2 Sheets—Sheet 1.

D. M. CURRIE.

Permeable Dam, Dyke, &c.

No. 224,398. **Patented Feb. 10, 1880.**

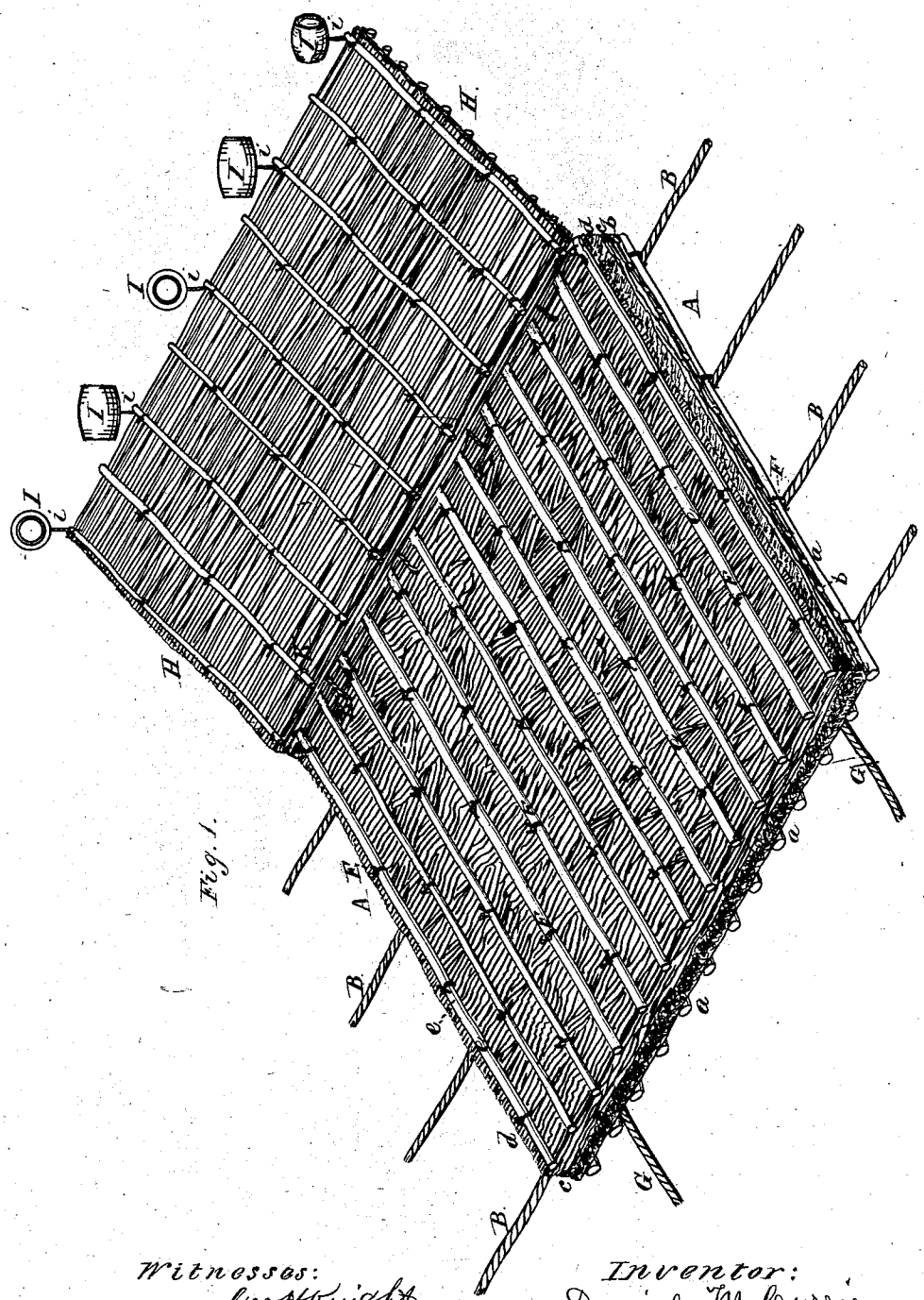


Fig. 1.

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2 Sheets—Sheet 2.

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Fig. 2.

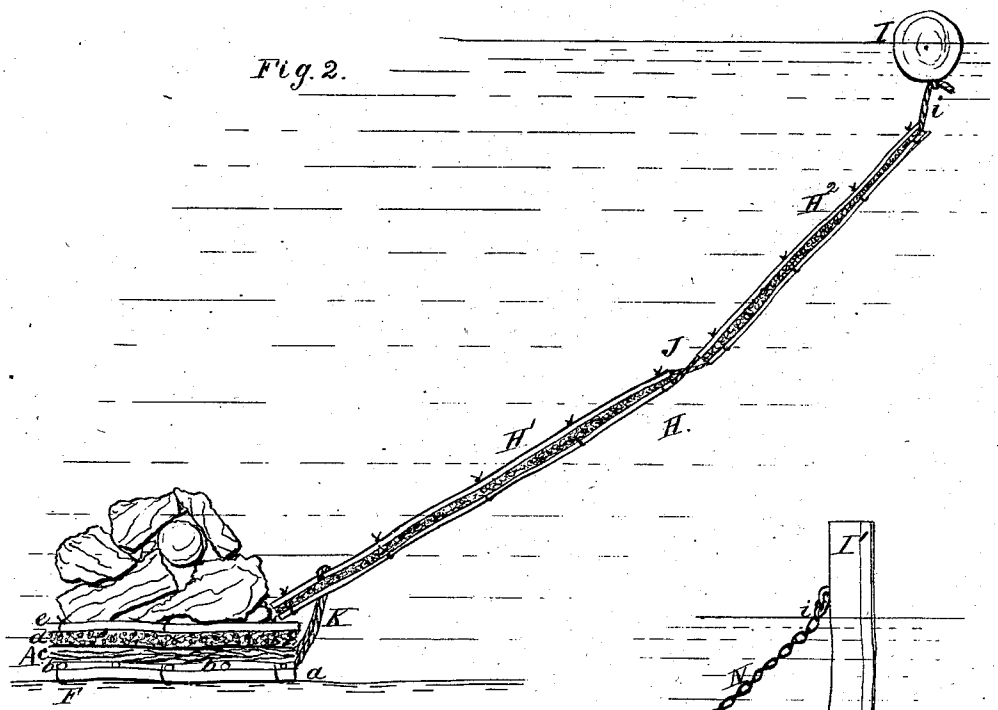


Fig. 3.

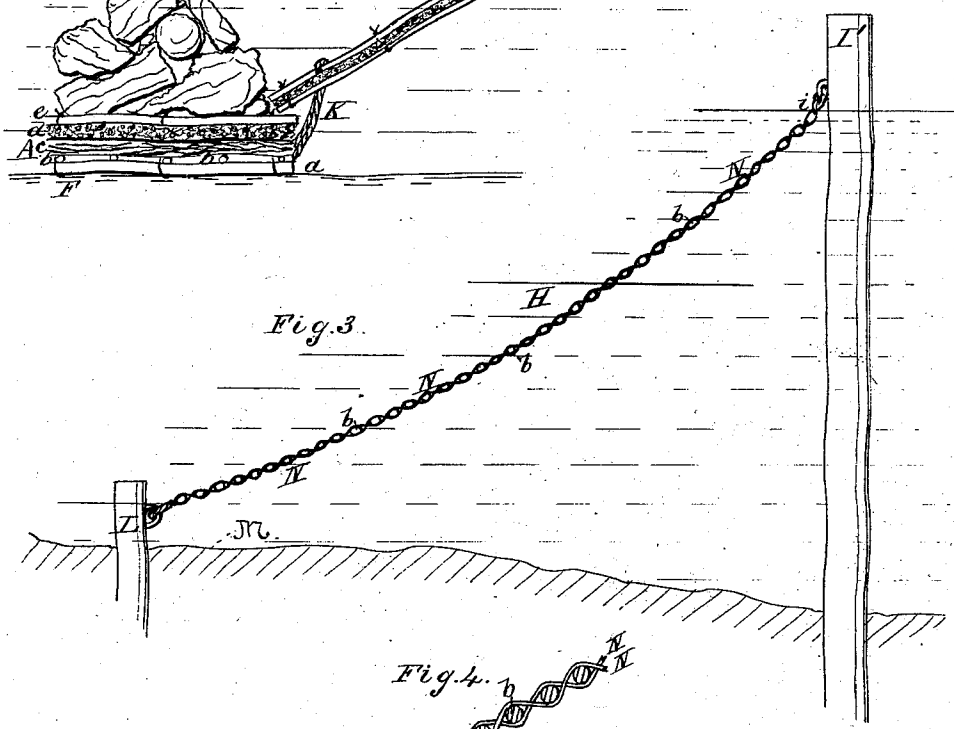


Fig. 4.

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UNITED STATES PATENT OFFICE.

DANIEL M. CURRIE, OF ST. LOUIS, MISSOURI.

PERMEABLE DAM, DYKE, &c.

SPECIFICATION forming part of Letters Patent No. 224,398, dated February 10, 1880.

Application filed December 9, 1879.

To all whom it may concern:

Be it known that I, DANIEL M. CURRIE, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Permeable Dams, Dykes, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

The first part of my improvement relates to an improved method of constructing permeable dams, dykes, training-walls, or other structures for the regulation, control, and improvement of silt or sediment bearing rivers; and it consists in attaching the vertical or inclined members of the permeable structure to the lower grillage of the horizontal mattress before such mattress is sunk, in any suitable manner and by any suitable means, such as cords, ropes, or wires, for the purpose of utilizing the mattress as an anchorage to the vertical or inclined member of the permeable dam, dyke, or other structure. The mattress being sunk, the free ends of the devices constituting the said member are supported by buoys, booms, or other means in an inclined or vertical position, so as to extend from the bottom upward to any suitable height.

Mattresses for anchorage purposes may be made of any suitable form of construction and of any convenient length. They may be built in place, floating or on ways, with ropes, wires, or other suitable materials stretched longitudinally in such number and at such spaces as may be necessary to give the mattress tenacity and strength sufficient to afford secure anchorage to the attached devices, and, furthermore, to increase the facility and security with which said mattress may be moved and sunk. The mattress may be attached to the lines, where such are used, by any suitable means. Lines may also be attached to the mattress transversely at such points as may be desired, and used in hauling the mattress into position.

The second (or inclined) mattress may itself be jointed so as to be flexible, and, if desired, capable of being folded upon the foundation-mattress until sunk, the purpose being the formation of a permeable screen, through which the current may pass in a divided state with reduced velocity, the spaces being so regulated as to cause the coarser material suspended in the current to be deposited under the screen, and so close to it that the screen may afterward be lowered to rest upon and protect the deposit from subsequent removal. The screen may be used singly or in combination, as may be necessary for the purpose described.

Figure 1 is a perspective view illustrating my invention. Figs. 2 and 3 are end views showing modifications. Fig. 4 is an enlarged section illustrating mattress H, as shown in Fig. 3.

A is the foundation or anchor mattress. This may be constructed in the manner shown, or in any other suitable manner. The mattress here shown is constructed of a lower series of transverse poles or rods, *a*, attached to the longitudinal ties B. The ties B may be of ropes made of any suitable material, such as hemp or iron wire; or they may consist of wire or other suitable material. As shown, above the poles *a* are laid longitudinal poles *b*, and above these two mats of brush, *c* and *d*, laid crosswise to each other, and above these a series of poles, *e*. The whole may be attached together in any suitable manner. I have shown tie cords or wires F passing through the mattress from the lower to the upper series of poles, *a* and *e*, respectively.

The mattress A is anchored down by stone or other suitable means. The mattress A may be held in position by the ropes or other ties B, and by transverse or oblique ropes, cables, or wires G, before it is fixed in position by the ballast, and these ropes may assist in keeping the mattress A in position even after the ballast has been placed upon it.

H is a mattress constructed in any suitable manner and attached by one edge to the anchor-mattress A, so that it (the mattress H) may admit of a vertical or horizontal or inclined position. I have shown it as inclined and its free edge sustained in the water by buoys or floats I, to which it is connected by cords or other ties *i*, made the required length to hold the mattress H in the desired position.

The mattress may be made practically inflexible, as shown in Fig. 1, or it may be jointed in one or more places, as shown in Fig. 2; or

it may be made flexible throughout its whole length, as shown in Fig. 3. It may be made to almost altogether check the passage of water through it; or it may be made to allow the passage of water through it with more or less freedom.

In Fig. 1 I have shown the inclined or vertical mattress H with courses of poles *a e* upon its sides and two courses of brush between. In Fig. 2 I have shown it made in sections H′ H², jointed together at J, so as to give to the mattress a certain degree of flexibility. In Fig. 2 the free end of the mattress H is sustained by a boom, I. In Figs. 1 and 2 the fixed mattress A and the movable one H are shown connected by ropes K.

In place of the foundation or fixed mattress other fixed objects may be used as an anchor for the mattress or screen H. For instance, one edge may be attached to piles L in the water-bed M, as shown in Fig. 3.

In Fig. 3 the mattress is shown as flexible throughout its length, being formed of slats, rods, or poles *b*, woven into a warp, N, formed of ropes, wires, or other longitudinal ties. In this figure the upper end of the mattress or screen H is shown connected to a pile, I′, in place of a float. The pile in this case is intended to represent any fixed object or objects proper for the purpose described.

I claim as my invention—

1. As an improvement in the construction of permeable dams, dykes, or similar structures, the foundation-mattress A, for anchoring the member composing such permeable structure, substantially as set forth.

2. The foundation-mattress A and vertical or inclined mattress H, having flexible connection with the foundation-mattress, substantially as and for the purpose set forth.

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Witnesses:

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