(No Model.)

W. D. ARNETT.

DAM.

No. 422,902. Patented Mar. 11, 1890.

Fig. 1. Fig. 2. Fig. 3 Fig. 4.

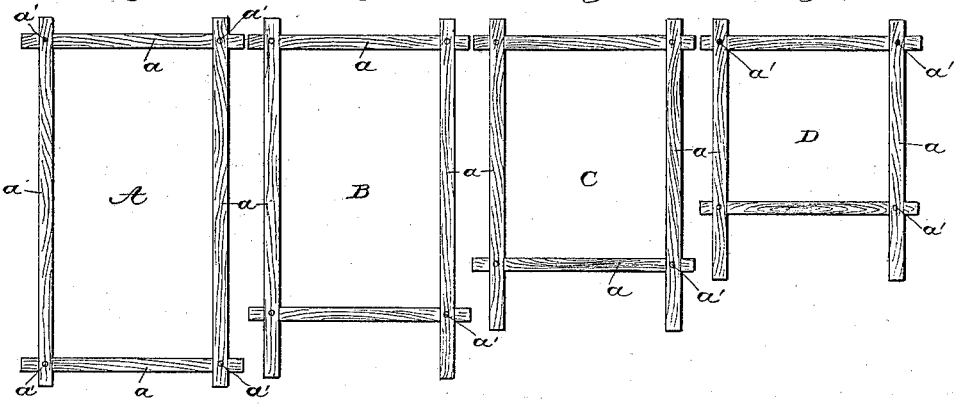


Fig. 5.

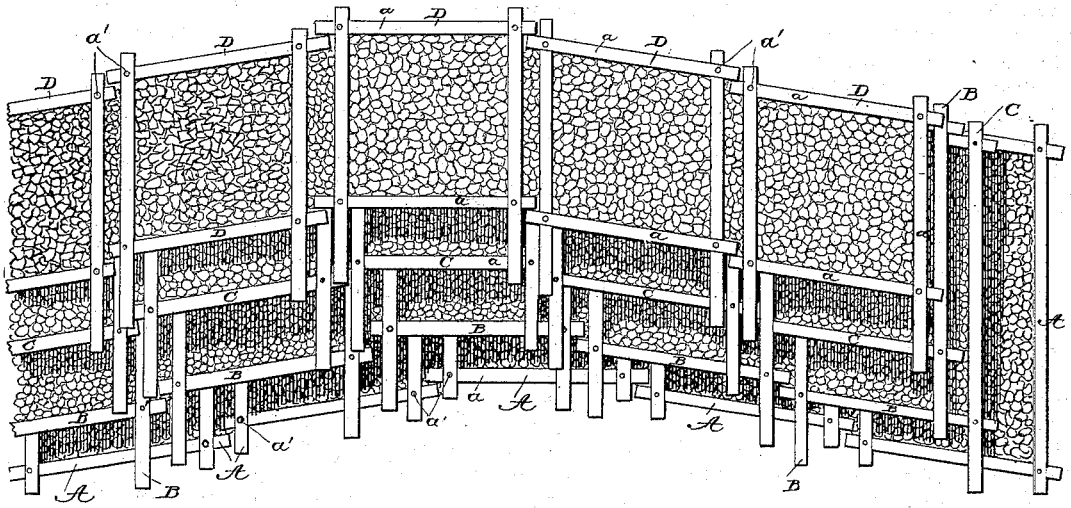
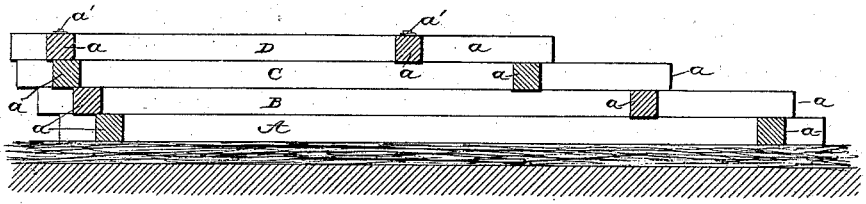


Fig. 6.



Witnesses:

W. W. Cartmell

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UNITED STATES PATENT OFFICE.

WILLIAM D. ARNETT, OF PARMA, IDAHO TERRITORY.

DAM.

SPECIFICATION forming part of Letters Patent No. 422,902, dated March 11, 1890.

Application filed September 26, 1889. Serial No. 325,120. (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.

The aim of this invention is to provide a simple, cheap, and durable dam for use principally in small creeks and in similar places where the demand will not justify the expensive constructions in ordinary use.

My dam consists, essentially, of a series of simple rectangular frames laid one upon another in courses and filled with rubble-stone, the frame in each course being shorter than those of the course below, and the frames of the several courses being laid in such manner as to lap or break joints.

In the accompanying drawings, Figures 1, 2, 3, and 4 are plan views showing a series of frames constructed on my plan for use in erecting a dam. Fig. 5 is a top plan view of the dam. Fig. 6 is a vertical cross-section of the same in the direction of the water-flow.

In proceeding to erect my dam I first provide a series of frames A B C D in any suitable number. Each of these frames consists simply of four logs or timbers *a*, arranged in the form of a rectangle with their ends lapped and secured together by fastening pins or bolts *a'*. The timbers may be of round or square form in cross-section, the latter being preferred, and they may be notched or halved together in order to give greater strength to the structure. The frames are alike in construction, but different in length, by which I mean in the direction in which the current flows over them.

In erecting the dam I first provide a suitable foundation, preferably of a mat-work of brush. On this foundation I lay side by side a course of the frames, A being the longest course, preferably arranging them as shown, so that their transverse timbers overlap or interlock at the ends, in order that they may assist in sustaining each other against the pressure of the water. On this first course I lay a course of the shorter frames B, on this a course of the still shorter frames C, and so on successively, laying any suitable number of courses, according to the height of the dam required. The frames of one course are preferably laid so as to break joints with those of the next course below. The structure thus erected I fill, either during the course of erection or thereafter, with rubble-stone or equivalent filling material. It is in effect a system of crib-work holding in position the stone, which in turn gives stability to the crib and prevents it from being moved out of position. The frames of the successive courses are laid up so as to present a substantially vertical wall on the upper side of the dam, but a succession of steps on the downstream side to break the force of the fall and prevent the undermining of the dam.

I am aware that square cribs have been erected and filled with stone to serve as piers of bridges, as shore abutments of dams, &c., and this I do not claim.

My invention consists in a dam composed of separate frames of different lengths laid up in courses and filled with stone, substantially as herein described.

Having thus described my invention, what I claim is—

1. A dam consisting of a series of rectangular frames of different lengths, each complete in itself, laid in courses and filled with stone, substantially as herein described.

2. A dam consisting of a series of frames A B C, &c., of different lengths laid in courses to break joints, each frame consisting of timbers united in rectangular form.

In testimony whereof I hereunto set my hand, this 16th day of July, 1889, in the presence of two attesting witnesses.

WILLIAM D. ARNETT.

Witnesses:
C. S. SCOTT,
R. W. OAKES.