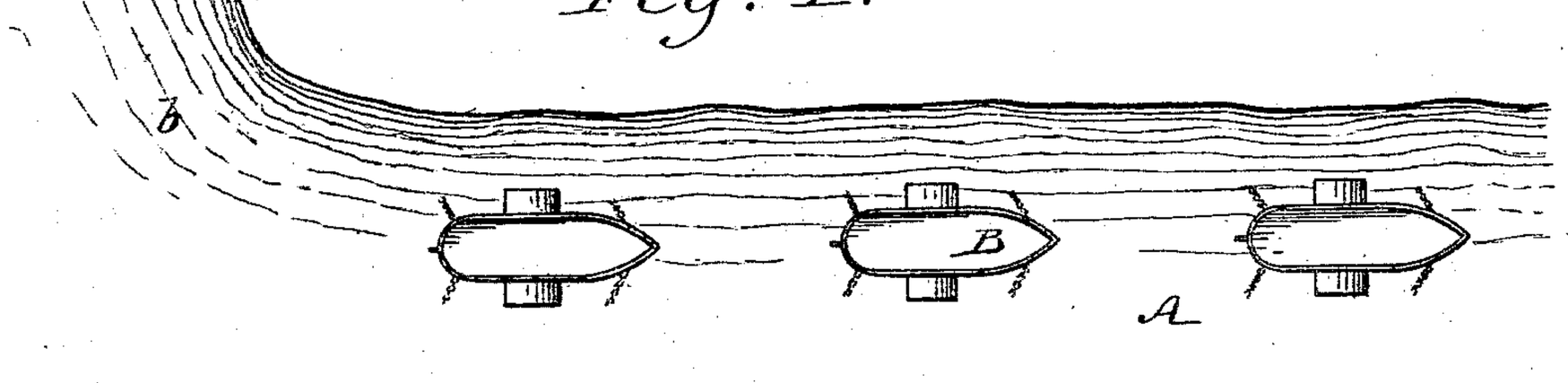
(No Model.)

J. C. COULT.

MEANS FOR CONTROLLING THE FLOW OF NAVIGABLE RIVERS OR OTHER WATERS.

No. 411,979. Patented Oct. 1, 1889.

Fig. 1.



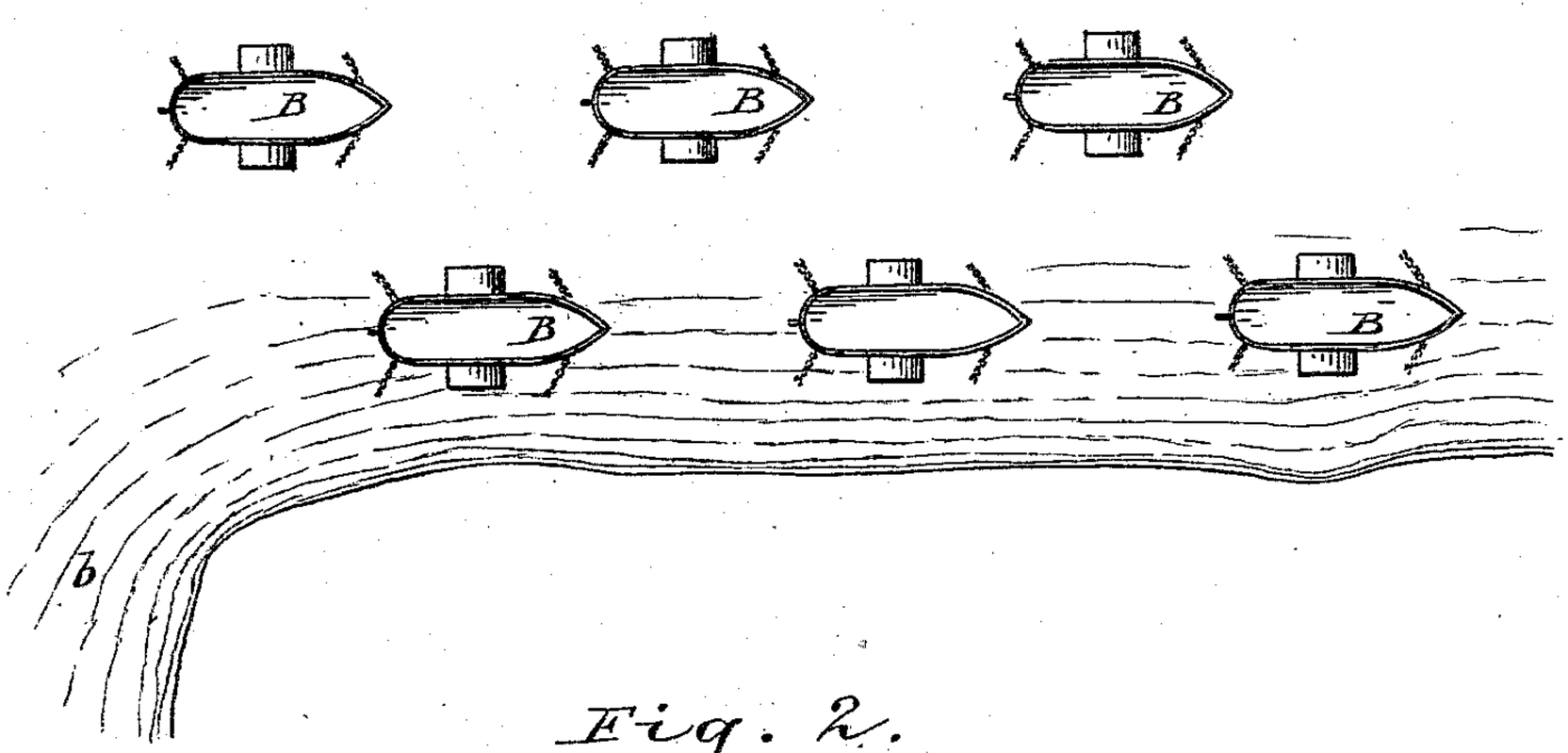
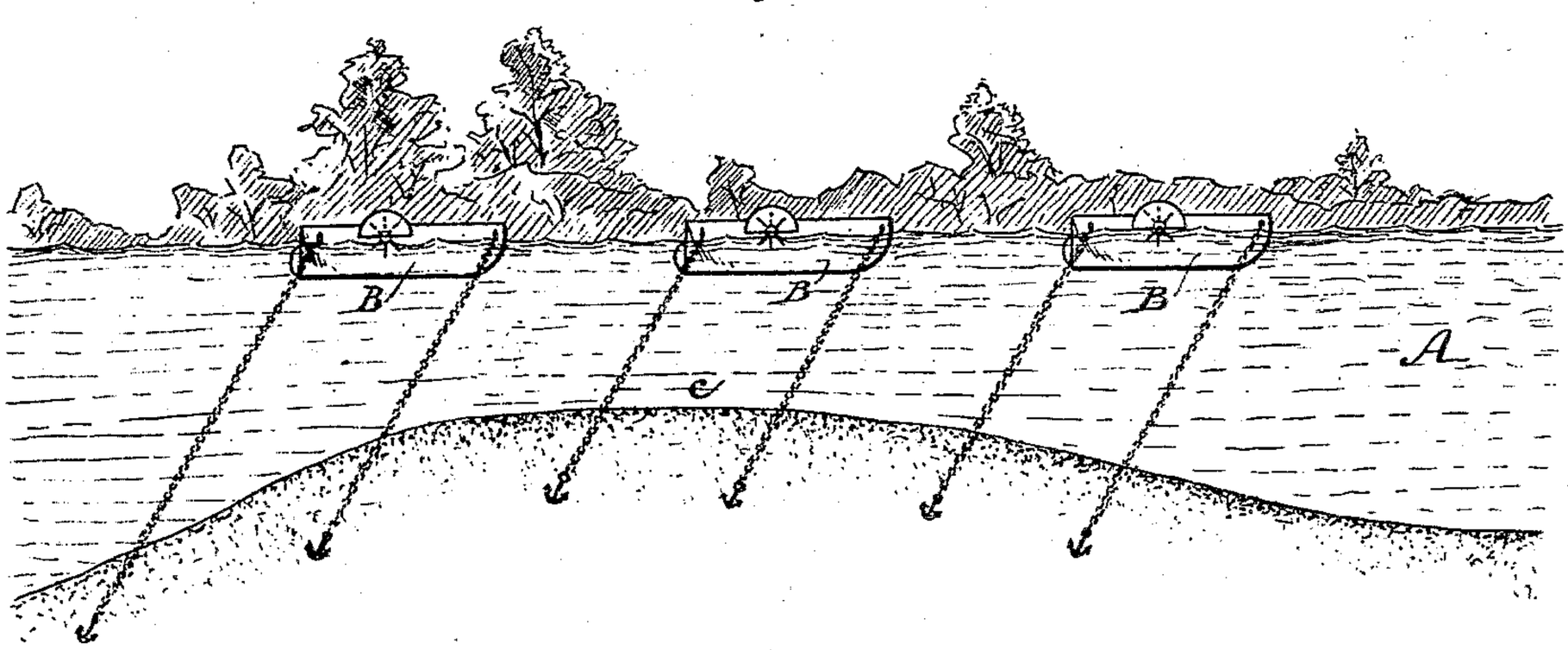


Fig. 2.



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JOSEPH C. COULT, OF CROCKETT, TEXAS.

MEANS FOR CONTROLLING THE FLOW OF NAVIGABLE RIVERS OR OTHER WATERS.

SPECIFICATION forming part of Letters Patent No. 411,979, dated October 1, 1889.

Application filed April 27, 1889. Serial No. 308,788. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH C. COULT, of Crockett, in the county of Houston and State of Texas, have invented a new and Improved Means for Controlling the Flow of Navigable Rivers or other Waters, of which the following is a full, clear, and exact description.

The object of my invention is to remove or prevent the formation of sand-bars at the mouths of harbors or elsewhere, calculated to obstruct navigation; also, to prevent the overflow of navigable rivers and the breaking of levees or destruction of jetties.

My invention consists in a novel means of accomplishing these and other like ends by mechanical forces applied to increase the natural current or outflow of the navigable water toward its outlet or the ocean through the instrumentality of suitably located and anchored vessels provided with propelling devices, substantially as hereinafter described, and pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 represents a diagram in plan view illustrating my invention; and Fig. 2, a further diagram, in elevation, of the same.

To explain the principle upon which my invention works—as, for instance, in removing sand-banks forming at the mouths of harbors or in the bottoms of navigable rivers—it may be remarked that if two opposing currents—as, for example, an incoming current from the ocean and an outflowing current from the head of a river—meet at a point with equal force the shifting sands carried by said currents would be deposited at said point and form a bar, which continues to increase. Now, if the force of the outflow should be greater than the resistance of the incoming current from the ocean, such bar would not form at the point named, but the accumulating sands would be carried out into the ocean. To accomplish this I artificially increase the natural current of the river or stream to overcome the resistance presented by the current from the ocean, and the same principle applies to preventing a river from overflowing its banks and for the better protection of levees and jetties.

A in the diagrams indicates a harbor or river communicating—say at its mouth *b*—with the ocean, and where a sand-bank *c* is liable to form. To prevent this, or it might be to prevent the river from overflowing its banks in case of a freshet or flood, and so breaking levees, injuring jetties, or destroying property by an overflow, I "plant," as it may be termed, a number of powerful steamboats B, provided with side wheels or propellers, or both, side by side over or inside the bar, or at a suitable distance from and in proximity to the ocean, and securely anchor the same with their heads upstream, as shown in Figs. 1 and 2, and set the propelling machinery of said vessels, while thus anchored, in motion at a high velocity—sufficient and in the direction, if the vessels were free, to propel them forward at a considerable speed against the force of the current; but, the vessels being anchored and at rest, the natural current of the stream in an outflowing direction will be accelerated by the propellers of the vessels being driven faster than the current and the water be forced backward from the vessels in proportion to the speed of the latter were they in motion. This velocity should be sufficient to overcome the resistance of the incoming current from the ocean. The number of the vessels used will be in proportion to the width of the channel to be opened or to be kept opened and in proportion to the resistance to be overcome, and said vessels are placed side by side at a suitable safety-distance apart throughout the width of the channel, and, where a series of such vessels are used one in advance of the other, they should be arranged so that each successive one in a lengthwise direction is intermediate with the vessels on either side of it, as shown in Fig. 1, so as to sweep the whole width of the channel or stream, as it were, and thus create the necessary wash throughout its width. Inasmuch as the vessels B are independent of each other, they can be transferred to any desirable place or port and put in motion, as required.

By the application of anchored steamships, as described, the natural current of the river or stream will be so increased as to wash out any bar that might form, and the same can be used to great advantage in the protec-

tion of jetties. The longer, too, the propellers of said anchored vessels are kept in motion the greater will be the force of the artificial current produced, by reason of said current gathering accumulated force. By the ease and rapidity with which these vessels could be transferred from port to port an entire coast might thus be protected from the formation of sand-banks or overflows by one and the same fleet, thus inducing great economy.

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

The herein-described means for increasing the current or outflow of rivers and other streams to prevent the formation of sand-bars and the overflow of the banks of rivers, consisting of a series of anchored steam-vessels arranged in parallel rows, with their heads in the same direction, and in alternation, as specified, and provided with propelling devices which are in practice kept in motion for accelerating the outflow of the stream, as set forth.

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Witnesses:
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