M. A. Crooker.
Crank Paddle.

No. 6,793. Patented Oct. 16, 1849.

Fig: 1.

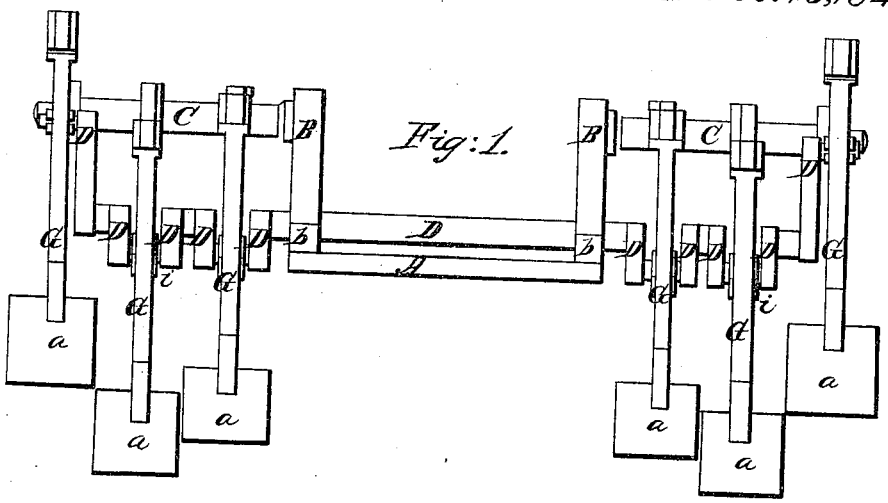


Fig: 2.

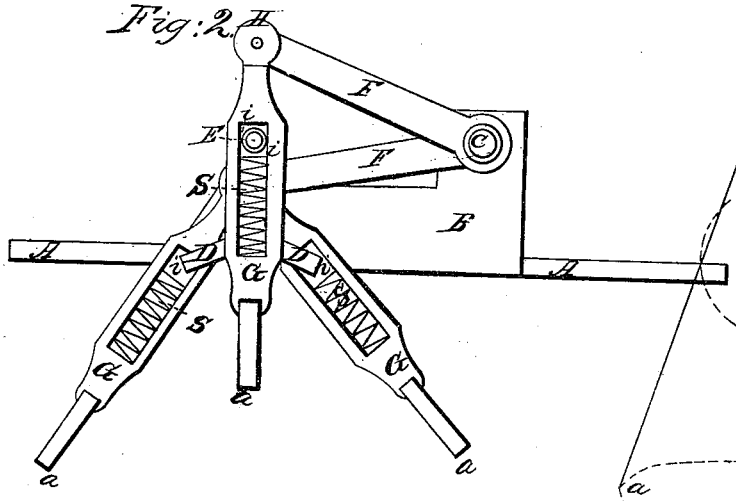
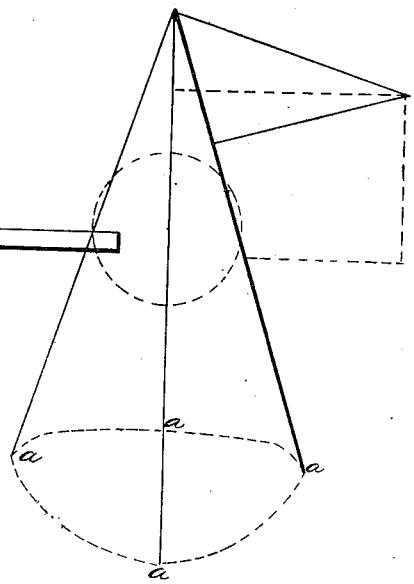


Fig: 5.



UNITED STATES PATENT OFFICE.

MATTHEW A. CROOKER, OF NEW YORK, N. Y.

IMPROVED JOURNAL FOR OSCILLATING PROPELLERS.

Specification forming part of Letters Patent No. **6,793**, dated October 16, 1849.

To all whom it may concern:

Be it known that I, MATTHEW A. CROOKER, of the city, county, and State of New York, have invented a new and useful Improvement on Paddle-Wheels for Propelling Boats or Vessels by Steam or other Power; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is an end view of the paddle as arranged for a boat. Fig. 2 is a side view of the paddles arranged as in Fig. 1. Fig. 3 shows the curve made by the paddles, as seen at Fig. 2, *a a a*.

Letter A, Fig. 1, is the bed-plate; B B, the stanchions or uprights attached to the bed-plates, and which support one end of the stud-pins or centers C C firmly.

a a a a a a are the paddle boards or buckets attached to the lower ends of the paddle-arms G G G G G G.

D D D D D D are the shaft and cranks which receive the boxes I I of the paddle-arms G G.

In Fig. 2, letter A is the bed-plate; B, the stanchions or uprights, as in Fig. 1.

C shows the end of stud-pin to which the arms or beams F F are attached and on which they move as a common center; D D D, the cranks which receive the boxes I I and pass through the arms G G G. These arms are formed with a slot or oblong hollow square near the center, in which the boxes I I are placed so as to slide.

S S S are springs placed in the bottom of the slots of arms G G G, and press against the lower boxes I I, so as to keep them snug against the journal D, but to allow the box to slide in case the arms or paddle-boards strike some hard substance, and thereby ease the strain upon the cranks.

The arms G and beams F are united at H by common mortise-and-tenon joints, so as to allow the vibration of the sweep of the cranks D. The shaft D, Fig. 1, rests upon journal-boxes *b b*, which are bolted to the bed-plate A. *a a a a*, Fig. 3, show the curve that the lower edge of the buckets describe when in operation.

Modus operandi: To produce the desired effect by this arrangement I give a rotary motion to the crank-shaft D by any known motive power or any known mechanical arrangement, as best suits my convenience. The motion of the shaft gives to the buckets *a a a*, through the medium of the paddle-arms G G G and the beams F F, a latitudinal elliptical motion, the whole being arranged upon a vessel so as to allow the paddles to pass through the water while describing the lower part of the circle and above the water while moving on the upper part of the circle, so that the resistance of the water to the movement of the paddle gives an impetus to the vessel on which the machinery rests.

Reversing the motion of the machinery will move the boat in an opposite direction.

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

The application of springs to the journal-boxes in such a manner as to ease the strain upon the cranks and paddles when the paddles meet with an extra weight or resistance suddenly, thereby lessening very materially the danger of breaking the cranks and other parts of the machinery, which are combined and operate substantially as herein set forth.

MATTHEW A. CROOKER.

In presence of—
JOHN BULLOCK,
S. M. BULLOCK.