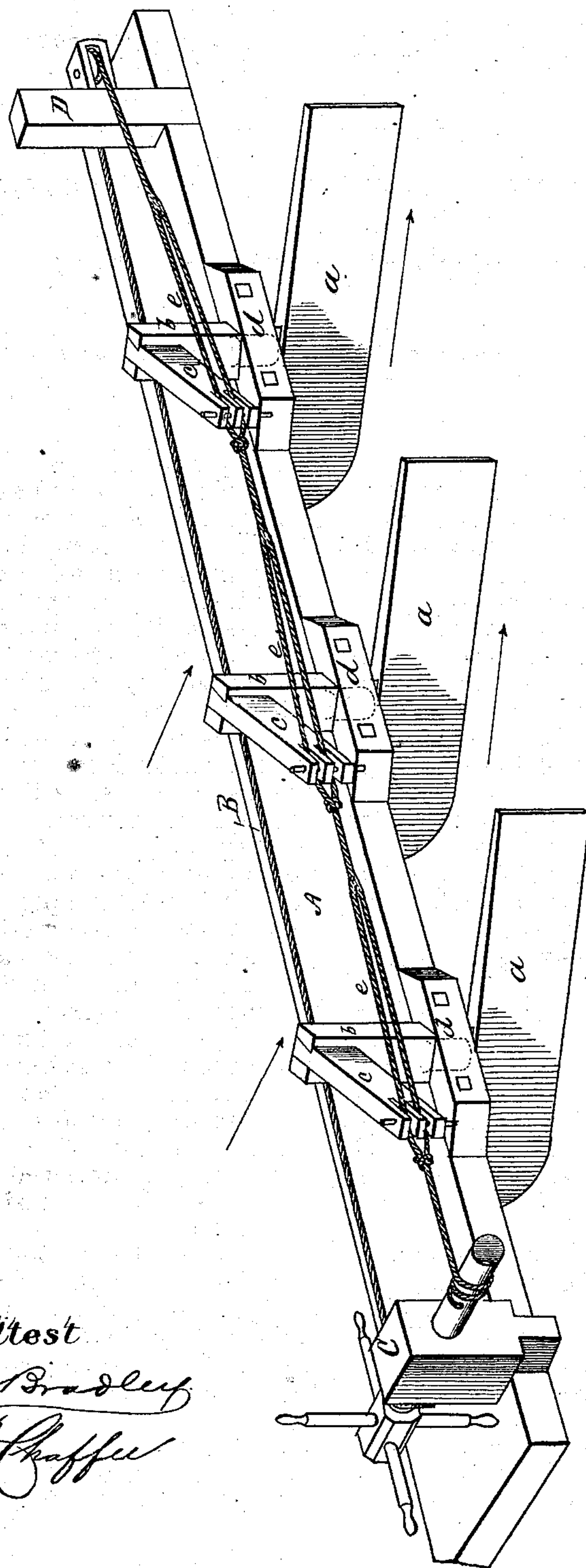


W. C. CULBERTSON.
Sheer-Booms.

No. 158,917.

Patented Jan. 19, 1875.



Attest
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UNITED STATES PATENT OFFICE

WILLIAM C. CULBERTSON, OF GIRARD, PENNSYLVANIA.

IMPROVEMENT IN SHEER-BOOMS.

Specification forming part of Letters Patent No. **158,917**, dated January 19, 1875; application filed December 16, 1874.

To all whom it may concern:

Be it known that I, WILLIAM C. CULBERTSON, of Girard, in the county of Erie, in the State of Pennsylvania, have invented certain new and useful Improvements in Sheer-Booms, of which the following is a specification:

The object of my invention is to so control the operation of the rudders of a sheer-boom as to make their action automatic in allowing the passage of an obstruction, and in regaining their normal position. The invention consists in securing the tillers of the rudders in loops in the operating chain or cord, so that when an obstruction strikes the rudder the latter will yield sufficiently to allow such obstruction to pass, and after it has gone by the action of the current on the rudder will move it back to its normal position.

In the accompanying drawing the boom is shown in perspective.

A represents the raft, to which are secured a number of rudders, *a*, whose posts *b* turn in bearings *d*, and are provided with tillers *c*. The rudder-blades may be of any desired construction; but I prefer to make their inner ends rounded, and extend considerably back of the posts. I also prefer to secure the blades to the posts by a dovetail joint, and to secure the posts in removable bearings, so that the several parts may be readily unshipped. B is the operating or rudder-controlling cord or chain. One end is secured to a windlass, C, passes thence through a pulley, D, at the other end of the boom, and back to the windlass. A number of loops, *e*, corresponding in number with the rudders, are formed on the cord B, and in these loops the tillers are secured at their outer ends. I have shown slots in the tiller ends, in which the cords of

the loop are held by a pin passed through the said ends; but, of course, any other suitable method may be employed which will allow of the tiller being readily detached from the loop.

My sheer-boom being thus constructed, its operation is as follows: The boom being properly fastened to the shore, its rudders are set at the proper angle for the action of the current by the line B. As is well known, when logs are running, there is a great deal of drift matter carried down the stream, and this often seriously interferes with the booms. Now, when such matter strikes the rudders in my booms, its weight throws the rudders around, the loops *e* allowing the tillers to move in the proper direction, and thus the débris may pass, and when escaped the force of the current carries the rudders back to their normal position. Such débris may lodge against only one of the rudders, but the latter's action will not affect the others.

It will be observed that any of the rudders may be readily unshipped without disturbing the others, and, too, that their action is much more easily controlled by extending their blades under the raft.

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

In a sheer-boom, the rudders thereof secured to or controlled by an operating-cord in such manner that they will move to allow the passage of an obstruction, and then resume their normal position, substantially as herein shown and described.

W. C. CULBERTSON.

Witnesses:

GEO. S. GULLIFORD,
WEBB W. RANDALL.