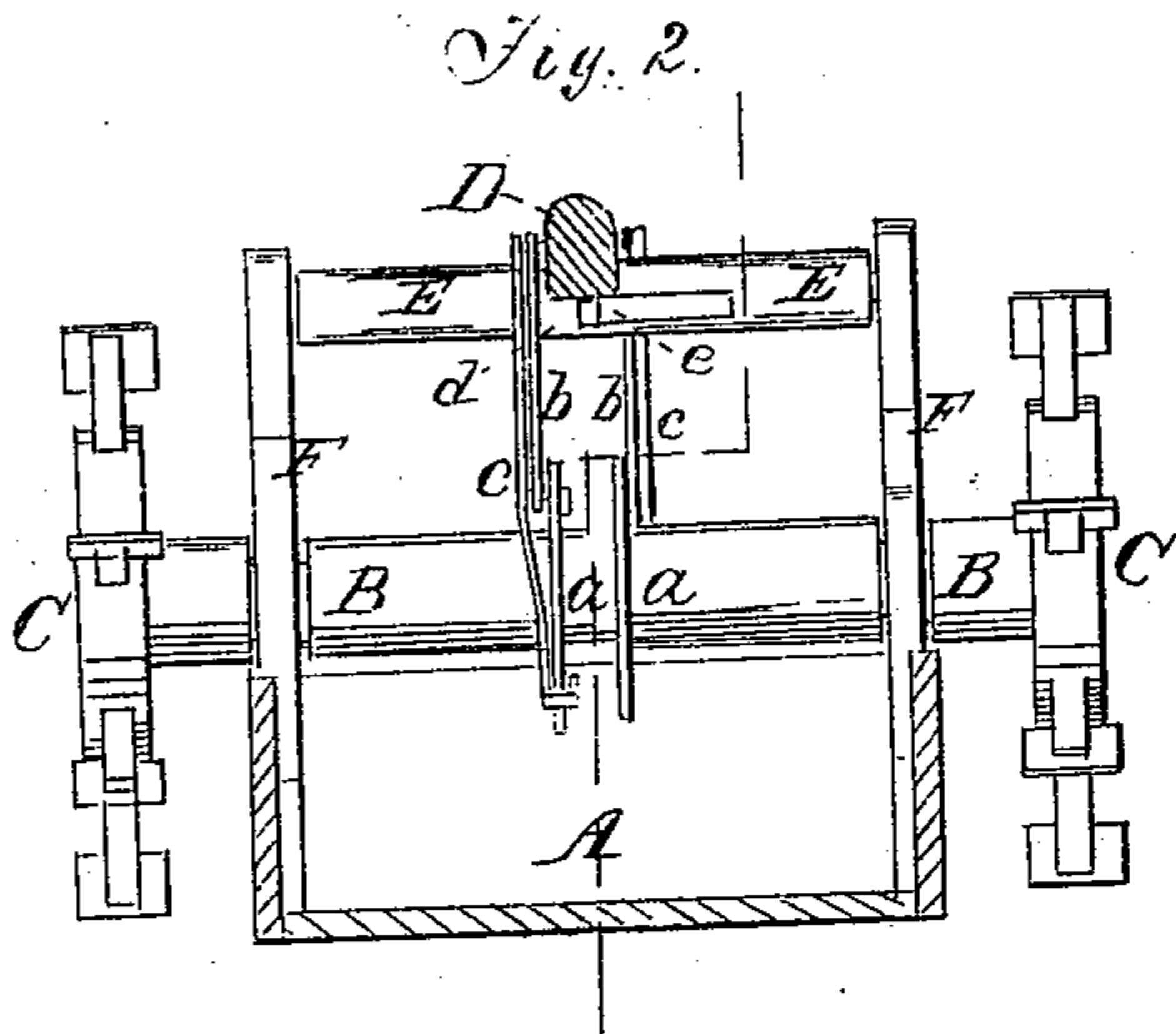
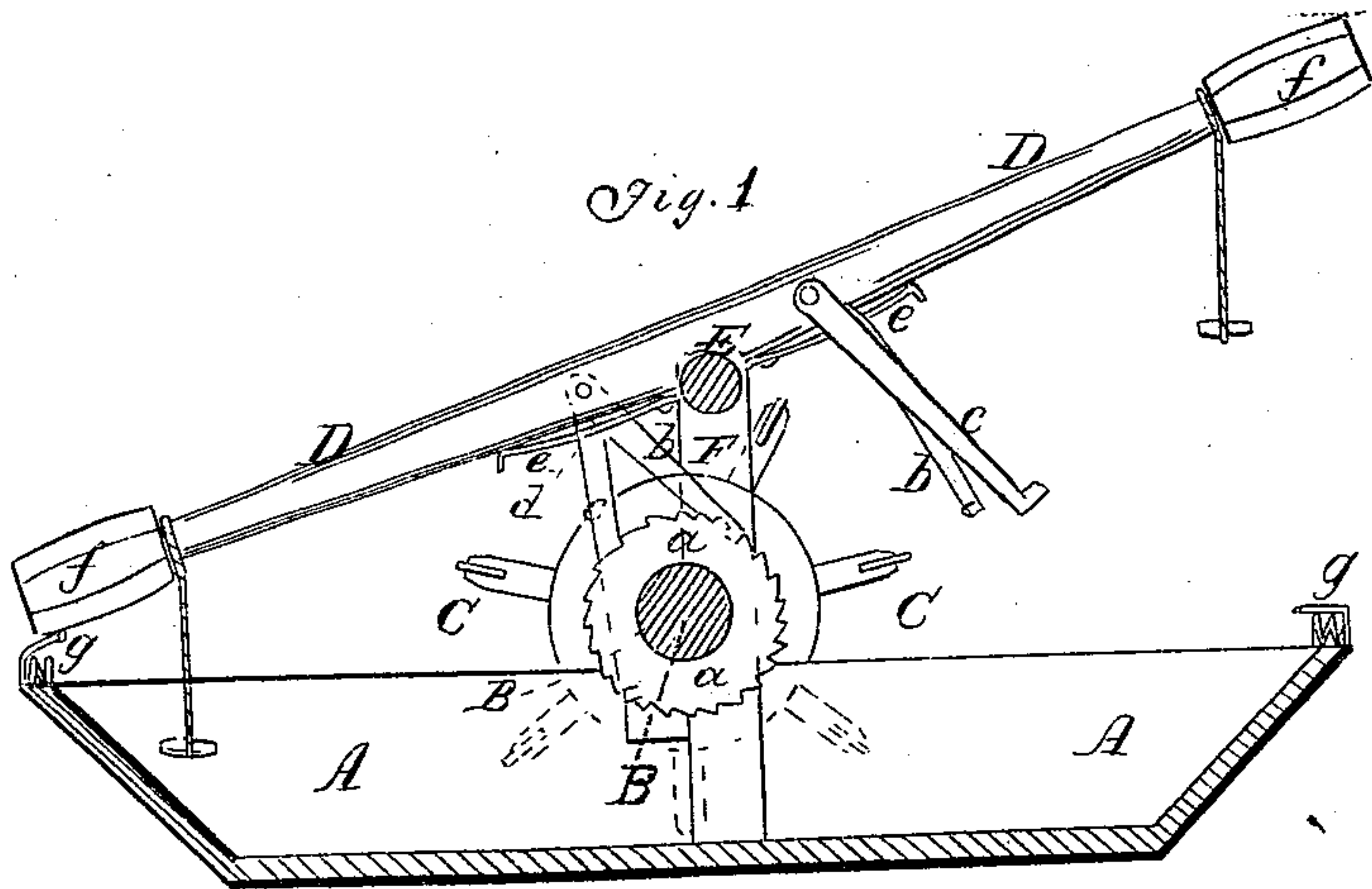


J. Dresser.
Paddle Wheel.

No. 96404.

Patented. Nov. 2 1869.



Witnesses:

Geo. W. Makee
Wm Dean Overell

Inventor:

J. Dresser
PER *Wm M. C.*
Attorneys.

United States Patent Office.

VIRGIL DRESSER, OF LEAVENWORTH, KANSAS.

Letters Patent No. 96,404, dated November 2, 1869.

IMPROVEMENT IN PROPELLING SMALL BOATS.

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, VIRGIL DRESSER, of the city of Leavenworth, in the county of Leavenworth, and State of Kansas, have invented new and improved Machinery for Propelling Small Boats; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 represents a side elevation, partly in section, of my improved machine for propelling small boats.

Figure 2 is a vertical transverse section of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to a new device for rotating, by muscular power, paddle-wheels, that are hung on flat-boats, or other small vessels, and consists in the application of an oscillating lever, which has a double set of pawls pivoted to it, to engage into ratchet-wheels, mounted on the paddle-wheel shaft.

When the lever is swung on its pivot, the pawls will carry the ratchet-wheels, and, with them, the paddle-wheels, around, so as to propel the boat.

The invention also consists in providing weights at the ends of the lever, and springs on the ends of the boat, so that the descending end of the lever will strike a spring, and receive an impetus to start in the opposite direction.

A, in the drawing, represents a flat-boat, or other small vessel, of suitable kind.

B is a transverse horizontal shaft, which has its bearings in the sides of the boat, and which carries paddle-wheels C, at its ends, as shown.

D is a longitudinal lever, secured at the middle to a cross-bar, E, which is, at its ends, hung in uprights F F, that project from the sides of the boat.

The lever can thus be swung on the bar E, which serves as its pivot.

On the shaft B are mounted two ratchet-wheels, *a b*, toothed in opposite directions.

On each side of the pivot E is hung, to the lever D, a pair of pawls, *b c*.

One pair of these pawls is thrown against one of the ratchet-wheels *a*, by means of a spring, *d*, on the bar,

or otherwise, while the other pair is held out of the way by a suitable catch, *e*, pivoted to the lever.

The shorter pawl *b* works with its end against a tooth of the ratchet-wheel, while the other pawl has its end bent out horizontally, so as to pull on the teeth of the wheel.

When the end of the lever to which the working pawls are pivoted is swung up, the longer pawl *c* will act on the ratchet-wheel, and will draw the shaft B partly around.

When the same end of the lever is drawn down, the other pawl *b* will act to move the axle B in the same direction.

Thus intermittent rotary motion is imparted to the shaft.

When the motion of the boat is to be reversed, the acting pawls are thrown out of gear, and the other pair put in action on the other ratchet-wheel, whose teeth, standing in opposite directions, will cause the rotation to be reversed.

To the ends of the lever D are secured weights *f f*, and on the ends of the boat are springs *g g*.

As a weighted end of the lever comes down upon a spring, it is thrown up by the same, and the reverse motion of the lever thereby started.

Two persons, one on each end of the boat, can most conveniently operate the lever, by alternately drawing its ends down; but one man can alone, without great difficulty, move the lever, and propel the boat.

Having thus described my invention,

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

1. The combination of a lever, D, fulcrumed at its centre, weighted at each end, and vibrating upon an elevated shaft, E, with reacting springs *g*, one or more pawls, *b c*, and one or more ratchet-wheels, *a*, each of said parts being arranged upon a boat, in the manner described.

2. The arrangement, upon the vibrating-lever D, of the spring *e e*, in the position shown, and for the purpose set forth.

VIRGIL DRESSER.

Witnesses:

JOHN COOK,
JOSEPH COOK.