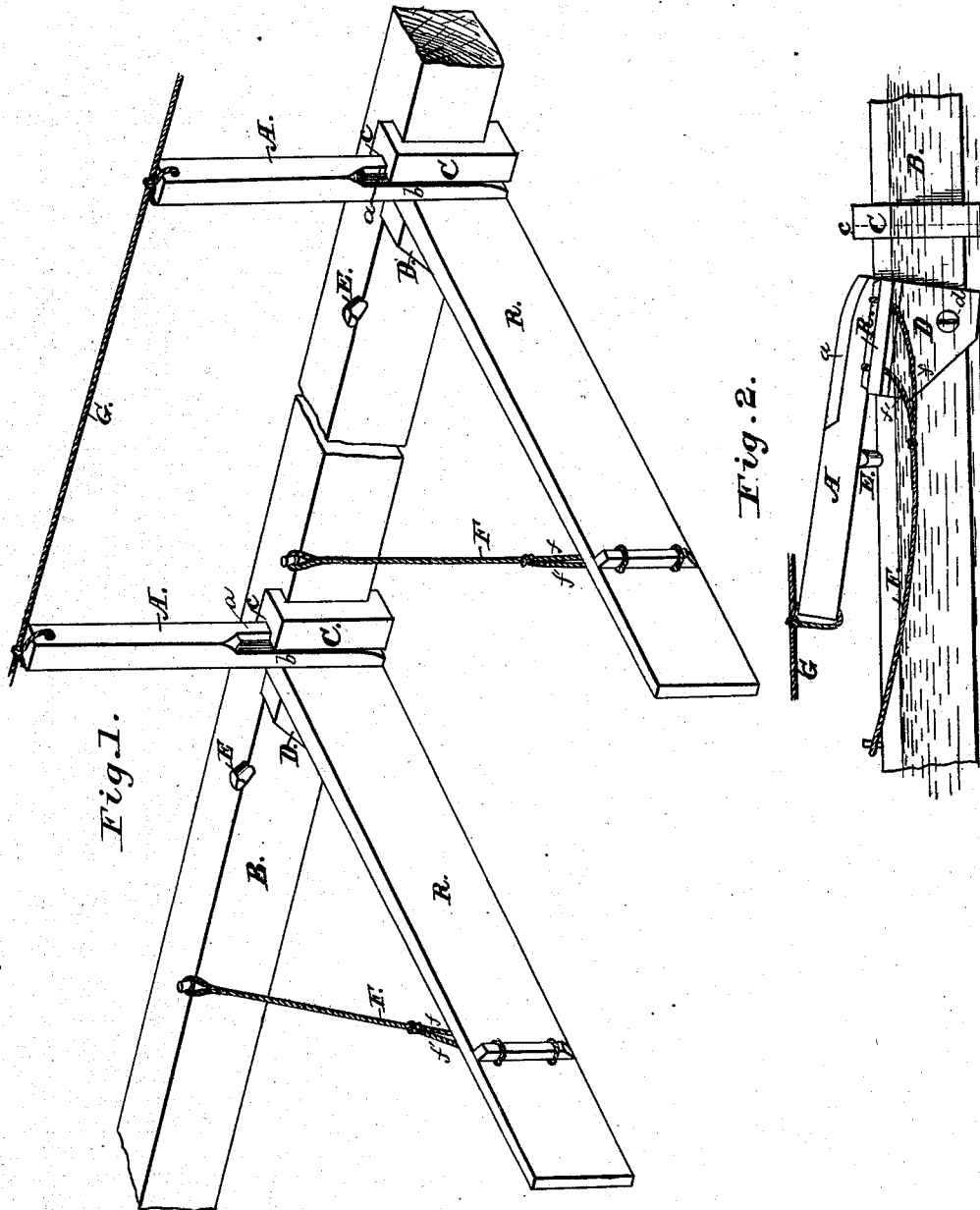


W. C. CULBERTSON.
Sheer-Boom.

No. 163,002.

Patented May 11, 1875.



Attest:
A. C. Bradley
M. B. Parson

Inventor.
Wm C. Culbertson
 by *Wm A. Finckel*
 his atty.

UNITED STATES PATENT OFFICE.

WILLIAM C. CULBERTSON, OF GIRARD, PENNSYLVANIA.

IMPROVEMENT IN SHEER-BOOMS.

Specification forming part of Letters Patent No. **163,002**, dated May 11, 1875; application filed March 16, 1875.

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 invention relates to a sheer-boom, the rudders whereof are secured directly to the raft or boom proper by pins on which they are turned from a vertical into a nearly horizontal plane, for the purpose of operating the said boom; and the invention consists in an operating cord and windlass, hold-backs, and stops, arranged as hereinafter set forth, and combined with the rudders and raft as specified.

In the drawings illustrating my invention, Figure 1 is a perspective view of a part of a raft or boom with two of the rudders in position for holding the boom in the stream. Fig. 2 is a front elevation thereof, with rudder in position out of the water, or so that the boom may swing down stream to allow the passage of a boat or raft.

The letter B may represent a raft or boom proper of any required size, and having any number of rudders, R, secured thereto. These rudders are made with a flange, D, at right angles to their face and at their inner ends, and by means of said flange they are secured on pins *d* to the boom. The pins *d* may be large bolts, or other equivalent means, that will allow of the turning or partial rotation of the rudders on them, and are fixed near the bottom of the boom, so as to pass through the flanges near their lower edge. Rudder-posts A are provided, and to these a cord, G, is secured, so as to connect the several posts; and this cord, chain, or line passes from a windlass at one end of the boom to the several rudder-posts; thence, through a pulley at the other end of the boom, back to said windlass. A cord, F, extends from the boom to near the outer end of each rudder, and is there secured by a loop, *f f'*, one end *f'* of said loop being secured near the top, and the other *f* near the bottom, of said rudder. C is a stop-block, having a groove, *c*, made longitudinally therein, attached to the boom at one side of the rudder; and E is a stop-pin set on the

boom in a line with the rudder-posts, on the other side the rudders. The rudder-posts are made with a rib, *a*, that fits in the groove *c* of the stop-blocks, and the edge *b* of said posts abuts against the blocks C, whereby a firm support is afforded the rudders against pressure and strain at that point, and their outer ends are strengthened by the hold-backs F. As shown in Fig. 1, the rudders are in position to be acted upon by the current; and when it is desired to have the boom go down stream, so that a boat or other thing may pass, the cords C are drawn in until the rudders assume the position shown in Fig. 2, when the current can no longer affect them. In this position the blades or rudders are at an angle sufficient to keep the raft afloat, and they are held there by their posts, resting on the stops E, which prevent their further descent, and by the cord G, which keeps them from turning up. By reversing the windlass the rudders are brought back into their vertical place, and the boom will again assume its position in the stream.

It will be understood that the blocks C keep the rudders from turning too far in the opposite direction.

In turning the rudders, the cords *f f'* of the loops on the hold-backs F serve to steady and sustain the rudders and render the operation easy.

It will be understood from this that in the operation of the rudders nothing is left to the force of the current, or to the peculiar construction of the rudders themselves, but the whole action is controlled by mechanical means, thus insuring better results.

I am aware that it is not new to provide sheer-booms with rudders adapted to turn or rotate on their longitudinal axes, and I do not desire to claim this broadly as my invention; but

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

1. In a sheer-boom the rudders thereof, adapted to turn on their longitudinal axes, in combination with their operating cords and windlass, and back-stops C, substantially in the manner and for the purpose described.

2. In a sheer-boom the rudders thereof, adapted to rotate on their longitudinal axes so as to present a horizontal or vertical surface in the water, in combination with the stops C and E, and hold-backs F, substantially as described.

To the above specification of my invention

I have signed my name this 6th day of March, 1875.

WM. C. CULBERTSON.

Witnesses:

J. H. NICHOLS,

R. S. BATTLES.