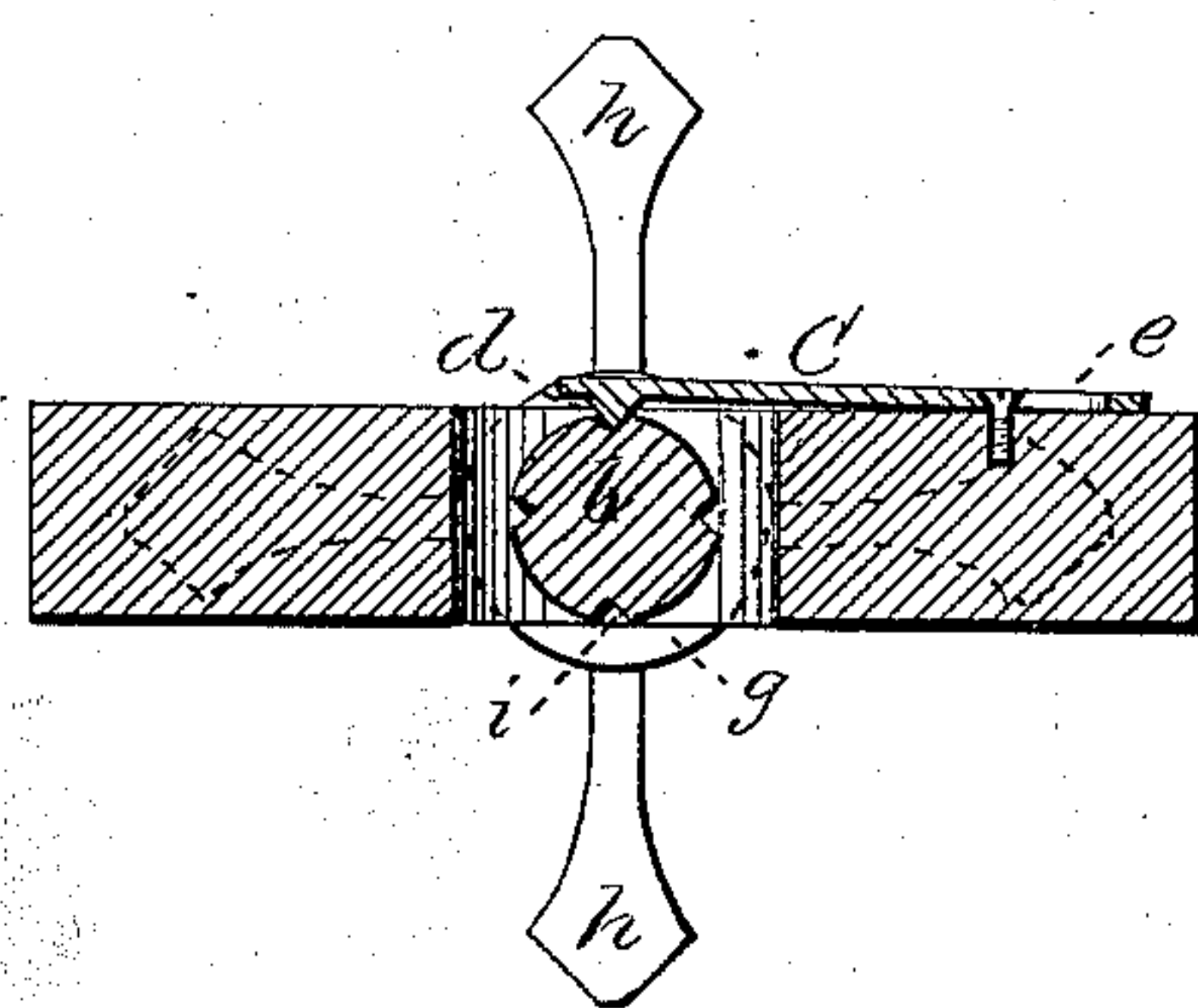
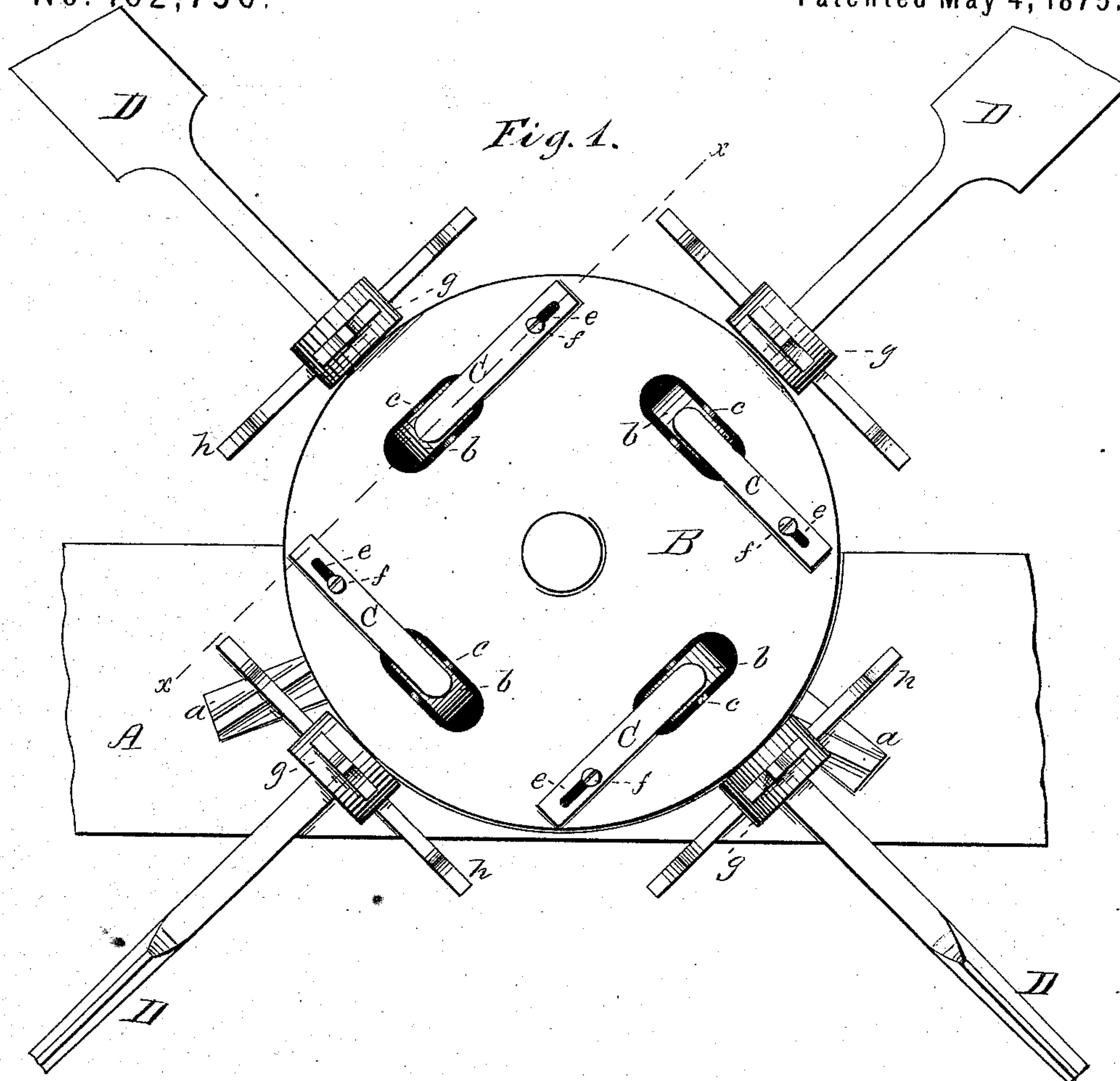


C. A. LAMPHERE.
Feathering Paddle-Wheels.

No. 162,756.

Patented May 4, 1875.



WITNESSES

Benjamin L. Pole
Wm. E. Oliphant

INVENTOR

Charles A. Lamphere,
per Charles M. Fowler,
Attorney

UNITED STATES PATENT OFFICE.

CHARLES A. LAMPHERE, OF ARKPORT, NEW YORK.

IMPROVEMENT IN FEATHERING PADDLE-WHEELS.

Specification forming part of Letters Patent No. 162,756, dated May 4, 1875; application filed January 16, 1875.

To all whom it may concern:

Be it known that I, CHARLES A. LAMPHERE, of Arkport, in the county of Steuben and State of New York, have invented certain new and useful Improvements in Side Paddle, Propeller, and Rudder Wheels; 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 which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 represents a side view of my invention, and Fig. 3 a sectional view taken through the line *x x* of Fig. 1.

This invention has relation to paddle and propeller wheels, the object of which is to avoid the raising of water in the revolution of the wheel.

My invention therefore consists in a wheel provided with paddles, caused to rotate by suitable arms upon the shaft, which come in contact with projections upon the side of the vessel or boat during the revolution of the paddle-head; and my invention also consists, in connection with suitable rollers upon the shafts of the paddles, provided with V-shaped grooves, of springs, having near one end a projecting lip, and at the other an elongated slot, by which it may be fastened or secured to the paddle-head, and capable of being adjusted or set to the desired position for the purpose of regulating the paddles at the proper angle with the paddle-head and also to prevent the paddles from turning by the action of the water, as will be hereinafter more fully described.

In the drawings, A is intended to represent a portion of the side of a boat or vessel, and provided with suitable projection *a a*, the purpose of which will be hereinafter described. A paddle-head, B, is secured to a crank-shaft of the boat or vessel, and is provided with cavities or openings for the reception of rollers *b*, which are rigidly connected to a rotary shaft, *c*, inserted in the paddle-head.

These rollers *b b* have V-shaped grooves *i* upon their outer periphery, at an angle, if desired, of about ninety degrees, which, in connection with a flat or other suitably-formed spring, C, provided with a correspondingly-shaped lip or projection, *d*, prevent the paddles D from turning by the action of the water. These springs C have elongated slots *e*, by which they may be secured to the paddle-head by a suitable set-screw, *f*, and admit of their adjustment, or allow of their being set to the desired position for regulating the paddles D at the proper angle with the paddle-head. Upon the rotating shafts *c* are secured hubs *g*, each of which carries four projecting arms, *h*, and whereby, when brought in contact with the projections *a a* on the side of the boat or vessel, the paddles D are turned at right angles.

The paddles D, with their operating mechanism, when desired, may be increased in number; and my invention may be used as a rudder by the employment of suitable belts and bevel-gearing connected to the main shaft with the shaft of the stern wheel.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The paddle-heads B, carrying the paddles D, upon the shafts of which are mounted the hubs *g*, carrying arms *h*, and the rollers *b*, provided with V-shaped grooves *i*, which are operated upon by friction-springs C, the whole adapted to be operated for feathering the paddles by suitable projections on the side of the boat, substantially as set forth.

2. The regulating-springs C, having the lips *d* and elongated slot *e*, in combination with the rollers *b*, constructed to operate substantially as and for the purpose described.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

CHARLES A. LAMPHERE.

Witnesses:

ARTHUR GRIFFETH,
S. E. DAY.