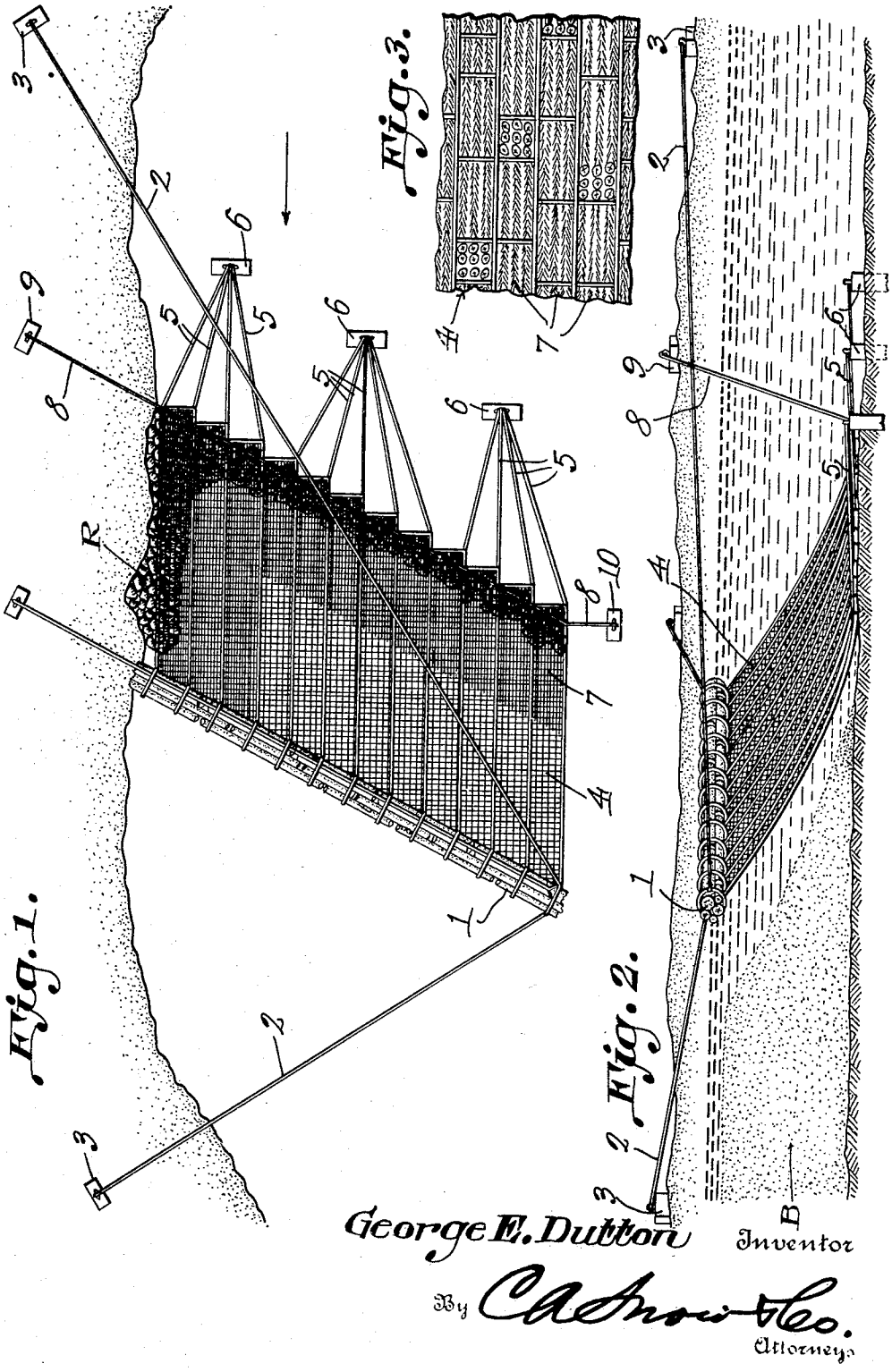
Feb. 25, 1930. G. E. DUTTON 1,748,444

MEANS FOR PROTECTING RIVER BANKS

Filed March 25, 1927



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Patented Feb. 25, 1930 1,748,444

UNITED STATES PATENT OFFICE

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MEANS FOR PROTECTING RIVER BANKS

Application filed March 25, 1927. Serial No. 178,278.

This invention relates to a means for protecting the banks of rivers and the like and to a method of producing a retard whereby the desired protection will be afforded.

The swift moving currents of some streams result in the washing away and caving of the banks thereof with the result that disastrous consequences frequently occur.

It is an object of the present invention to provide an efficient form of retard which, when erected in the stream at the point where protection is to be provided, will act to quiet the water, precipitate solids therefrom and collect trash with the result that a sand bar will be formed, the same gradually increasing in proportions until the current of water will finally be deflected away from the bank to be protected.

Another object is to provide novel means whereby a mattress for use as a retard can be properly supported within the moving body of water.

Another object is to provide a mattress of new and novel construction which will act efficiently as a retard for effecting the precipitation of solids such as sand and the like.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings,

Figure 1 is a plan view of the retard positioned adjacent a bank of a stream.

Figure 2 is a side elevation thereof.

Figure 3 is a plan view of a portion of the mattress constituting a part of the invention.

Referring to the figures by characters of reference 1 designates a boom constituting a float, this boom being made up of one or more timbers suitably held together and extending from the bank of the stream a desired distance. It is preferred to have the boom inclined slightly in the direction of the flow of the current, the boom being held in this position by strong wires or cables 2 extending from the outer or free end thereof to concrete anchors 3 or the like embedded in the ground adjacent the edge of the stream. These anchoring cables are disposed at such angles as to hold the boom substantially at the selected angle while at the same time permitting it to rise and fall with the surface of the water.

Secured to the boom 1 is a coarse netting 4 formed of strong galvanized wire with a mesh of three or four inches. The screen thus produced is extended up-stream any desired distance although in practice it has been found desirable to utilize a screen approximately eighty feet in length. The width of the screen will of course be substantially equal to the length of the boom and this boom or float can be of any length desired.

Additional anchoring cables 5 are attached to the wire fabric and are secured to concrete anchors 6 or the like embedded in the bed of the stream so as to hold the net or screen 4 in proper position at the up-stream side of the boom. The up-stream portion of the net is preferably provided with live willow sprouts interwoven therewith as indicated at 7, thereby forming a mattress extending throughout the width of the net and any desired distance from the up-stream edge of the net. In practice it has been found desirable, where the net is approximately eighty feet in length, to provide a mattress of approximately thirty feet in length. This mattress formed of the willow sprouts and the wire netting indicated generally at 7 is adapted to rest close to or upon the bed of the stream and after the retard has been properly assembled for use the current will flow through the net. The mattress constituting the facing of the net would serve to retard the flow of the water so that particles of sand or mud suspended in the water will be precipitated. Consequently a sand bar will be formed gradually beneath the net as indicated for example at B. Furthermore trash will be collected by the upper portion of the net and, consequently, a supplemental or re-

tarding bank will gradually be built up with the result that the current will soon be deflected around the end of the boom and away from the original bank for which the protection was provided.

It has been found in practice that the widths of wire fabric can be held together by threading the cables 5 through the lapping edges of said widths, the down-stream ends of these cables being attached to the boom.

To insure proper positioning of the upstream end of the wire fabric, a transverse cable 8 can be connected thereto, one end of this cable being anchored to the bank as shown at 9 while the other end is anchored in the stream as shown at 10.

For the purpose of preventing scouring under the mattress it is designed to place rocks thereon as shown, for example at R, in Figure 1.

What is claimed is:

A retard of the class described including a boom constituting a float, means diverging from the outer end of the boom to the shore line and anchored beyond the shore end of the boom for holding said boom against swinging horizontally, said means being flexible, a wire net extending upstream from the boom and having its lower edge engaging the bed of the stream, cables extending longitudinally of the net and secured at one end to the boom, the other ends of the cables extending upstream beyond that edge of the net on the bottom of the stream, means for anchoring said ends of the cables to the bed of the stream, means mounted on the upstream edge of the net for weighting it and holding it tightly upon the bed of the stream, and live willow sprouts interwoven with the lower portion of the net, the upper portion of said net being left as an open mesh fabric for the flow of water therethrough, said open mesh fabric constituting means for retarding the water flow.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

GEORGE EDSON DUTTON.