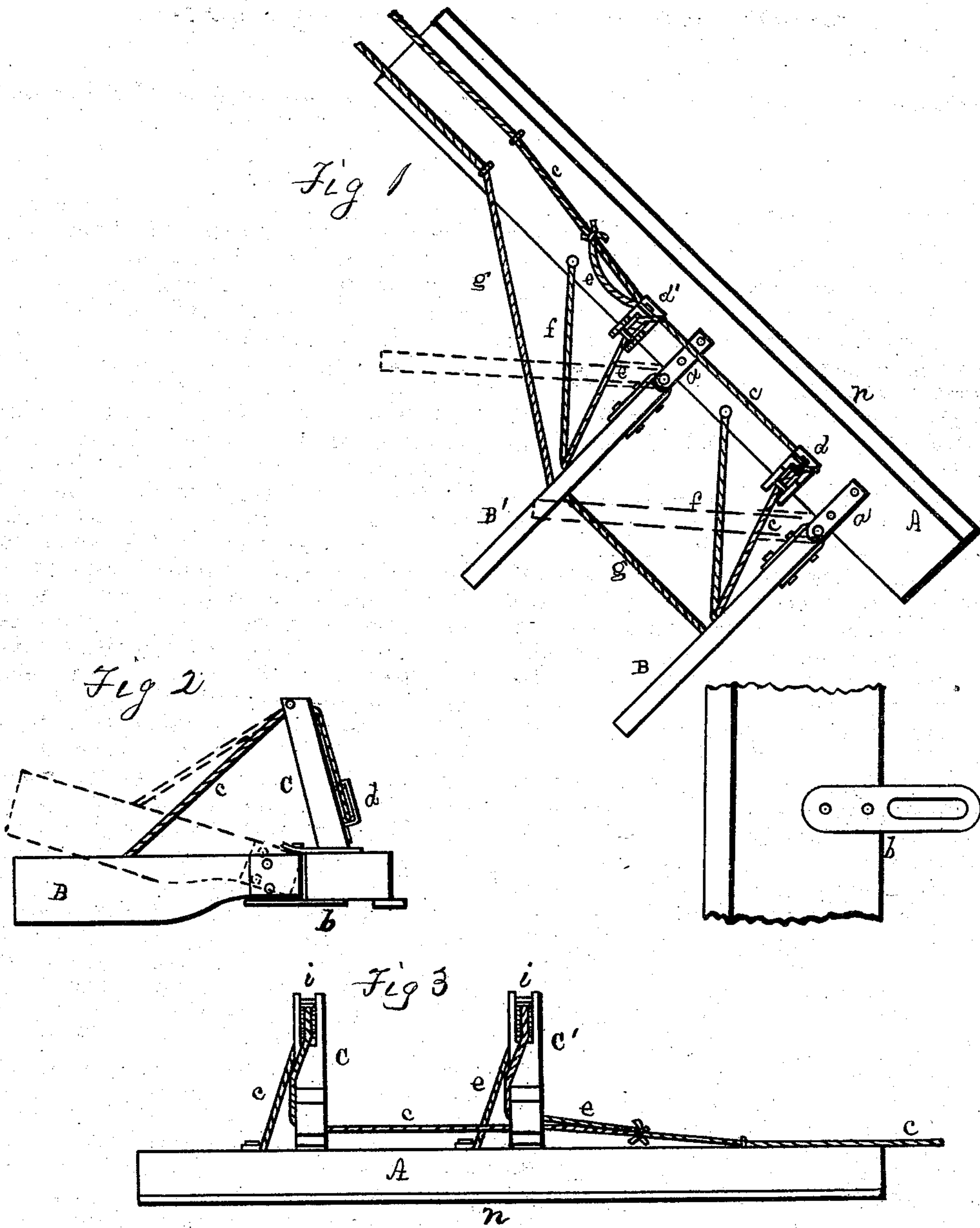


L. W. POND.

Sheer-Rudders for Booms.

No. 155,545.

Patented Sept. 29, 1874.



Witnesses
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IMPROVEMENT IN SHEER-RUDDERS FOR BOOMS.

Specification forming part of Letters Patent No. 155,545, dated September 29, 1874; application filed July 13, 1874.

To all whom it may concern:

Be it known that I, LEVI W. POND, of Eau Claire, Eau Claire county, Wisconsin, have invented new and useful Improvements in Sheer-Rudder Booms, of which the following is a full description, reference being had to the accompanying drawings.

Figure 1 is a plan view; Fig. 2, an end view; Fig. 3, a side elevation; Fig. 4, a bottom view of the slatted plate forming part of the hinge.

The chief object of this invention is to so construct a sheer-rudder boom, that the boom can be more rapidly operated than those now in use, which is desirable when it is necessary to open and close the boom frequently; and this I accomplish by so connecting the rudders to the boom and so arranging the operating devices that the rudders can be elevated out of the water and then swung to the desired position, and again dropped into the stream.

In the drawings, A represents one section of the boom proper, which is to be secured at its upper end to a post or pier as usual. B B' are two rudders; *a b*, straps secured to A. *b* has a long slot in it, (see Fig. 4,) and it extends out some distance from the boom A. The rudders are hinged to these straps by means of a bolt or rod properly connected with the rudder, the bolt passing through a hole in *a*, and its lower end passing through the slot and being free to move therein. C C' are short posts properly secured to A. At the top of each post is a pulley, *i*, and on the side of each post and near the bottom is another pulley, *d*. There are as many posts as rudders, and each post is located near the heel of a rudder. *c* is a rope secured to one of the rudders B. This rope passes over the pulley in the top of the post C, thence over the pulley *d* at the bottom of the post, thence to the upper end of the boom. *e* is a rope secured to the rudder B'. This rope passes over the two pulleys in the other post C', and is then secured to the rope *c*, so that both rudders can be elevated by the operator standing at the upper end of the boom through the rope *c*. *ff* are chains or ropes secured to the rudders and to the boom, as shown, to limit the movement of the rudders down stream.

These ropes *ff* are to be so connected that when tight the rudders will stand at about right angles with the boom, the best position for throwing the boom across the stream. *g* is another rope fastened to both or all the rudders on the boom, or on some one section thereof, and extending to the upper end of the boom.

In use, when the rudders are in the position shown, the boom will be closed or thrown across the stream, as shown in Fig. 1. If it be necessary to open the boom for the passage of boats, or for other reason, it can be done by lifting the rudders out of the water, as seen in dotted lines, Fig. 2, which can be done by means of the rope *c*; then by means of the rope *g* the rudders, while out of the water, can be drawn around toward the upper end of the boom, to the position indicated by dotted line in Fig. 1; then by releasing the rope *c* the rudders will fall into the water, and the action of the current both on the boom A and on the rudders will bring the boom rapidly to the shore. To close the boom, release the rope *g*, and the action of the current will quickly bring the rudders into the position shown in Fig. 1, and the boom will be thrown across the stream.

Heretofore the rudders of booms have been operated without removing them from the water, and booms have been opened by releasing the rudders and allowing them to swing around with the current toward the lower end of the boom. Then to close the boom, it has been necessary to draw the rudders back to the position shown in Fig. 1, against the current.

By using the present device the boom can not only be operated more easily and rapidly than by the old way, but the boom can be brought nearer to the shore, by the direct action of the current on the rudders, when in the position shown by dotted lines in Fig. 1.

The boom can be made in one or more sections, each section being provided with a set of rudders, standards, pulleys, and ropes, independent of the other sections, so that if desired, one or more of the lower sections can be operated, the others remaining unmoved. The ropes *c* and *g* can each be operated by means of a windlass, or in any other suitable manner.

A strip, *n*, may be placed upon the under side of the boom, projecting therefrom to prevent any logs from passing under the boom.

I find from actual use that it is best not to have more than two sections in the boom.

The rope *g* can be omitted, and then the boom will open by the action of the current on *A* alone when the rudders have been lifted out of the water, and will be closed when the rudders are allowed again to enter the water; but by the use of *g* the boom can be more completely and more rapidly opened, as before described.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. The combination of the boom *A* and rudders *B B'*, the latter being hinged to the former, so that the rudders can be elevated, substantially as and for the purposes specified.

2. The rudders *B B'* hinged to the boom *A* by a joint allowing the rudders to be elevated, in combination with the standards *C C'*, rope *c*, and pulleys *d i*, substantially as and for the purpose specified.

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Witnesses:

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