

J. Busser, Vibrating Propeller

N^o 76,711.

Patented Apr. 14, 1868.

Fig. 1.

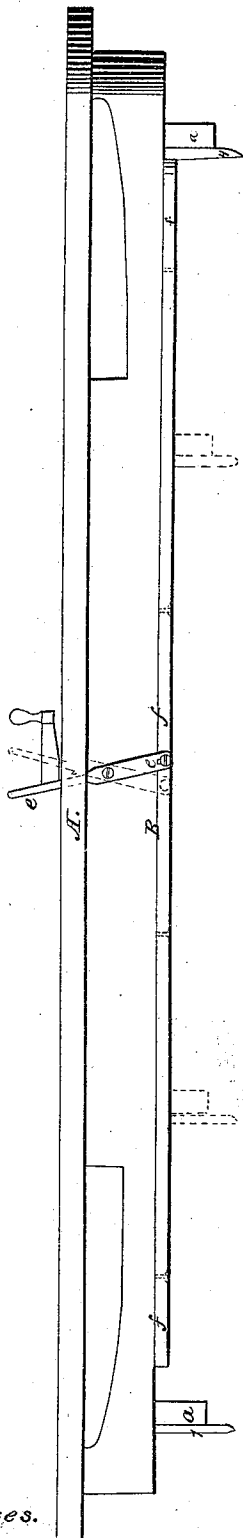


Fig. 2.

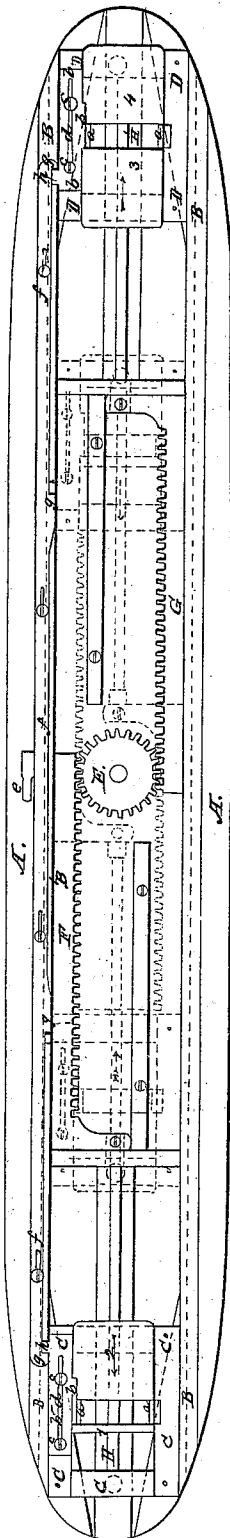
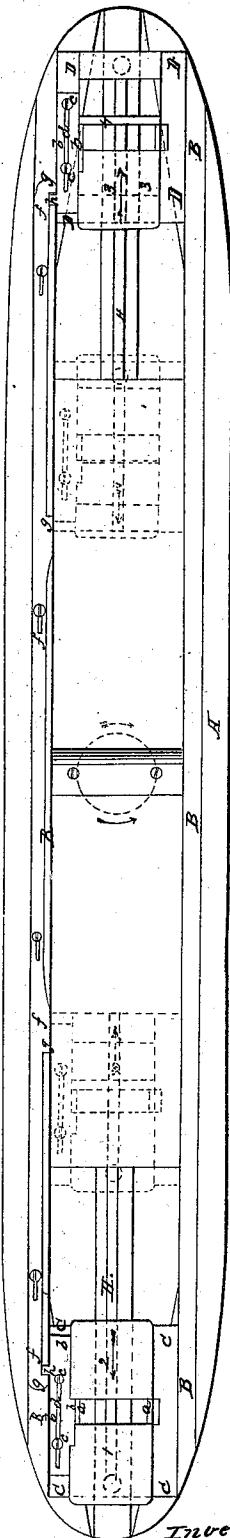


Fig. 3.



Witnesses.

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JACOB BUSSER, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 76,711, dated April 14, 1868.

IMPROVEMENT IN SHIFTING-BUCKET PROPELLERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JACOB BUSSER, of the city of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in the Manner of Arranging Shifting-Bucket Propellers on canal and other boats; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a side view of a boat with the propeller connected thereto or therewith.

Figure 2 represents a view of the bottom of the boat, having a portion thereof removed to show a means of giving motion to the propellers, and also showing the arrangement of the propellers on the bottom of or underneath the boat.

Figure 3 represents a view of the propellers as arranged underneath the boat, and showing, as is also shown in fig. 2, the moving parts in two different positions, by black and by red lines.

Similar letters of reference, where they occur in the separate figures, denote like parts in all of the drawings.

Letters Patent of the United States were granted to me on the second day of July, 1867, for an improvement in shifting-bucket propellers, substantially such as shown in the accompanying drawings, but arranged as side propellers.

The object of my present invention is to arrange this style of propeller on the bottom of or underneath the boat, so as to apply it to the propulsion of canal or other similar boats.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

On the bottom of the boat A are arranged guards B B, which form ways or guides, in which the two frames, C D, one at or near each end of the boat, may be moved by gear, E, working in the racks F G, connected, respectively, with the frames C D, or by any other well-known mechanism driven by power that will reciprocate said frames.

In each of the sliding or reciprocating frames are hung, respectively, the floats or buckets 1 2 and 3 4, so that when not otherwise controlled, they will drop into a vertical, or nearly so, position, and be suspended on their journals; and attached to each frame, so as to move with them, are supports *a a*, that brace the buckets or floats when propelling, but allow them to float up and out of action when returning for the next propelling-action. There is also upon each frame a tripper, *b*, hung thereto by screws *c c*, passing through the slots *d*, by which one set of buckets may be thrown out of and the other set into action at pleasure, for changing the moving direction of the boat either forward or backward, or, as it may be termed, "either end foremost," which is accomplished by a shifting-lever, *e*, which works the shifting-bar *f*, and which bar, by means of its notches or shoulders *g*, and the projections *h* on the tripper, moves the latter, and throws the set of floats that were previously in action up out of action, and allows the other set to drop down into a propelling position. The floats 1 in fig. 2, and 4 in fig. 3, are represented as in their propelling position, and the others as inactive, whilst by the red lines in the same figures the floats 3 2 are propelling, and the others passive or inactive.

The frames C D, which carry the floats or buckets, may be connected to their respective racks, F G, by rods H H, and they approach and recede from each other by simultaneous movements, but one bucket in each always propelling, or rather the boat is constantly propelled, first by the bucket in one frame, and then by a bucket in the other frame, and when its motion is to be reversed, the lever *e* is shifted, which brings into action another pair of buckets, which alternately propel the boat, the pair just thrown out of action not in anywise interfering with them.

This simultaneous approaching and receding, or to-and-fro motion of the frames and buckets, may be procured in many ways, and I do not confine my invention to any special device for operating them, so long as they are reciprocated in pairs, or by mates or fellows, as herein shown.

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

The arrangement of the frames carrying the shifting-buckets upon the bottom of or underneath the boat, so that both series of buckets shall work in the same plane, and guarded, guided, and shifted for changing the direction of the boat by devices substantially such as set forth and described.

JACOB BUSSER.

Witnesses:

ISAAC GERHART,

EDWARD H. WEIL.