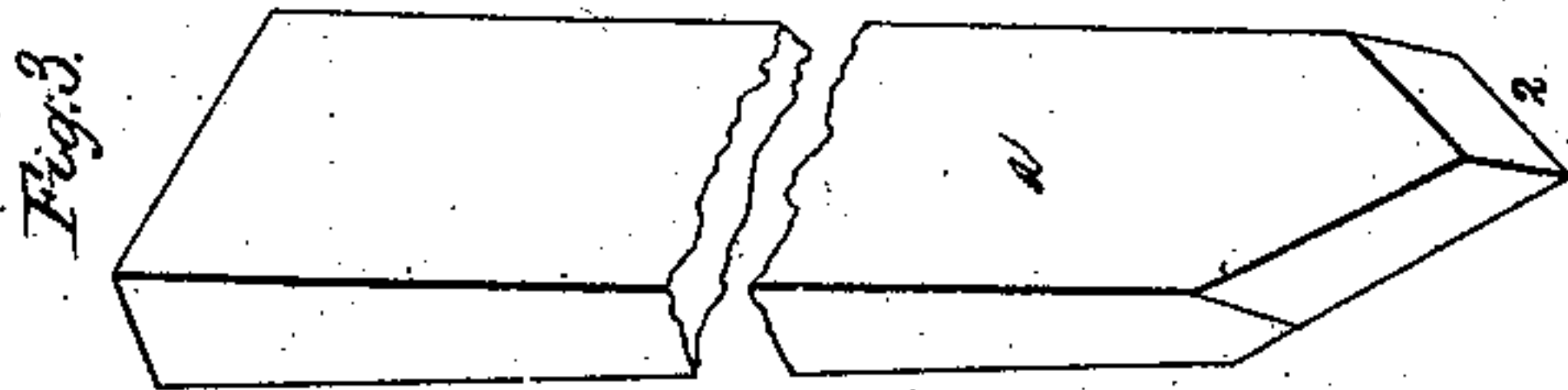
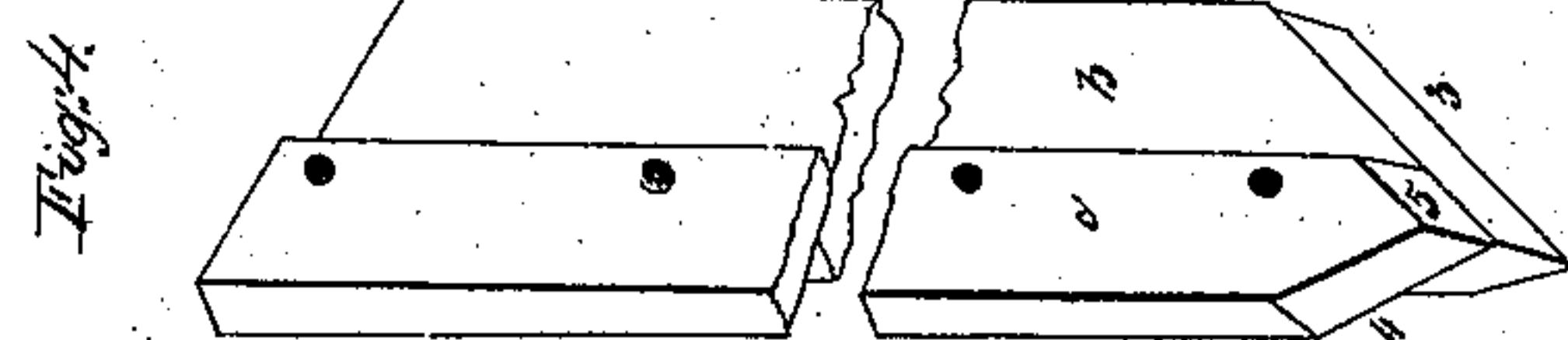
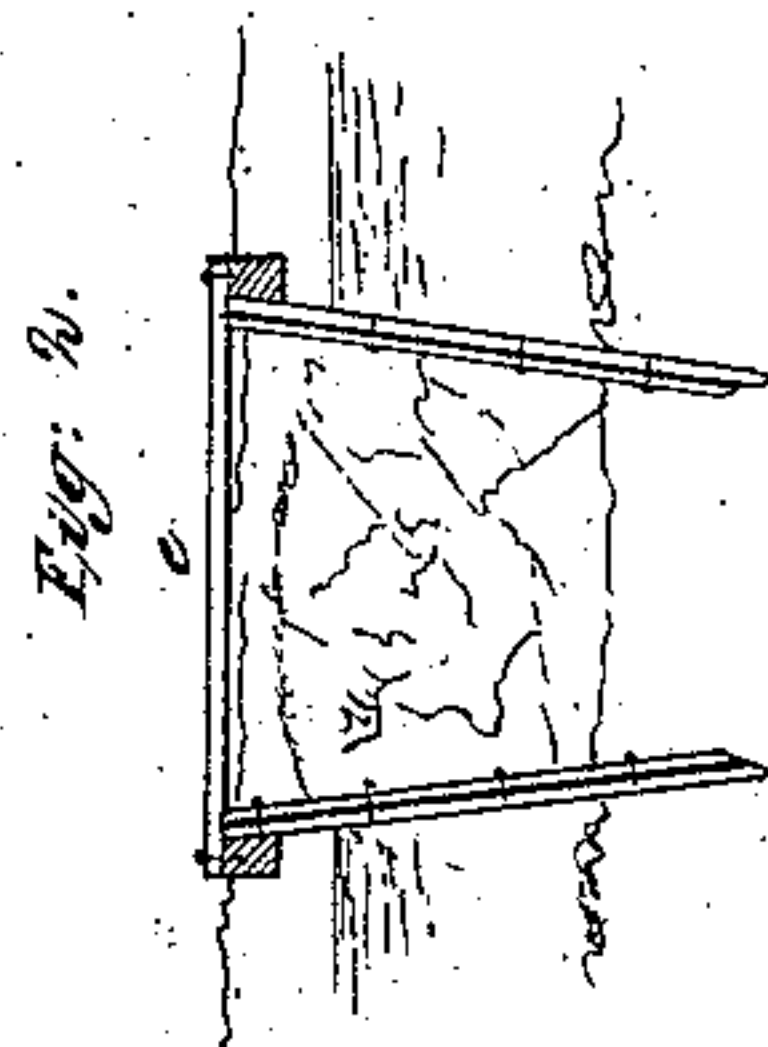
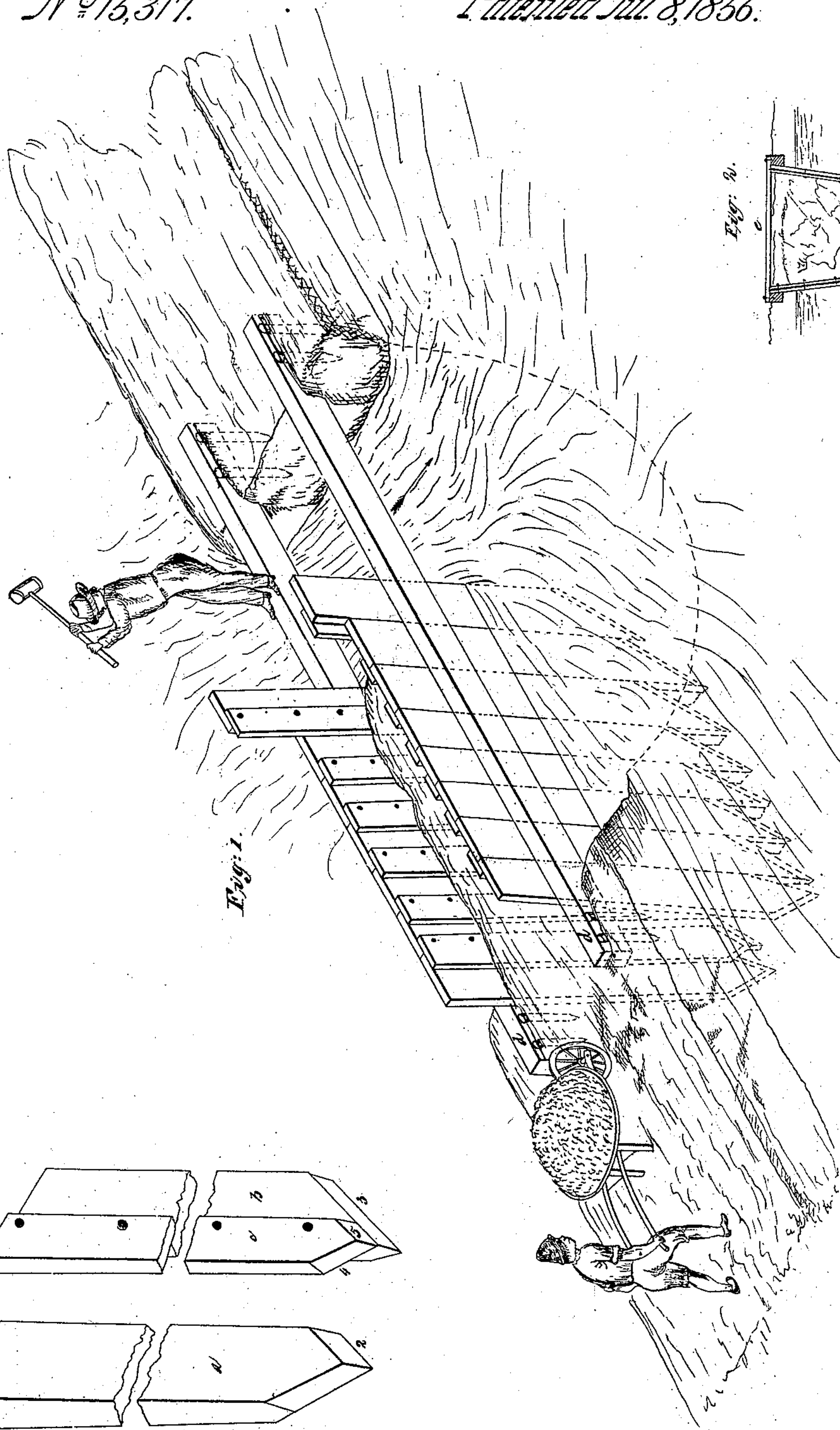


W.P. Craig

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UNITED STATES PATENT OFFICE.

WALDO P. CRAIG, OF NEWPORT, KENTUCKY, ASSIGNOR TO W. P. CRAIG AND W. R. RIGHTOR.

MODE OF CONSTRUCTING DAMS.

Specification of Letters Patent No. 15,317, dated July 8, 1856.

To all whom it may concern:

Be it known that I, WALDO P. CRAIG, of Newport, Campbell county, Kentucky, have invented a new and Improved Plan of Construction for Dams, &c.; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawings, making part of this specification.

The nature of my invention consists in a construction of piles by which the pressure of the water is made available to confine the entering pile to its proper bearing against that already inserted, and afterward to maintain the stability and tightness of the work.

During several years, engagements as a mill builder in the State of Arkansas, having had frequent occasion to erect dams, embankments, levees, &c., my experience fully verifies the well known fact that crevasses or breaks in the levees which line the margins of the low country rivers have seldom even at the expenditure of millions been effectually or permanently repaired.

Having had occasion to build a dam across a bayou about fifty feet wide and eleven feet deep, I proceeded in the usual manner by driving piling in a series of parallel ranks across the stream, taking every precaution to have the successive piles follow each other closely and in the same line, each pile being pointed alike—and the interstices well packed with earth, grass and brush; but the water would work through and soon widening the breaches thus begun washed the entire structure away. An examination of the relative positions of the points of the piles thus driven, developed the true cause of my failure. Each one although driven with the utmost precision had diverged from its neighbor at their respective points affording means for the water to cut out a passage; then it was that my necessities originated my water stopper as hereinafter described and which I tried forthwith with entire success with less than half the customary time and labor; and I believe that I can stop during a flood any break or crevasse or dam any stream of water of ordinary depth and possessing an alluvial bed.

In the accompanying drawings Figure 1 is a perspective view of a crevasse undergoing my process of repair. Fig. 2 is a trans-

verse section through a dam constructed on my plan. Fig. 3 represents a form of pile called by me a "beginner." Fig. 4 represents a form of pile which I style a "follower."

My mode of operation is as follows: Having ascertained the depth and extent of the crevasse or other gap to be closed, I procure to be sawn a sufficient number of planks or staves of from one to six feet greater length than the depth of the stream, and as wide as the timber will admit of. The edges of these planks are parallel but their thickness varies at their respective ends by a uniform taper so that a plank of ten feet length will at its butt end have a thickness of about three inches, its thin end being less than an inch and a half. The thickness of other lengths of plank will be in proportion. I then give two of these planks a shape like that represented at (a), that is I point the plank at its thin end by two equal slants (1) (2) equally beveled as represented, on each side of the plank. These planks thus prepared I call "beginners" because two of them constitute the piles with which the work is commenced. Other piles which I style "followers" contain more particularly the distinguishing features of novelty both as respects their form and the mode of application of them to the "beginners" and to each other. The "followers" (b) are formed from the same kind of planks in manner as follows: The follower is also pointed at the thin end, but the slant (3) is wholly toward one edge. This slanting edge is beveled on both sides like those of the beginner. Along one side and projecting beyond its pointed edge there is fastened a batten (c) tapered and pointed similarly to the beginner, but having the slants (4) (5) beveled only on the outer side as represented. Having prepared a sufficient number of these followers, half of them being pointed toward the right and the other half toward the left; I stretch across the gap or crevasse two beams (d) about six feet apart, and having secured their ends to the respective banks, I commence driving a "beginner" close to the edge of the stream, and with one side closely bearing against its respective beam, and having driven this to the proper depth, I place a follower so as to bring its battened edge in close juxtaposition with the front edge of the beginner and

so holding it truly to said bearings—drive it down. A moment's inspection will make evident that the peculiar pointing toward one edge of the follower plank and beveling toward one side of its batten, will cause the rabbit formed by the plank edge and batten to closely hug the edge of the beginner, and a thorough test enables me to state that these parts do hug each other so closely, as to effectually arrest the current as the work advances, the pressure of the water itself conducing to the completeness of the joint. The first follower having been driven home, another is applied to its salient edge and then a third and so forth until the range is completed. When three or four followers have been thus inserted on the ebb side of the dam another workman is employed to insert a similar series on the flood side, the work on the ebb side being still continued, so as to keep it somewhat in advance of the other. When about half a dozen piles have thus been secured on each side, a third person is employed to fill with earth the space thus inclosed, and in this manner the three work on together until the job is completed. Cross ties or binders (e) stretching from beam to beam are applied at discretion.

In the experiment which I have above recited the sustaining beams were placed partly under water, but their relative elevation may be varied to suit circumstances. Where the gap is wider than the length of the beams, I halve the projecting or salient

end of the ebb beam and having driven in a stout pile to sustain it and another one the length of a beam in advance, a second beam halved to match the first is secured to it at one end, and the other end being swung out bears against the second pile or the salient end of the beam may be supported temporarily by a cable extending up stream and obliquely in shore and attached to the opposite beam. The corresponding new beam on the flood side—being similarly halved is secured to the salient end of the first beam on that side—after which binders are attached from beam to beam.

I claim as new and of my invention—

The construction and application substantially as herein described of the "follower piles," each pile being formed from a plank having tapering sides and parallel edges, with a slanting termination at the thin end running to one edge, and chamfered on each side of the slant, and with the described batten (or its equivalent) pointed from both edges and chamfered from its outer side, one edge of the batten projecting beyond the longer edge of the pile so as to form a rabbit fitting and overlapping the edge of the preceding pile for the purposes explained.

In testimony whereof, I hereunto set my hand before two subscribing witnesses.

W. P. CRAIG.

Witnesses:

GEO. H. KNIGHT,
JAS. H. GRIDLY.