(No Model.) 2 Sheets—Sheet 1.

W. D. ARNETT.

DAM.

No. 422,901. Patented Mar. 11, 1890.

Fig. 1.

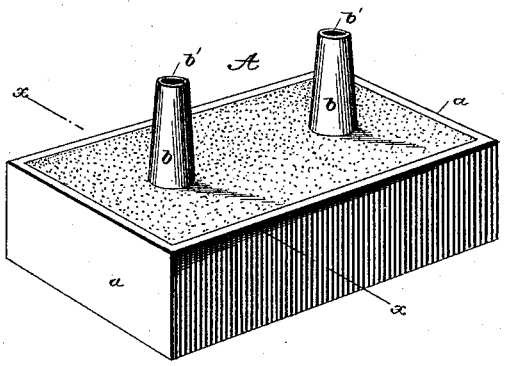


Fig. 2.
on line x—x

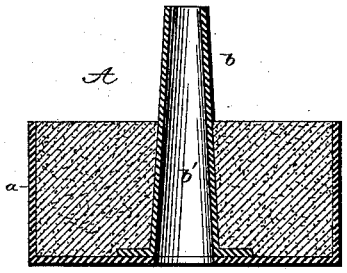
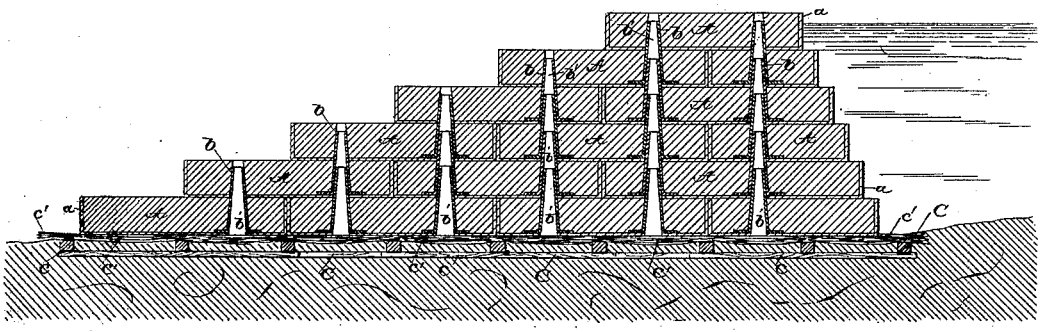


Fig. 3.



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(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

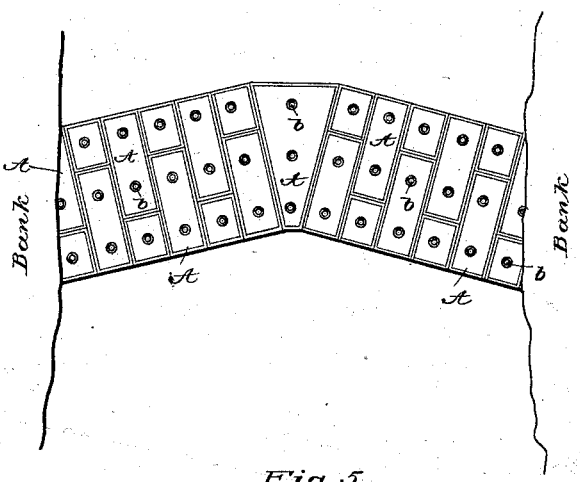


Fig. 7.

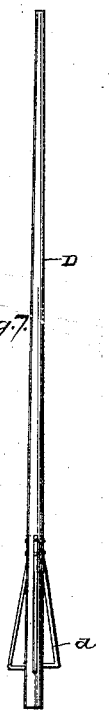


Fig. 5.

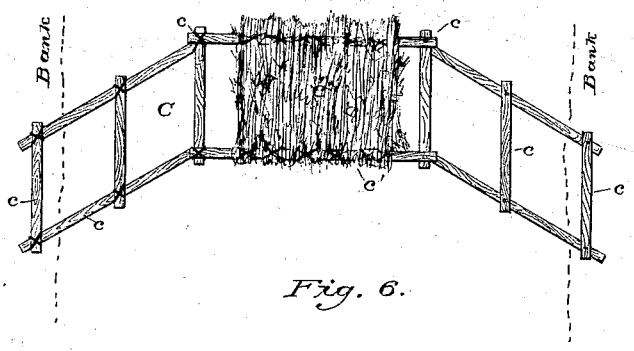
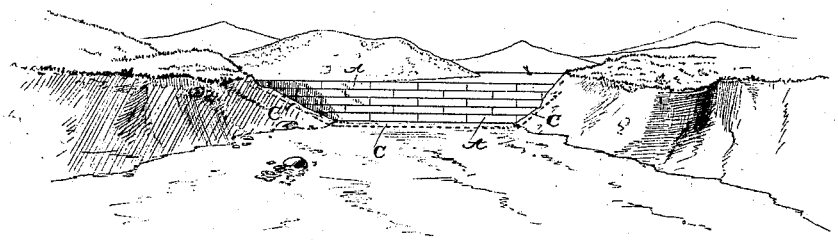


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM D. ARNETT, OF PARMA, IDAHO TERRITORY.

DAM.

SPECIFICATION forming part of Letters Patent No. 422,901, dated March 11, 1890.

Application filed July 12, 1889. Serial No. 317,343. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. ARNETT, of Parma, in the county of Ada and Territory of Idaho, have invented certain Improvements in Dams, of which the following is a specification.

My invention is directed to the construction of fixed dams in a cheap, rapid, and durable manner; and it consists, essentially, in a dam composed of a series of blocks or sections each provided with projections or dowels to enter the next and with holes passing vertically through the body and the dowels, each hole serving not only to receive the dowel of the next section, but also to receive vertical rods, by which the sections are guided in their descent to their proper positions.

In the accompanying drawings, Figure 1 is a perspective view of one of my plan sections or blocks. Fig. 2 is a vertical cross-section of the same on the line *x x*. Fig. 3 is a vertical cross-section of a dam constructed on my plan. Fig. 4 is a top plan view of the same. Fig. 5 is a plan view showing one method of forming the foundation. Fig. 6 is an elevation of the dam, looking upstream. Fig. 7 is a detail view of one of the guide-rods.

Referring to the drawings, A A represent a series of rigid blocks or sections, which may be of any desired form and dimensions, provided they are adapted to be held together in a compact body. I prefer to construct them, as shown, of an oblong rectangular form. Each section, as shown, consists of an external box or case *a*, solidly filled with gravel, stone, cement, or other suitable material. The sections may, however, be molded in solid form from cement, beton, or any of the well-known compounds employed in the production of artificial stone. Each section is provided with one or more dowels or projections *b*, rising from its upper surface, and with a vertical hole *b'*, extending upward through the body from the lower side and through the dowel. The only essential requirement in this connection is that the opening shall extend without interruption through the body of the block, and also through the dowel, and to this end the tubular dowel may be constructed and applied in any manner the equivalent of that shown. I prefer to construct the dowels, as shown, in the form of conical metal tubes flanged at the lower end, each of sufficient length to extend entirely through the body of the section in which it is secured, and also upward into or through one or more sections above. The introduction of the cement or other filling will usually be sufficient to secure the dowel in position with the requisite firmness. The dowels and openings are made of such size and form that when the sections are laid one upon another the dowels of each will enter the holes of the one next above. In constructing a dam with these sections I provide a suitable bed or foundation and sink the bottom course of sections thereon. Before or after placing the bottom course in position I introduce into their vertical openings the vertical rods or guides D, which terminate at or near the surface of the water. These rods serve as guides to enter the openings of the succeeding sections and direct them downward to the exact positions required, so that they will fit over the dowels of the preceding sections. I commonly construct these guides, as shown in Fig. 7, each with a series of spring-arms *d* to rest on top of the tubular dowels to sustain the guide in position. The spring-arms will yield and permit the guide to be withdrawn.

I prefer to carry my dam from the shore ends upstream, that it may the better resist the pressure of the water. When this is done, the central sections may be of tapered or wedge-like form, as shown in Fig. 4.

C represents the foundation. When the bottom is of sand or other soft material, I ordinarily construct a skeleton frame composed of timbers *c*, bolted or lashed together, and to this frame I lash or otherwise secure a matting *c'*, composed of brush or similar material. Owing to the open or skeleton-like character of the frame the mat is permitted to sink through and within the same under the weight of the mass above, so as to conform to and rest firmly upon the supporting-surface beneath. I am aware that a foundation composed of logs laid closely together upon the bottom and covered with matting is old. Under such construction, however, the matting was supported wholly by the tim-

bers and did not rest upon the surface beneath. The ends of this foundation will be seated against the shore, and they may be inclined, as shown in Fig. 6, to conform to the inclination of the banks.

Having thus described my invention, what I claim is—

1. The improved block or section for a dam, having the projections on one face and the openings extending through the body and the projections, as shown.

2. The section for a dam, consisting of the box or body, the filling therein, and the tubes extended through and beyond the filling, as shown.

3. In a dam, a series of sections, each having a vertical opening therethrough, and a tubular projection forming a continuation of said opening, the projections of each section being seated in the openings of the next.

4. In combination with the section having vertical holes and tubular projections, the guide-rod provided with yielding arms, whereby the assemblage of the blocks is permitted.

In testimony whereof I hereunto set my hand, this 27th day of May, 1889, in the presence of two attesting witnesses.

WILLIAM D. ARNETT.

Witnesses:
C. S. SCOTT,
ERNEST BOONE.