

G. R. PIERCE.

Improvement in Propellers.

No. 124,009.

Patented Feb. 27, 1872.

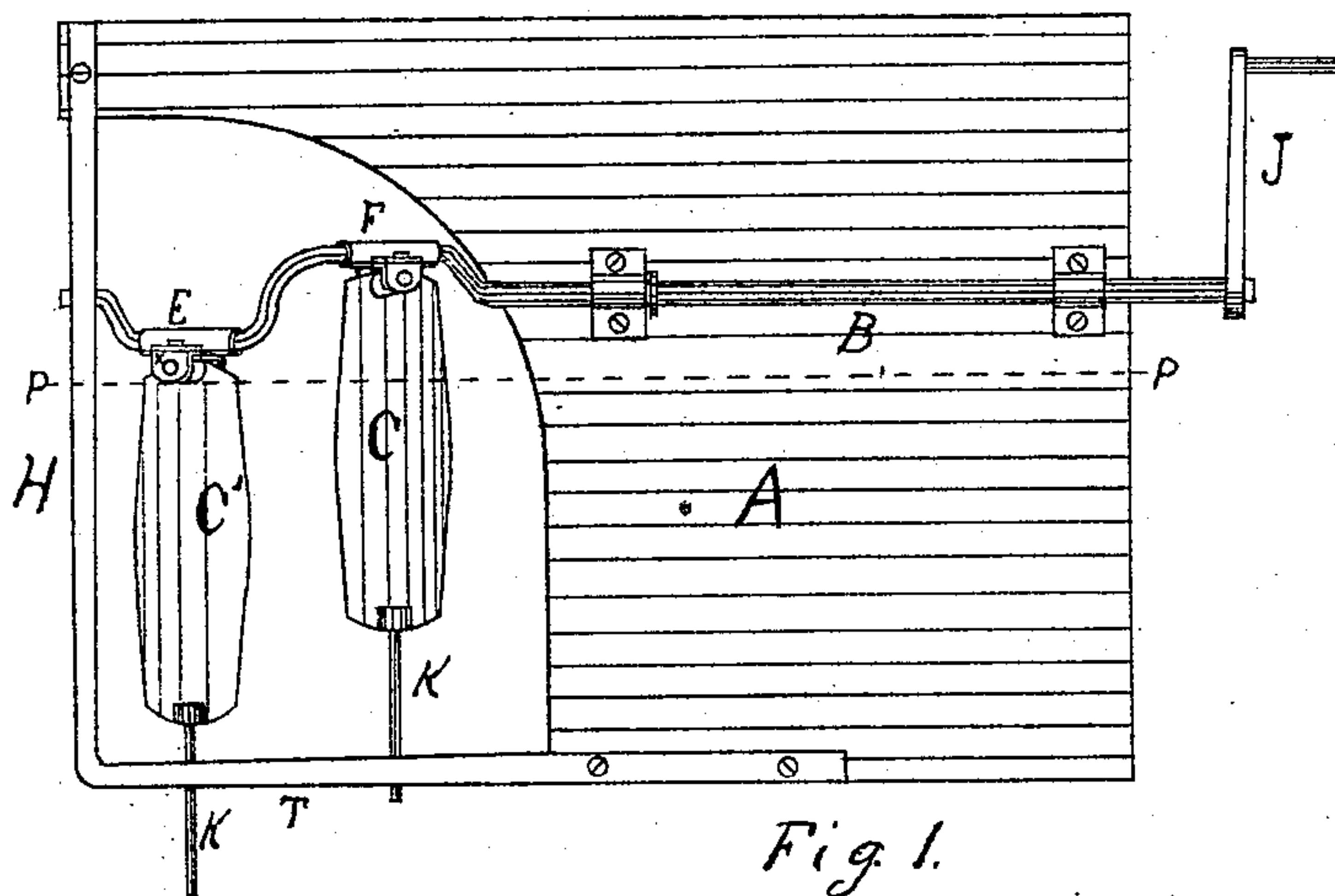


Fig. 1.

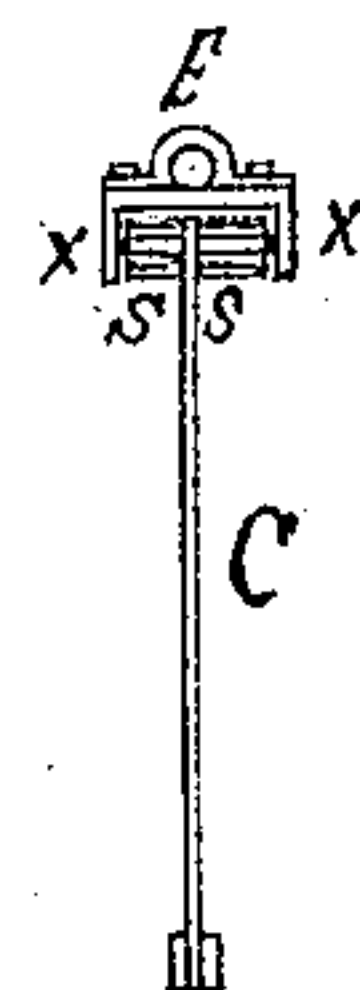


Fig. 3.

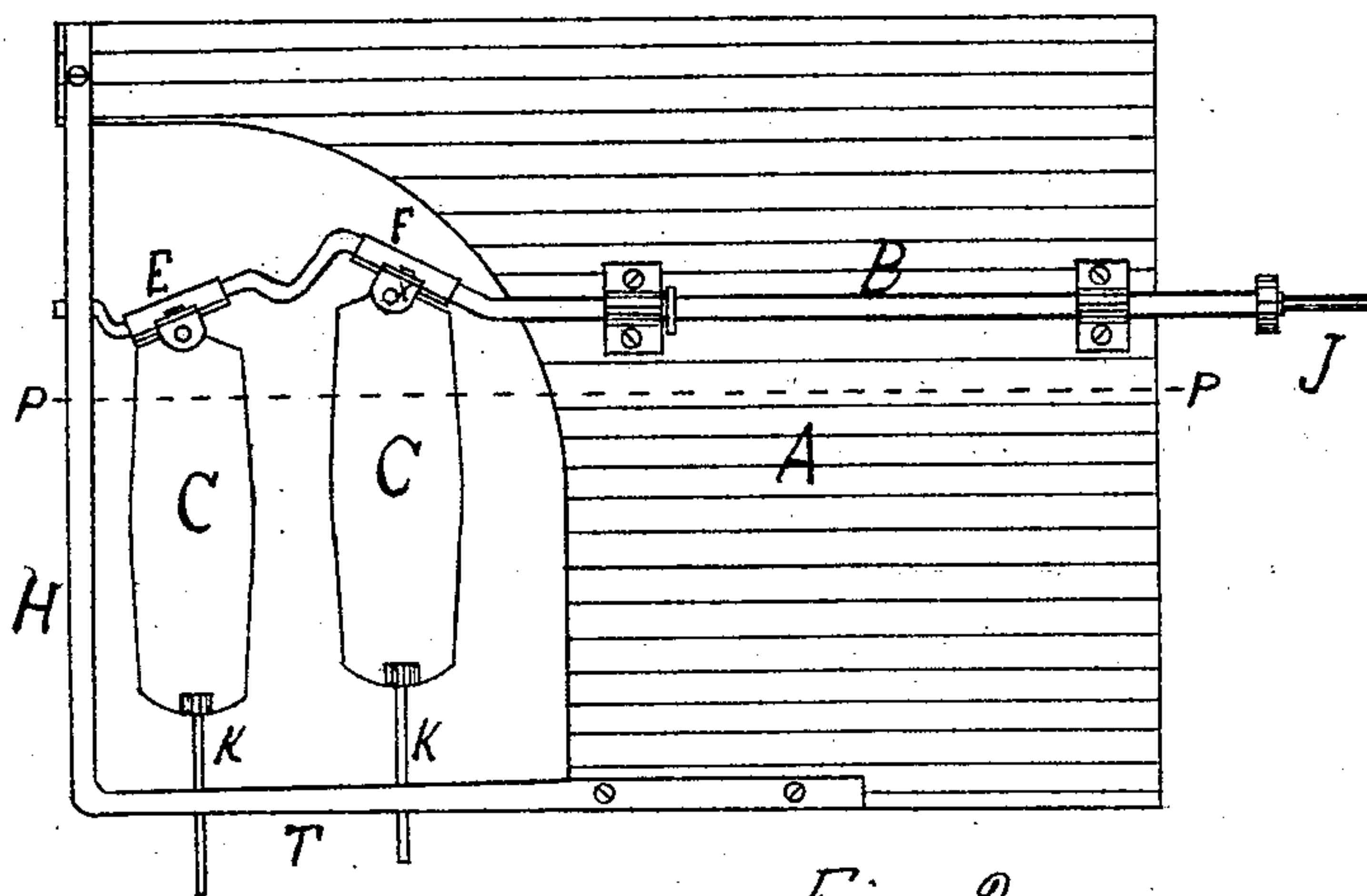


Fig. 2.

Witnesses,

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GEORGE R. PIERCE, OF GRAND RAPIDS, MICHIGAN.

IMPROVEMENT IN PROPELLERS.

Specification forming part of Letters Patent No. 124,009, dated February 27, 1872.

Specification describing a certain new and useful Device for Propelling Boats, invented by GEORGE R. PIERCE, of the city of Grand Rapids, county of Kent and State of Michigan.

My invention relates to a propelling apparatus composed of a series of buckets attached to a bent shaft, so constructed that by the revolution of the shaft the buckets are carried backward and forward laterally, without turning around, and in such a manner that they continually strike the water obliquely, and thereby propel the boat to which this device is applied. By giving this shaft different angles in its crooks the power created is increased or diminished, as well as the speed of the boat.

In the drawing, Figures 1 and 2 each represents a side view of my invention, but with the buckets in different positions. Fig. 3 shows the device for attaching the bucket to the bent shaft, as herein described.

In Figs. 1 and 2, A represents a portion of the stern of a boat to which my invention is attached. P P represent high-water mark line. B represents the bent shaft, and C C' the buckets attached to the bent shaft B, as described. J represents a crank, to which the power is applied, or it may be applied direct to the shaft. K K are rods attached to the buckets in a substantial manner, and passed through holes provided in part T, thus forming an oscillating slide.

In Fig. 3, C is one of the buckets attached to the oscillating box E. S S is a bolt rigidly attached to the bucket C, and moving freely in the lugs X X, as shown. The shaft B is bent in such a form that the portion passing through the oscillating boxes are at such an angle with the main portion of shaft B, and in such relative position to it, as to give a sculling motion—or that similar to a fish's tail—to the buckets C C'.

When the crank J is in the position shown in Fig. 1, if the crank be turned to the right the

bucket C also passes to the right, and strikes or presses the water obliquely; and the bucket C', in the mean time, passes to the left, striking the water obliquely, until the crank is in the horizontal position shown in Fig. 2, when the buckets are on a line with the boat, and present the least resistance to the water. By turning the crank further, the bucket C passes to the left and C' to the right, each bucket being turned so as to give an oblique sculling blow or pressure upon the water, as above described; and by continuing the revolutions of shaft B, the sculling motion is conveyed to the buckets, thereby, with little agitation of the water, rapidly and quietly propelling the boat.

Instead of using the oscillating slides K K, as shown in the drawing, the lower ends of the buckets may be attached to a bent shaft similar to shaft B, and connected with it by means of gearing or friction, or in any suitable manner, and thus the same motion is conveyed to the lower end as to the upper end of the buckets.

In my invention any number of buckets may be used, and this device may be applied either to the stern of the boat, as shown in the annexed drawing, or may be applied to the sides of a boat, in a manner similar to the paddle-wheels of an ordinary side-wheel steamer.

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

The combination of the buckets, the bent shaft B, and the oscillating boxes, or equivalent means for connecting said shaft and buckets, substantially as shown and described, so that the said shaft, when revolved, may give a sculling motion to the buckets, for the purposes stated.

GEO. R. PIERCE.

Witnesses:

JACOB FERRIS,
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