

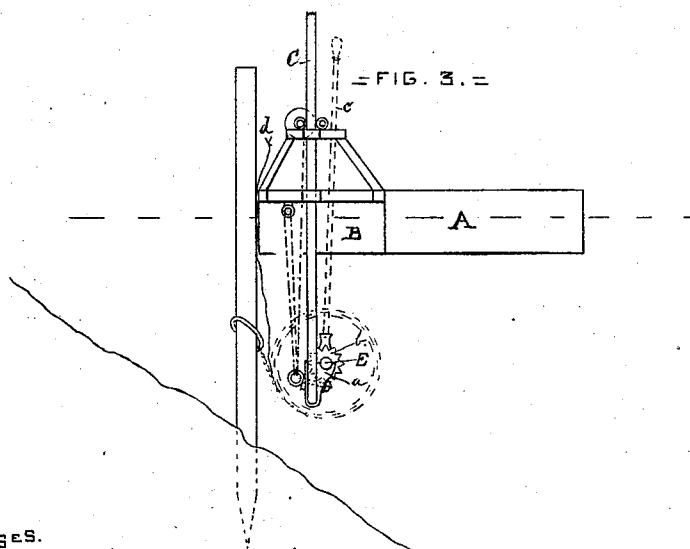
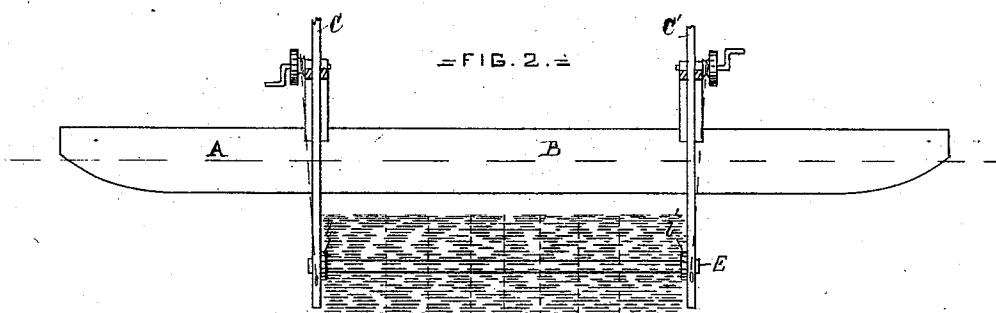
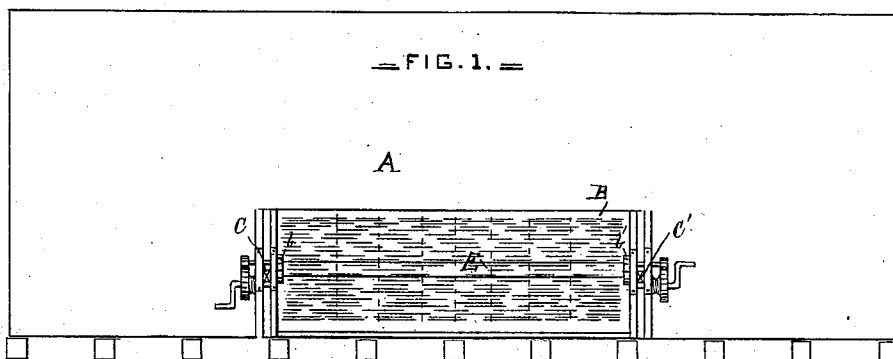
(No Model.)

W. H. BELL.

Placing Mattresses on Banks of Streams
to Prevent Erosion.

No. 236,295.

Patented Jan. 4, 1881.



WITNESSES.

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PLACING MATTRESSES ON BANKS OF STREAMS TO PREVENT EROSION.

SPECIFICATION forming part of Letters Patent No. 236,295, dated January 4, 1881.

Application filed June 19, 1880. (No model.)

To all whom it may concern :

Be it known that I, WILLIAM H. BELL, a resident of the city of New Orleans, Parish of Orleans, and State of Louisiana, have invented a certain new and useful Improvement in Placing Mattresses on Banks of Streams to Prevent Erosion; and I do hereby declare the following to be a full, clear, and correct description of the same, reference being had to the annexed drawings, making a part of this specification.

This invention consists of an apparatus for rolling and unrolling upon wooden or hollow metallic shafts mats or mattresses of cane or other material; and it provides a means for lowering and unrolling the same on the beds or slopes of streams and harbors.

In order that my invention may be more fully understood, reference must be had to the accompanying drawings, whereon—

Figure 1 represents a top view of a barge provided with a recess and suitable raising and lowering apparatus. Fig. 2 is a side elevation of the above figure, and Fig. 3 a cross-section of the same.

On the different figures A represents the barge, one side of which is recessed, as at B. At the ends of this recess suitable guides are constructed to receive a frame composed of two vertical pieces, C C', the upper portions of which are connected by braces, so that the whole may be raised or lowered, as the nature of the work may require. The aforesaid frame may be raised or lowered by means of pinions and racks, or by means of chains and blocks or eyes, as preferred. The peculiar construction of the barge gives sufficient space to the ends thereof for collecting the material, which is afterward woven, either by machine or hand, at the space left at the center of the barge directly opposite the recess B.

The mattresses are woven of any desired length, and as fast as constructed are rolled on a shaft, E, the ends of which are journaled in half-boxes *a*, that are secured to the lower ends of the vertical pieces C C'. To facilitate the rolling of the mattresses the shaft E is provided near its ends or journals with ratchet-wheels *b b'* and adjustable levers *c*. During the rolling of the mattresses the frame is allowed to descend, so that the shaft may sink

in the water as the roll increases in diameter, thus relieving the gear of unnecessary weight, and at the same time allowing the mattress to fill with sediment. When the guide-posts have been lowered to a sufficient depth to allow the mats to rest on the bottom of the stream the final end of the mat is secured to piles or other fastenings. The frame is then sunk still lower, so as to allow the journals of the shaft to be raised out of their bearings and to roll down the slope of the bed.

In order to guard against inequalities of slope, which would stop the shaft, a parbuckle-line, *d*, is rolled up with a mat, so that a strain on the said line will cause the mat to roll over the obstruction until its full length has been rolled out upon the bottom, when both the shaft and parbuckle-line will be released and brought to the surface, ready for use again.

In order to protect the workmen from the heat of sun or from rain the barge should be covered with a canvas or other roofing; and to insure, in cases of inequalities in the slope, the unwinding of the mat and the spreading out of the same, the parbuckle-line may be connected with a windlass placed upon a small barge at the outside of the larger one, so that the said barge would, by the strain, follow the roll outward until the mattress is stretched upon the slope and the shaft released from its bearings.

From the above it will be readily understood that the general arrangement of the barge affords great facilities for putting the material for mattresses together, and that the rolling of the mattresses upon a shaft in the water assists, by the accumulations of sediment, the sinking of the same, consequently requiring less weight of sand-bags or other material than if the mattresses were spread upon the surface of the stream. Furthermore, the method of lowering to the bottom before letting go insures the mattresses being started at the desired place and rolled out in the required direction, regardless of currents and eddies. The recess allows the mattresses to be rolled up and lowered while the barge is moored close to the guide piling or fastenings.

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

1. The method of sinking mats upon the bottom of water-courses, which consists in forming the mat into a roll, securing one end of the same to piling or other fastening, and permitting or causing the roll to unroll down the
5 slope, substantially as described.

2. A barge having a recess at one side thereof in which is fitted a frame composed of two vertical pieces, C C', having their upper ends
10 connected by braces and their lower ends provided with half-boxes adapted to carry the

shaft E and release the same whenever the roll shall touch the bed, as described, and for the purpose specified.

3. In combination with the shaft E and mat 15 thereon, a parbuckle-line, d, operated from the main barge or from a smaller one placed outside thereof, as and for the purpose set forth.

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Witnesses:

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