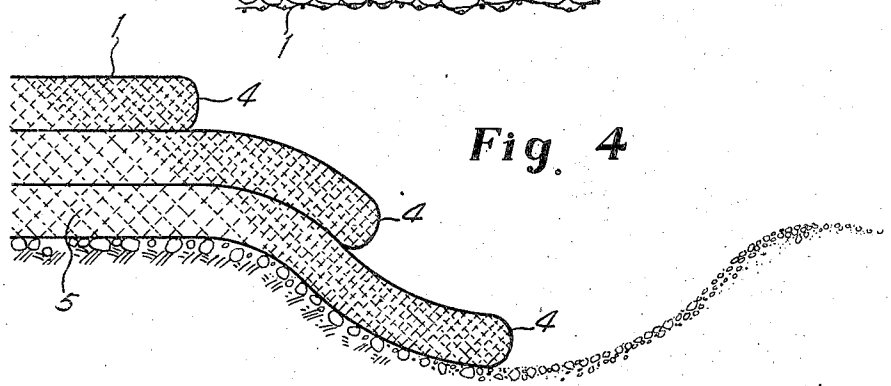


Fig. 4

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In Japan December 24, 1937

2 Claims. (Cl. 61—30)

My invention relates to improvements in a dam composed of a number of long stone trellises.

A number of trellises are placed on the bed of a river having their longitudinal axes in parallel with the direction of the flow water and make a bottom or bed layer.

A number of shorter trellises are put on the bottom layer, having the end surfaces in one plane with that of the bottom layer but the tail ends in a stairs shape, thus forming a stone hill of a semi-trapezoidal section.

Referring to the accompanying drawing:—

Figure 1 shows the vertical section along a longitudinal plane of the dam.

Figure 2 is a vertical section in the direction perpendicular to that in Figure 1.

Figure 3 shows a vertical section of a part of the stone trellis.

Figure 4 shows a few of trellises in the bed layer or lower layer deformed with the river bed.

The dam according to my invention is to be built of a number of elements to be called "stone trellis". The stone trellis is made of a metal wire trellis 1 filled with stone 4. The mesh of the trellis is smaller in the tail stream end 2 and filled with larger stone 3.

Such a stone trellis can be made in some other place if it is rather small and be carried to a desired place. If it is comparatively large, the metal wire trellis only can be set in a desired place and stone can be filled therein, expanding the meshes if necessary.

Such a stone trellis can be put on the bottom of the river notwithstanding the unevenness of the surface of the bottom and the long trellis can be deformed in accordance with the bottom.

A number of such stone trellises are placed on the river bed, rendering the longitudinal axes of the trellises parallel with the direction of flow and form the bottom layer 5.

The stone trellis composing the next layer is shorter in length than that for the bottom layer. When such a shorter trellis is put on the bottom layer, having the up stream surface 6 in one plane with the bottom layer, the down flow end 2 of the bottom layer will be exposed into the overflow. In such a way, the shorter trellises are put one upon another to the top, leaving the tail stream end in the stairs shape and thus a dam can be built in a shape of stone hill having a semi-trapezoidal section.

Each trellis is jointed by wire with the adjacent one.

Each long trellis faces the flow by the small end surface, hence it can resist strongly.

The overflow runs smoothly over the stepped surface, hence the tail bed is not destroyed so severely. If the tail foot is deformed by the tail flow, the trellis on the base or lower layer can be deformed in accordance with that of the bed.

The surface 6 of the dam can be covered with any suitable material or plate 7 if desired. But when it is left open, sand can penetrate with water the spaces between stones in the trellis and fill them up, and it can prevent the leakage and enforce the strength of the stone hill.

I claim:

1. A dam for a river, comprising a plurality of superimposed layers having their upstream ends disposed in a common vertical plane and their downstream ends staggered from the lowermost to the uppermost layer to form a hill of semi-trapezoidal section, the lowermost layer being placed directly onto the soft bed of the river, and each of said layers consisting of a plurality of juxtaposed stone-filled trellises, each having a substantially circular cross-section and a length equal to the total length of the corresponding layer.

2. A dam, as claimed in claim 1, in which the downstream end of each trellis has a smaller mesh than the upstream end thereof and is filled with larger stones than the latter.

KINJIRO KATO.