Aug. 24, 1926. 1,597,114

S. S. SCOTT

REVETMENT

Filed June 22, 1925

Fig. 1

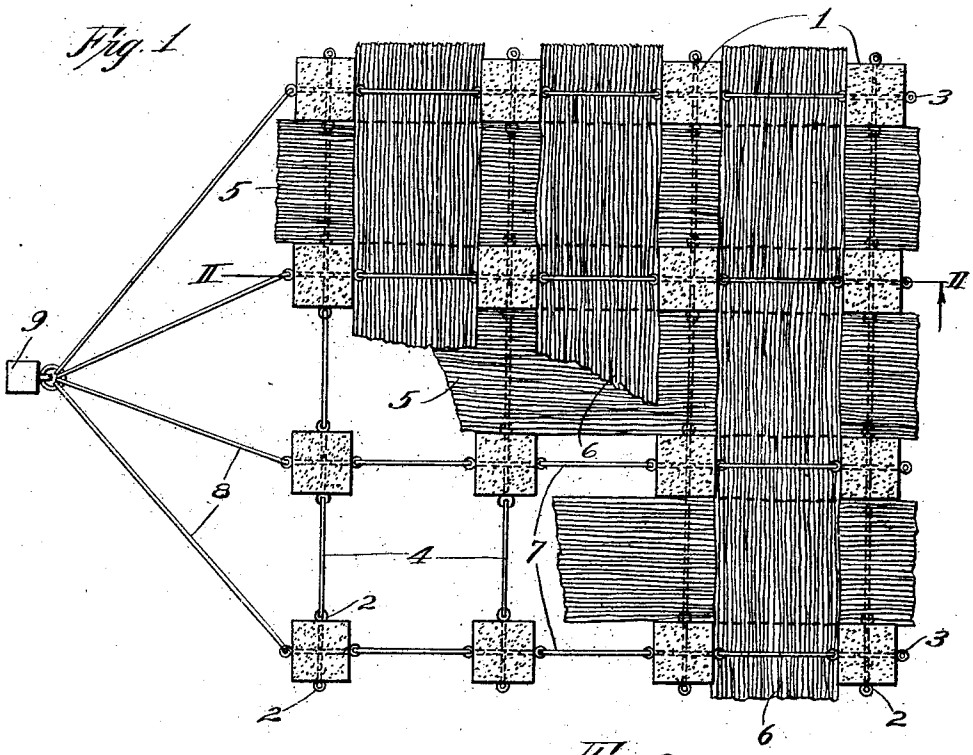


Fig. 2

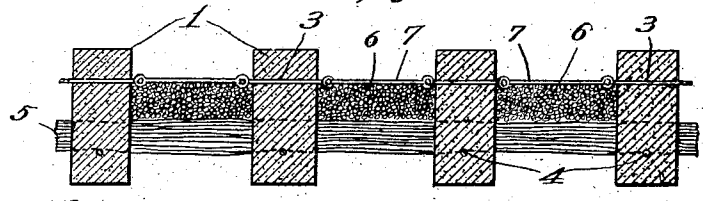
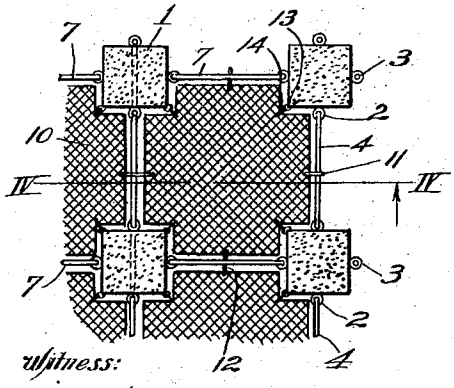


Fig. 3



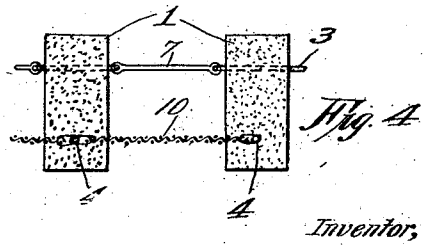


Fig. 4

Witness:
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UNITED STATES PATENT OFFICE.

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REVETMENT.

Application filed June 22, 1925. Serial No. 38,793.

This invention relates to a mattress or revetment for the protection of the banks of rivers, streams or other bodies of water from erosion caused by currents, wave action or other wash, and to also guard against surface or bank wash due to the seepage or flow of surface water from the bank behind the revetment into the stream.

One of the objects of the invention is to produce a revetment which may be assembled on shore and left in position to fall into place as the ground is eroded from below same, or which may be fed off a barge or the like as common in the art.

Another object is to produce a revetment formed of a combination of live willows, cottonwood or other flexible mat material and weights, such as concrete blocks, so related and tied together that they mutually cooperate to maintain their respective positions and in which the weights project below the mat for some distance and thereby form auxiliary anchors by embedding themselves in the bottom of the stream, and the possibility of a current of water projecting itself between the mat and a block and tearing the latter loose is thus entirely obviated.

A still further object is to produce a mat which is flexible in all directions and which will automatically assume a position conforming to the irregularities of the bank, sinking deeper to take care of the scour of the river or of a surface wash from behind the mat; it being understood that the mat is so constructed that the concrete blocks are protected from contact one with another by the interposition of the mat as will hereinafter appear.

Another object is to produce a revetment of the general character outlined which is of strong, durable, efficient and comparatively inexpensive construction, and in order that it may be fully understood, reference is to be had to the accompanying drawing, in which:

Figure 1 is an elevation of a mat constructed in accordance with the invention and partially broken away to disclose parts otherwise hidden.

Figure 2 is a section on the line II—II of Figure 1.

Figure 3 is an elevation of a slightly modified form of construction for use above the water like where the mat is alternately subjected to submersion and exposure to the air, or is practically continuously exposed to the air.

Figure 4 is a section on the line IV—IV of Figure 3.

In the said drawing where like reference characters identify corresponding parts in all of the figures, weights 1 of any suitable material, such as concrete blocks, and preferably slightly more than twice as long as they are square, are employed for the weighing down and anchoring of a willow or other suitable mat.

The blocks 1 are preferably cast of concrete and inset in each block and having projecting eyes or other means of attachment is a pair of eye-bolt rods 2 and 3, or looped wire cables or similar means, the connections being respectively located about one-third the length of the block from its opposite ends and extending at right-angles to each other as clearly illustrated in the drawing.

In practice, a plurality of blocks are regularly spaced equal distances from each other and their connections 2 or 3, adjacent the ground, are connected in parallel rows at right angles by wire ropes, cables or rods 4, all of equal length. It will be understood that the blocks may be cast with cylindrical passageways through which cables are threaded, the blocks being secured by clamps secured to the cables.

A layer of live willows, planks or the like 5 is now compacted between the blocks and upon the cables 2 and a second layer of willows 6 is laid and compacted between the blocks and crosswise of the willows 5, it being understood that this filler may be of any suitable material according to the nature of the work. The other connections 3, of the blocks are now connected together by wires, ropes, cables or rods 7 compressing and compacting the willows in position, it being understood that the cables 7 will be equal in length to the cables 4.

The revetment as a whole is now completed and may be anchored by a series of cables 8 to a post 9 set in the bank and left in position to settle, or may be carried out in the stream and fed into position off the ends of barges as common in the art.

It will be apparent from a consideration of the drawing and the above description that the distance between the concrete blocks and the proportions of the blocks may be

varied according to the number of pounds per square foot it is desired to construct the mat, and that each block is held reliably in position by its connecting cables and is protected from contact with the adjoining blocks by the interposed mat. It will also be apparent that the mat is reliably secured between the cables 4 and 7.

It will also be apparent that as the blocks project some distance below the mat their projecting ends by embedment in the bottom of the stream will aid materially in anchoring the mat in position and that there is no chance for a current of water to tear a block loose without the strain being spread over practically the entire area of the mat.

In Figures 3 and 4 a slightly modified construction is illustrated for use above the water-line. In such an exposed position willows and cottonwoods will soon rot. The concrete blocks and their connecting cables 4 and 7 are disposed as above described, but in place of the willow mat, suitable woven wire sections 10 or similar flexible materials are connected at opposite ends to the cables 2 by means of clips 11 and at their other opposite ends or edges are connected to each other by the clips 12. In order to still further secure the woven wire sections in position it may also be desirable to embed eyes 13 in the corners of the blocks 1 as illustrated, to which the corners of the wire sections 10 are secured by suitable fasteners 14.

A mat constructed as just described will function in all respects as does the willow mat, as the woven wire 10 will be sufficiently flexible to accommodate itself to the irregularities of the bottom of the stream.

From the above description, it will be apparent that I have produced a device of the character described which possesses all the features of advantage set forth as desirable; and while I have described and claimed the preferred embodiment of the same, I reserve the right to make all changes properly falling within the spirit and scope of the appended claims.

I claim:

1. A revetment comprising a plurality of weights spaced apart in parallel rows in both directions, each weight being connected to all adjacent weights, and flexible mat material bridging the spaces between the weights.

2. A revetment comprising a plurality of weights spaced apart in parallel rows in both directions, connections between each weight and the adjacent weights, and flexible mat material bridging the spaces between the weights and held in position by the connections between the weights.

3. A revetment comprising a plurality of weights spaced apart in parallel rows in both directions, connections between each weight and the adjacent weights, and flexible mat material bridging the spaces between the weights and held in position by the connections between the weights; said weights projecting below the plane of the mat for embedment in the bottom of the stream.

4. A revetment comprising a plurality of weights spaced apart in both directions to form two series of parallel rows at right angles to each other, connections between adjacent weights of one series of parallel rows, a series of mats resting on said connections, and a second set of connections between adjacent blocks and overlying the mat and extending at right angles to said first-named connections.

5. A revetment comprising a plurality of weights spaced apart in both directions to form two series of parallel rows at right angles to each other, connections between adjacent weights of one series of parallel rows, a series of mats resting on said connections and at right angles thereto, a series of mats upon said first-named series of mats and at right angles thereto, and a second set of connections between adjacent weights and overlying the second mat and extending at right angles to said mat.

6. A revetment comprising a plurality of weights spaced apart in parallel rows, means securing said weights together, and a filler between the parallel rows of weights and held in position by said securing means.

In witness whereof I hereunto affix my signature.

SYRUS SHIRLEY SCOTT.