No. 826,619. PATENTED JULY 24, 1906.

W. A. SMITH.

REVETMENT.

APPLICATION FILED MAR. 28, 1906.

Fig. 1.

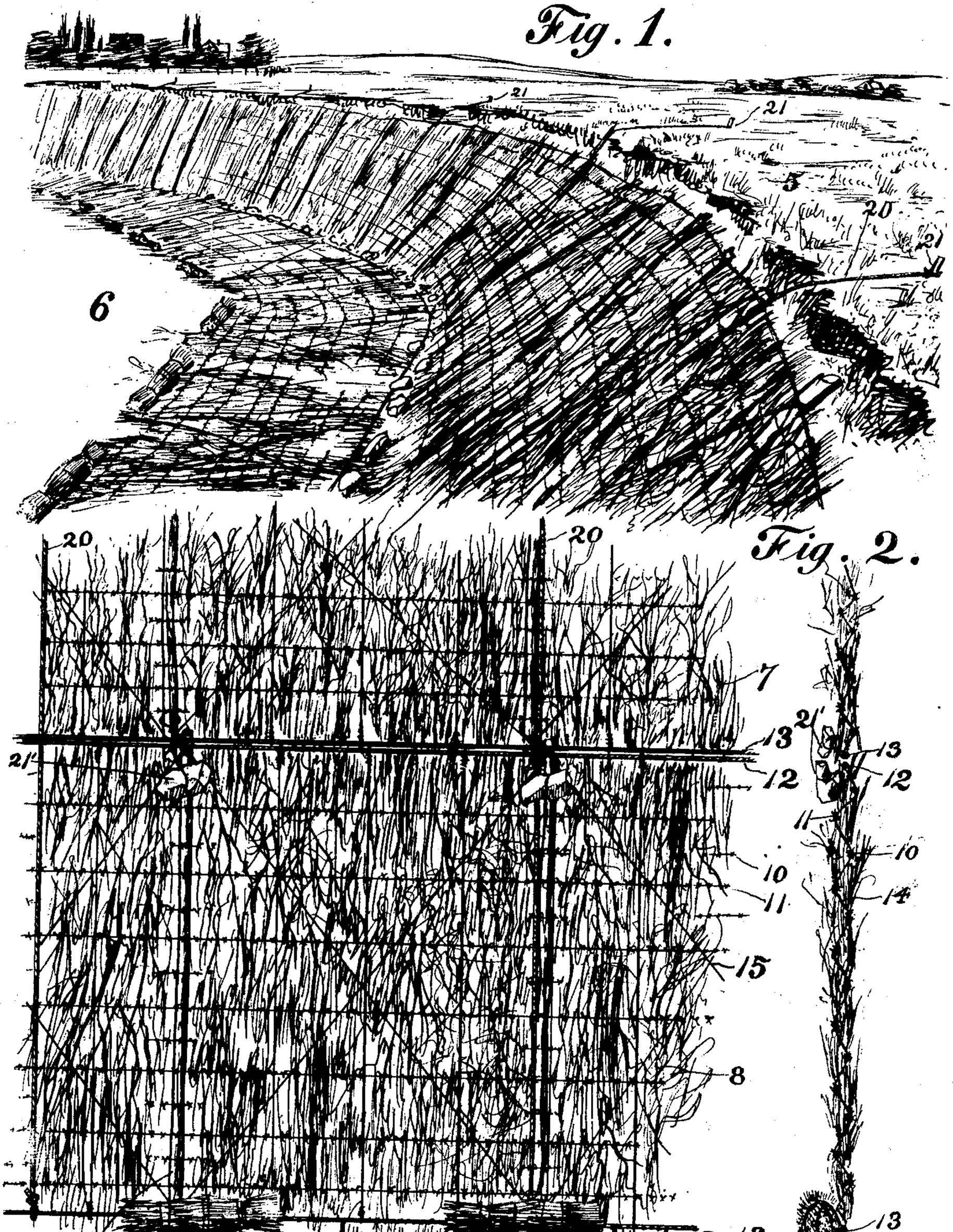

Fig. 2.

Fig. 3.

WITNESSES:

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REVETMENT.

No. 826,619. Specification of Letters Patent. Patented July 24, 1906.

Application filed March 28, 1906. Serial No. 308,523.

To all whom it may concern:

Be it known that I, WALTER A. SMITH, a citizen of the United States, residing at California, in the county of Harrison and State of Iowa, have invented a new and useful Revetment, of which the following is a specification.

This invention relates to revetments or mats for protecting levees and similar embankments.

The object of the invention is to provide a mat formed of a plurality of pivotally-united sections adapted to be anchored to the banks of a stream, so as to protect the levee or embankment from the erosive action of the water.

A further object of the invention is to generally improve this class of devices so as to add to their utility, durability, and efficiency, as well as to reduce the cost of manufacture.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, and illustrated in the accompanying drawings, it being understood that various changes in form, proportions, and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view showing the improved revetment or protecting-mat in position on the banks of a stream. Fig. 2 is a vertical sectional view, and Fig. 3 is a front elevation of a portion of the mat.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved mat is particularly designed for protecting the banks of rivers and similar streams from the detrimental action of flowing water and drift material and by way of illustration is shown anchored in position on the banks 5 of a stream 6.

The mat is preferably formed of a plurality of upper and lower sections 7 and 8 of any desired length and width, said sections being each formed of a series of spaced supporting poles or timbers 9, connected by transverse barbed or smooth wires 10, the latter being nailed, stapled, or otherwise rigidly secured to one side of each pole, as shown. Secured to the opposite side of each pole are similar transverse barbed or smooth wires 11, and interposed between the wires 10 and 11 is a layer of fibrous material, preferably consisting of the branches or limbs of trees, cornstalks, brush, or the like, as shown.

The timbers 9 of each mat-section are connected by transverse supporting-cables 12 and 13, and secured to said supporting-cables are spaced vertically-disposed stay-wires 14, there being stay-wires 15 extending from the upper end of one post or timber to the lower end of the adjacent post to assist in reinforcing and strengthening the several mat-sections. Disposed in spaced relation on the supporting-cable 13 of the lower mat-sections are a series of spaced anchors 16, each consisting of a bag of sand, gravel, or other heavy material 17, covered by an inner layer of straw or fiber and an outer layer of brush, the opposite ends of the anchor-coverings being tied or otherwise secured to the adjacent supporting-cable in any suitable manner, as by cords or wires 18.

The several upper and lower sections comprising the mat are preferably united by suitable tie-wires connecting the ends of the adjacent poles or timbers, so that the weight of the anchors 17 will cause each lower section to automatically accommodate itself to the bed of the stream, and consequently prevent the water from cutting under said sections and destroying the levee or embankment. Disposed substantially parallel with the timbers 9 are anchoring-cables 20, one end of each of which is secured to the transverse cables 12 and 13, while the opposite ends of the cables are fastened in any suitable manner to pegs or stakes 21, driven into the banks of the stream, as shown.

In constructing the mat the wires 10 are first secured to the timbers and the brush or branches placed in position on said wires, the wires 11 being subsequently extended over the top of the brush or branches and secured to said timbers by nails, staples, or similar fastening devices. The vertical stay-wires 14 are then threaded over and under the stay-wires 10 and 11 and fastened in any suitable manner to the supporting-cables 12 and 13, after which the diagonal stay-wires 15 are secured to the ends of timbers and the sinkers or anchors 16 placed in position on the lower cable 13, thus producing a strong durable mat which will effectually resist the action of the water and prevent the latter from washing away or disintegrating the banks of the stream.

Suitable sacks of sand or pieces of rock 21′

are also preferably tied to the timbers 9 to assist in retaining the mat in position on the embankment.

As many upper and lower sections of the mat may be united as is found necessary to protect the exposed surface of the bank, and the lower sections of the mat may project outwardly into the stream as far as is necessary to protect the bank against floating driftwood and other material.

From the foregoing description it will be seen that there is provided an extremely simple, inexpensive, and efficient device admirably adapted for the attainment of the ends in view.

Having thus described the invention, what is claimed is—

1. A mat formed of a plurality of pivotally-united sections each comprising spaced timbers connected by transverse cables, tie members secured to the opposite sides of the timbers, fibrous material interposed between the tie members, and diagonal stay members connecting the timbers and engaging the tie members.

2. A mat formed of a plurality of pivotally-united sections each comprising spaced timbers connected by transverse cables, tie members secured to the opposite sides of the timbers and disposed in spaced relation, fibrous material interposed between said members, vertical members alternately engaging the tie members and diagonal stay members connecting the timbers.

3. A mat formed of a plurality of pivotally-united sections each comprising spaced supporting-timbers, cables connecting said timbers, transverse tie members secured to the opposite sides of the timbers, fibrous material interposed between the tie members, and anchors secured to one of the supporting-cables.

4. A mat formed of a plurality of pivotally-united sections each comprising spaced timbers, supporting-cables connecting the timbers, tie members secured to the opposite sides of the timbers, fibrous material interposed between the tie members, spaced anchors secured to one of the mat-sections, and anchoring-cables carried by the adjacent mat-section.

5. A mat formed of a plurality of pivotally-united sections each comprising spaced timbers, supporting-cables connecting said timbers, tie-wires secured to the opposite sides of the timbers, brush interposed between the tie-wires, vertical stay-wires engaging alternate tie-wires, anchors secured to the timbers, diagonal braces connecting said timbers and engaging the tie-wires, and anchoring-cables connected to the supporting-cables.

6. A mat formed of a plurality of pivotally-united sections each comprising spaced timbers, supporting-cables connecting the timbers, tie members secured to the opposite sides of the timbers, fibrous material interposed between the tie members, anchors secured to one of the supporting-cables, a layer of fibrous material covering the anchors and secured thereto by binding-wires, and anchoring-cables secured to the supporting-cable.

7. A mat formed of upper and lower sections pivotally united and each comprising spaced timbers, connected by transverse supporting-cables, stay-wires secured to the opposite sides of the timbers, brush interposed between the stay-wires, vertical wires engaging alternate tie-wires and secured to the supporting-cables, diagonal braces connecting the timbers, anchors secured to one of the supporting-cables of the lower sections, anchors carried by the timbers, and anchoring-cables serving to connect the upper and lower sections of the mat.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WALTER A. SMITH.

Witnesses:
W. D. Cody,
Hugh R. Coulthard.