W. E. PEDLEY.

METHOD OF PREVENTING EROSION OF RIVER BANKS.

APPLICATION FILED OCT. 28, 1914.

1,168,547. Patented Jan. 18, 1916.

Fig. 1.

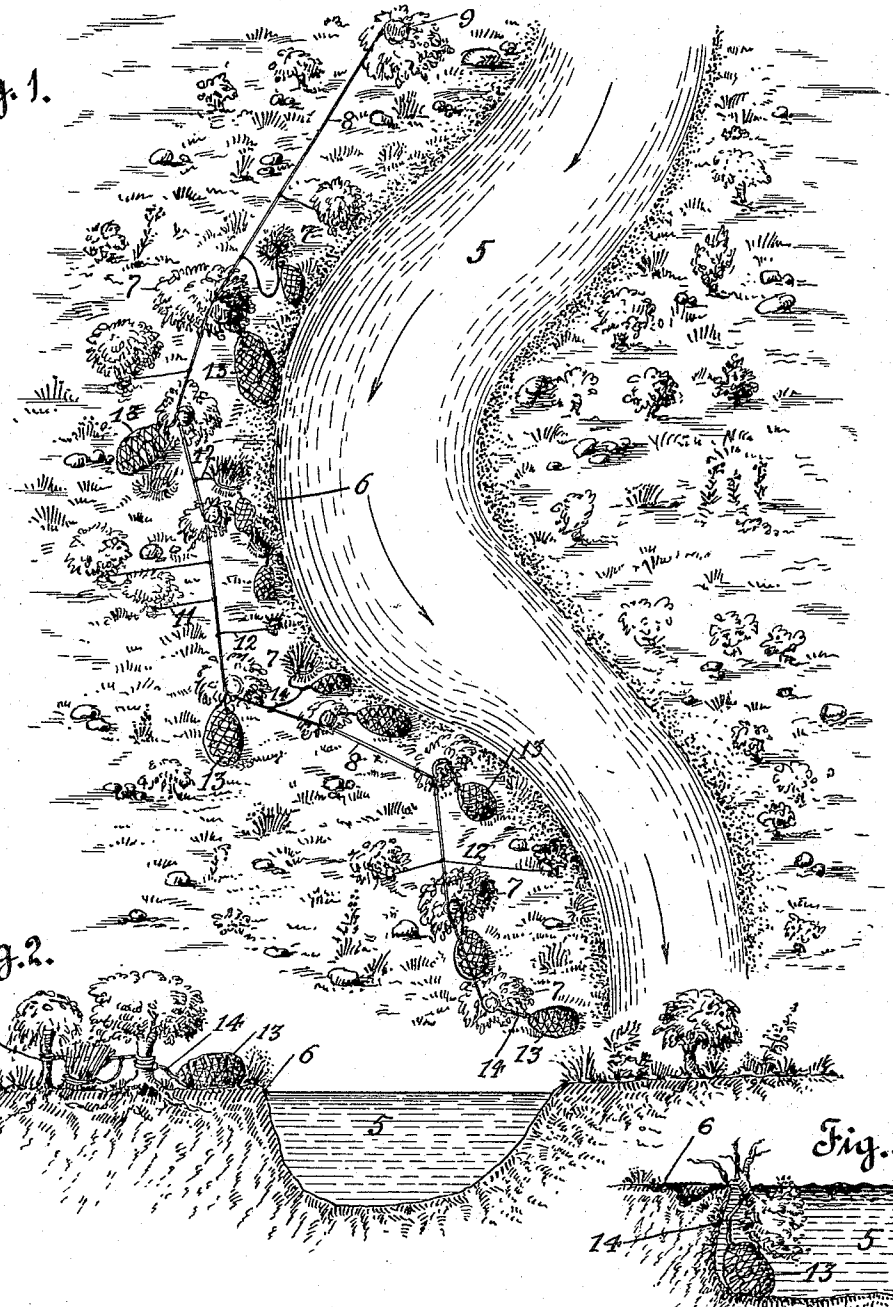


Fig. 2.

Fig. 3.

Witnesses,

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UNITED STATES PATENT OFFICE.

WILLIAM E. PEDLEY, OF RIVERSIDE, CALIFORNIA.

METHOD OF PREVENTING EROSION OF RIVER-BANKS.

1,168,547. Specification of Letters Patent. Patented Jan. 18, 1916.

Application filed October 28, 1914. Serial No. 868,999.

To all whom it may concern:

Be it known that I, WILLIAM E. PEDLEY, a subject of the King of Great Britain, residing at Riverside, in the county of Riverside, State of California, have invented new and useful Improvements in Methods of Preventing Erosion of River-Banks, of which the following is a specification.

This invention relates to a method and a means for preventing the erosion of river banks.

It is the object of this invention to provide a means and a method, whereby a revetment will be automatically formed on the embankment of a river or stream to prevent excessive erosion thereof, and at the same time provide means whereby alluvian will be caused to take place.

Rivers and streams frequently erode their banks to a considerable extent where bends occur, especially within their deltas. Various means and methods have been employed for preventing such erosion, as for instance, by constructing walls of stone or cement or by lining the embankment with piling and sometimes by employing brush mats or building levees with bags of sand and the like. These methods, while ordinarily efficient, entail considerable expense and labor which precludes their general use, particularly in outlying districts.

In carrying out the present invention trees and shrubbery which ordinarily have a thick and extensive growth along the banks of a stream are utilized in forming the revetment by anchoring and weighting portions thereof in such manner that as the banks are eroded and the soil carried away the trees and shrubbery instead of being washed away by the stream will be securely anchored on the eroded bank to form a brush wall in which debris will be deposited by the stream to form a protective mat and inhibit the further erosion of the embankment.

The means and method for carrying out the present invention is illustrated in the accompanying drawings, in which:

Figure 1 is a bird's-eye view of a river bend showing the manner of anchoring and weighting the trees and shrubbery. Fig. 2 is a sectional view of a stream and its banks showing the manner of tying the trees and shrubbery together and providing an anchorage for same prior to the erosion of the river bank. Fig. 3 is a view illustrating the manner in which the trees and shrubbery are anchored on the embankment of the stream to form a brush mat thereon when the banks of the stream have been undermined by the stream sufficiently to cause the anchored brush to be submerged and disposed along the embankment.

More specifically, 5 indicates the stream and 6 designates the bank on the side thereof which is most subject to erosion. In carrying out the present invention the trees and shrubbery 7 growing on the bank 6 are utilized and may be the natural growth or may be planted for the express purpose to which it is put.

A wire cable 8 is then fastened at a point 9 to a tree or other suitable anchorage so positioned as to be safe from erosion. This cable 8 is run parallel with the edge of the bank where erosion is taking place at a suitable distance therefrom; this distance being approximately 50 feet in ordinary practice. Extending laterally from the cable 8 on opposite sides thereof are cables 11 and 12; the cables 11 being secured to all trees and brush on the side of the cable away from the bank 6 for a width of fifty feet or thereabouts. The cables 12 are connected to trees and shrubbery growing along the bank 6 between the edge of the stream 5 and the cable 8; the trees and shrubs thus connected to the cable 8 being ordinarily spaced close together, but which are here shown in the drawings as separated for the sake of clearness.

As a means for sinking some of the trees and shrubbery which will be displaced by the undermining of the river bank 6 wire net sacks 13 containing boulders of a weight roughly proportioned to the size and flotation power of the tree or bush are provided and are wired to the tree trunk or connected thereto by short lengths of wire 14. These weights operate when the tree slides into the water so that it sinks to the bottom, or is wholly submerged; when a strip one hundred feet wide has been eaten away by the river, a portion of the trees and brush which grew upon that strip and which are attached to the cable 8, will be sunk to the bottom, other portions just submerged by reason of the attached sacks of stone, thus forming a protection against erosion. The revetment thus formed serves also to collect the debris carried by the stream which will become en-

tangled in the brush mat and form a body in which soil will be deposited so as to rebuild the eroded bank.

By this method the river is compelled to form its own revetment out of the materials which grow upon the land which is eroded away.

What I claim is:

A method of preventing the erosion of the banks of streams, consisting in running an anchored cable parallel with the edge of the stream spaced therefrom on the bank thereof, tying the live shrubbery and trees growing on the bank adjacent the stream on to said cable, and attaching weights to all or part of said trees and shrubbery sufficient to sink or submerge said trees and shrubbery upon erosion of the bank.

In witness that I claim the foregoing I have hereunto subscribed my name this 19th day of October, 1914.

WILLIAM E. PEDLEY.

Witnesses:
MARGUERITE BATES,
MARIE BATTEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."