March 15, 1932. W. H. CLEVELAND ET AL 1,849,323

EROSION RETARDER FOR DITCHES

Filed March 19, 1930 2 Sheets-Sheet 1

Fig. 1.

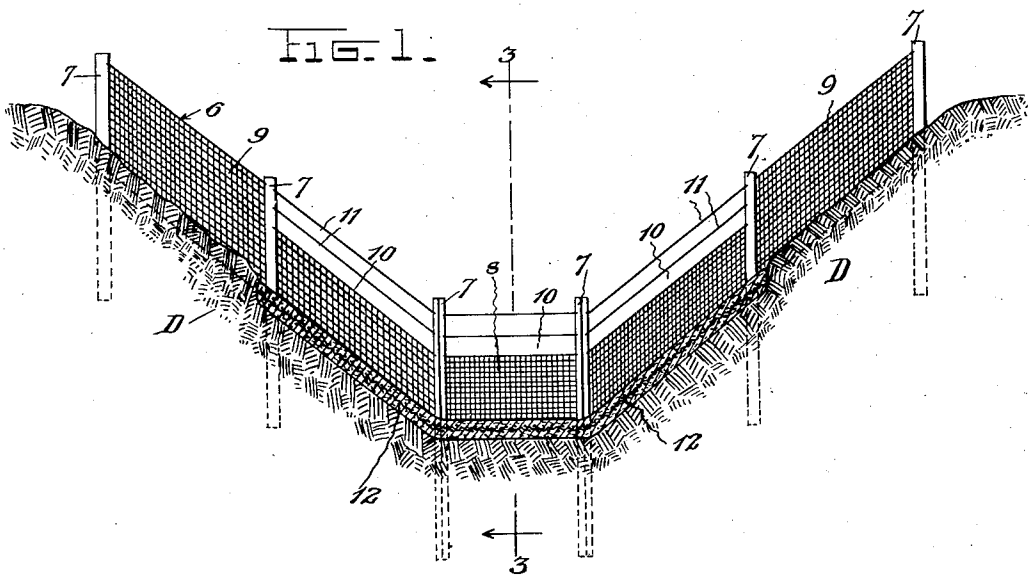
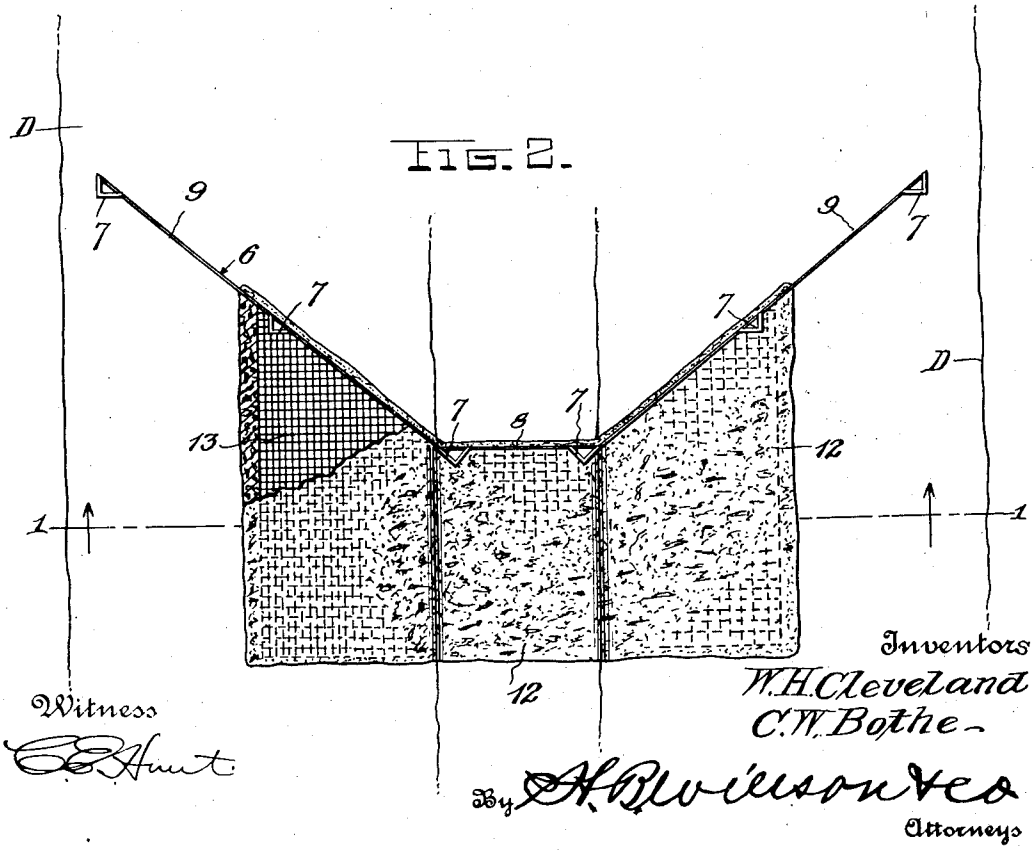


Fig. 2.



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FIG. 3.

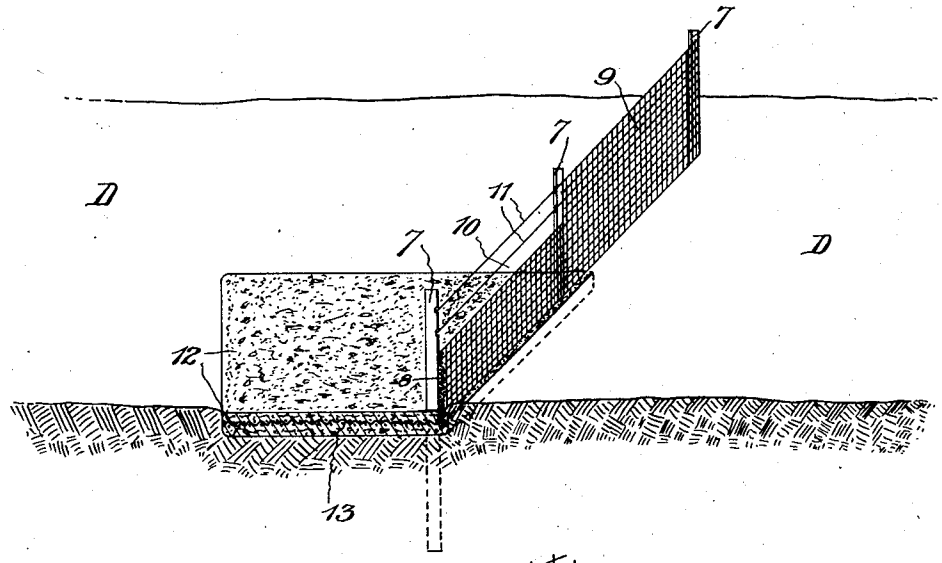


FIG. 4.

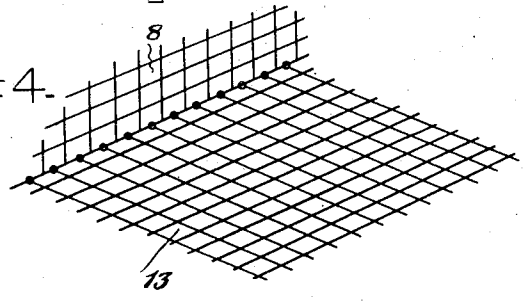
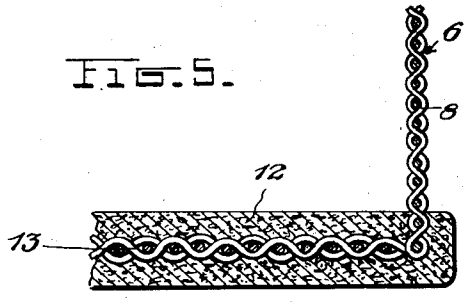


FIG. 5.



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EROSION RETARDER FOR DITCHES

Application filed March 19, 1930. Serial No. 437,117.

The invention relates to openwork barriers for ditches and water channels in general, to check rush of water therein and to arrest the travel of any débris which may be traveling with the water current.

It is one object of the invention to provide a simple and inexpensive construction which may readily be formed from materials which can be purchased upon the market, overcoming the necessity of providing a number of specially made parts.

A further object is to provide a concrete slab which prevents washing out of the bottom of the ditch at the down-stream side of the barrier, said slab also serving as means for effectively anchoring the lower portion of the barrier and for holding a number of the barrier-supporting posts against tilting under the pressure of the water.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, description being accomplished by reference to the accompanying drawings.

Fig. 1 is a transverse sectional view illustrating the down-stream side of the improved erosion retarder.

Fig. 2 is a top plan view partly broken away and in horizontal section and by the line 1—1 this view illustrates the plane on which the sectional portion of Fig. 1 is cut.

Fig. 3 is a vertical sectional view on line 3—3 of Fig. 1.

Fig. 4 is a perspective view illustrating a portion of the wire mesh barrier connected with a wire mesh reinforcement for the concrete slab.

Fig. 5 is an enlarged vertical sectional view similar to a portion of Fig. 3.

A wire mesh barrier 6 is provided, supported by suitable posts 7 driven into the ground, said posts being preferably of metal construction and provided with integral means of conventional form for engagement with the wire to anchor the latter. The barrier 6 preferably embodies an intermediate portion 8 extending straight across the ditch or the like D, and two wing portions 9 extending up the banks of the ditch and diverging upstream. The portion 8 and the contiguous portions of the wings 9, are preferably of less height than the remaining portions of the barriers, providing spillways 10, across which widely spaced wires 11 preferably extend, said wires being anchored to certain of the posts 7.

The lower portion of the barrier 6 may extend any desired distance into the ground and said lower portion is connected with a concrete slab 12 on the ditch bottom. This slab 12 tenaciously anchors the lower edge of the barrier 6 and it also prevents the severe washing away of the ditch bottom which would take place at the down-stream side of the spillways 10. Then too, the slab 12 engages a number of the posts 7 and hence holds them against tilting under the pressure of the water checked by the barrier.

In the preferred construction, the upstream edge portion of the slab 12 is molded around the lower edge portion of the barrier 6 and around portions of a number of the posts 7, so that slab, posts and barrier become one rigid unit which will consequently be more effectively anchored and more durable than otherwise. It is preferable to provide the slab 12 with a wire mesh reinforcement 13 which is substantially coextensive therewith, said reinforcement being connected with the lower edge portion of the barrier 6, as illustrated in Figs. 3, 4 and 5.

By the novel construction shown and described or an equivalent thereof, an erosion retarder is provided which is of simple and inexpensive construction, may readily be formed from materials which can be purchased upon the market and will be highly efficient and durable. By checking the down-rush of water, particularly after a hard rain, severe washage is prevented and it will be understood that by using the retarders in a number of ditches or the like, discharging for instance into a stream, the rate of discharge into said stream may be checked so that there is less danger of the stream overflowing its banks. Moreover, the retarders or barriers will hold in check any floating débris which would otherwise be discharged into the stream with danger of clogging it and causing flood conditions.

While the details disclosed may be considered as preferred, it is to be understood that within the scope of the invention as claimed, variations may be made.

What is claimed is:

1. An erosion retarder comprising a wire barrier embodying a straight vertical central portion extending across a ditch bottom, and two wing portions inclining from said central portion up the bank of a ditch, said wing portions diverging upstream; vertical posts set in the ground at the juncture of said central and wing portions, at the outer ends of said wing portions and between the ends of the latter, all of said portions being secured to said posts; a cement slab having a central bottom portion extending downstream from said central portion of the barrier, and two inclined cheek portions extending downstream from said wing portions of the barrier along the ditch banks, the upstream edges of said inclined slab portions diverging upstream; the lower edge of said barrier being embedded in the upstream edge portion of said slab, said upstream edge portion of the slab being molded around a plurality of the aforesaid posts, whereby a unitary wash and pressure-resisting structure is produced.

2. An erosion retarder comprising a central relatively short vertical wire mesh barrier portion extending across a ditch bottom, and two relatively long wire mesh wings whose upper edges are inclined outwardly, said wings diverging upstream and extending up the ditch sides, said central barrier portion and substantially the inner halves of said wings being of uniform height throughout their lengths and providing a spillway, substantially the outer halves of said wings being of greater height throughout their lengths to guide débris-laden water toward said spillway, vertical posts to which the barrier is secured, said posts being set in the ground at the juncture of said wings with said central barrier portion, at the outer ends of said wings and between the ends of said wings, and a cement slab having a flat central bottom portion extending downstream from said central barrier portion on the ditch bottom, and two cheek portions inclining up the ditch banks from said central slab portion and extending downstream from said wings, the upstream edges of said cheek portions diverging upstream and being molded around a plurality of said posts and around the lower edges of said central barrier portion and said wings.

3. An erosion retarder comprising a central relatively short vertical wire mesh barrier portion extending across a ditch bottom, and two relatively long wire mesh wings whose upper edges are inclined outwardly, said wings diverging upstream and extending up the ditch sides, said central barrier portion and substantially the inner halves of said wings being of uniform height throughout their lengths and providing a spillway, substantially the outer halves of said wings being of greater height throughout their lengths to guide débris-laden water toward said spillway, vertical posts to which the barrier is secured, said posts being set in the ground at the juncture of said wings and between the ends of said wings, and widely spaced wires secured to the posts, above and parallel with the portions of the barrier constituting said spillway.

In testimony whereof we have hereunto affixed our signatures.

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