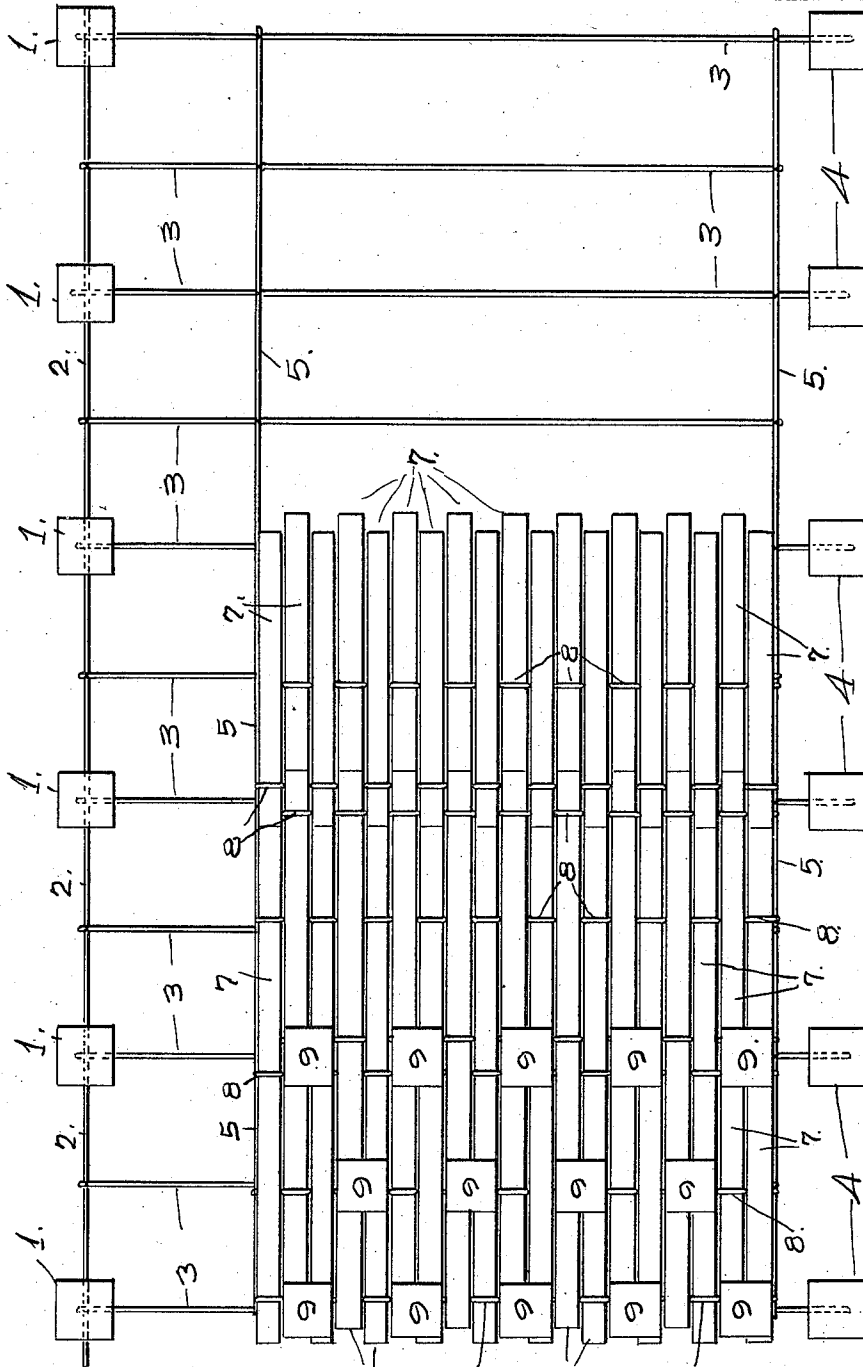


N. B. ELLERY.
FLEXIBLE MATTRESS.
APPLICATION FILED JAN. 21, 1913.

1,066,092.

Patented July 1, 1913.

2 SHEETS—SHEET 1.



Witnesses
Arthur White,
Harold Goodrich.

FIG. 1.

Inventor
Nathaniel B. Ellery.
By Arthur L. Slee.
his Attor.

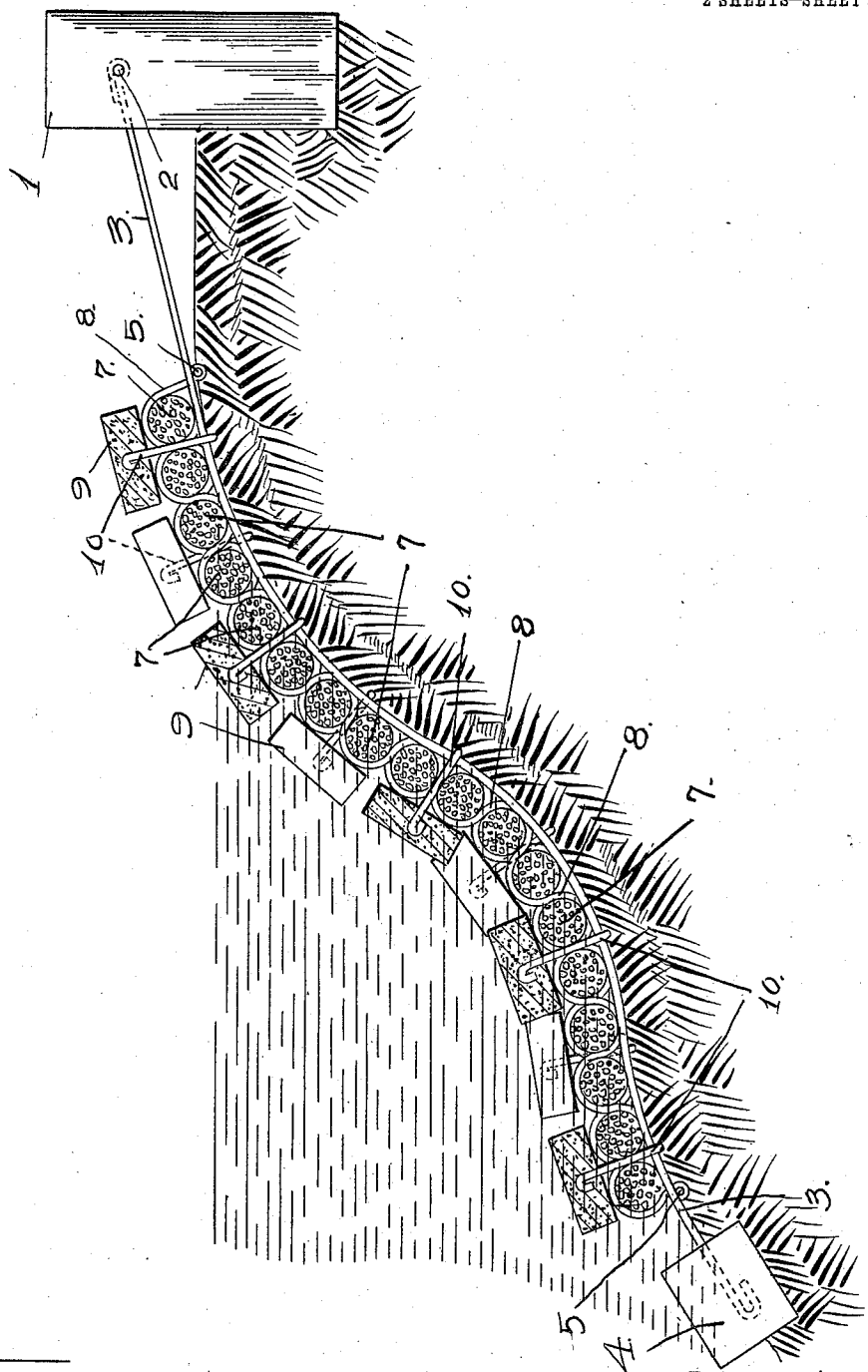
N. B. ELLERY.
FLEXIBLE MATTRESS.
APPLICATION FILED JAN. 21, 1913.

1,066,092.

Patented July 1, 1913.

2 SHEETS—SHEET 2.

Fig. 2.



Witnesses
Arthur White.
Harold Lunderbach.

Inventor
Nathaniel B. Ellery.
By Arthur L. Slee.
his Attorney

UNITED STATES PATENT OFFICE.

NATHANIEL B. ELLERY, OF SAN FRANCISCO, CALIFORNIA.

FLEXIBLE MATTRESS.

1,066,092.

Specification of Letters Patent.

Patented July 1, 1913.

Application filed January 21, 1913. Serial No. 743,311.

To all whom it may concern:

Be it known that I, NATHANIEL B. ELLERY, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented certain new and useful Improvements in Flexible Mattresses, of which the following is a specification.

My invention relates to flexible mattresses to be used as a revetment for banks and embankments wherein live brush, of either cotton-wood or willow, is secured to and caused to grow on the bank or embankment that is exposed to erosion by rapid currents, and its objects are, first, to provide an improved mattress of the character described that will adapt itself to the irregularities of the surface below the water, and second, to promote the growth of brush on the bank or embankment that is exposed to erosion by rapid currents for the purpose of preventing such erosion.

For a full and clear comprehension of my invention reference should be had to the drawings forming a part of this specification wherein like numerals of reference refer to similar parts throughout the said specification and drawings, and in which—

Figure 1 is a plan view of a portion of a flexible mattress shown in successive stages of construction. Fig. 2 is a cross section of a completed mattress, on an enlarged scale, in position on a bank or embankment to be protected.

The numeral 1 is used to designate a number of fixed posts and 2 is a longitudinal cable running through the posts 1 and to which is secured the transverse cables 3. Each alternate cable 3 has its upper end molded into one of the posts 1 and the other end thereof has a weight or anchor 4 secured thereto. Two longitudinal cables 5 are secured to the transverse cables 3 and to the network thus formed a number of live brush rolls 7 are secured by means of the binding wires 8, the said wires 8 extending from one selvage cable 5 to the other. Concrete or other suitable weights 9 are laid upon the brush rolls 7 and are held in place by means of cables or wires 10 which are secured to the weights 9 and which pass between the rolls 7 and engage the transverse cables 3 to which the said rolls 7 are secured. In this manner live brush of willow or cotton-wood is secured to the bank or embankment to be protected until such time as

the said brush shall take root in the said bank or embankment. Contact of the live brush with every portion of an irregular bottom or surface is insured by the weight of the anchors 5 and the weights 9.

After the brush has sprouted and taken root in the earth of the bank or embankment the agglomeration of roots thus formed constitutes a proper protection for the said bank or embankment against erosion by the currents after the retaining network of cables have been corroded by the action of the water and are no longer capable of retaining the flexible mat of the live brush in position.

The live brush rolls sprout and take root readily in the earth of the bank or embankment to which they are secured for the reason that the contact with the earth is insured by the weights 4 and 9 and their rapid growth is further facilitated by the water in which they are submerged.

It is obvious from the foregoing that I have provided a flexible mattress that is adapted to serve as a revetment for banks and embankments for the purpose of preventing the erosion thereof by rapid currents and also a flexible mattress of the character described that is adapted to maintain a contact with every portion of an irregular surface. I have also provided means for insuring the growth of brush on banks and embankments for the purpose described.

The details of construction being so susceptible to variation I do not wish to confine myself to the precise construction shown herein but rather to avail myself of any modification that may properly fall within the scope of my invention. For instance, it is immaterial in what manner the brush is secured to the cables or in what manner the weights 9 are retained. It is the purpose of my invention to secure a revetment of live brush to a bank or embankment, which is exposed to erosion by the action of rapid currents, in such a manner that they shall be continually submerged and in constant contact with every portion of an irregular submerged surface of such bank or embankment.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is—

1. In a flexible mattress of the character described, the combination of a plurality of fixed posts in an embankment to be pro-

3 tected against erosion by rapid currents; a
longitudinal cable connecting the said posts;
lateral cables connected to the longitudinal
cable and having weights secured to the
5 lower ends thereof; longitudinal cables se-
cured to the lateral cables; rolls of live
brush secured to the lateral cables; and
means for submerging the cables and the
rolls of live brush secured thereto.
10 2. In a flexible mattress adapted to serve
as a revetment for banks and embankments
the combination of a plurality of fixed posts
in the bank to be revetted and above the
water line; a longitudinal cable secured to
15 and connecting the fixed posts; lateral
cables having weights secured to the lower

end of each alternate cable secured to the
fixed posts and the longitudinal cable; longi-
tudinal selvage cables secured to the lateral
cables; live brush rolls secured to the lateral 20
cables and between the longitudinal selvage
cables; and weights secured to the lateral
cables and adapted to submerge the lateral
and selvage cables and the live brush se-
cured thereto. 25

In witness whereof I hereunto set my sig-
nature in the presence of two subscribing
witnesses.

NATHANIEL B. ELLERY.

Witnesses:

ARTHUR WHITE,
CHAS. F. DUSENBERG.

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