

G. A. Keene.
Paddle Wheel.

N^o 45,835.

Patented Jan. 10, 1865.

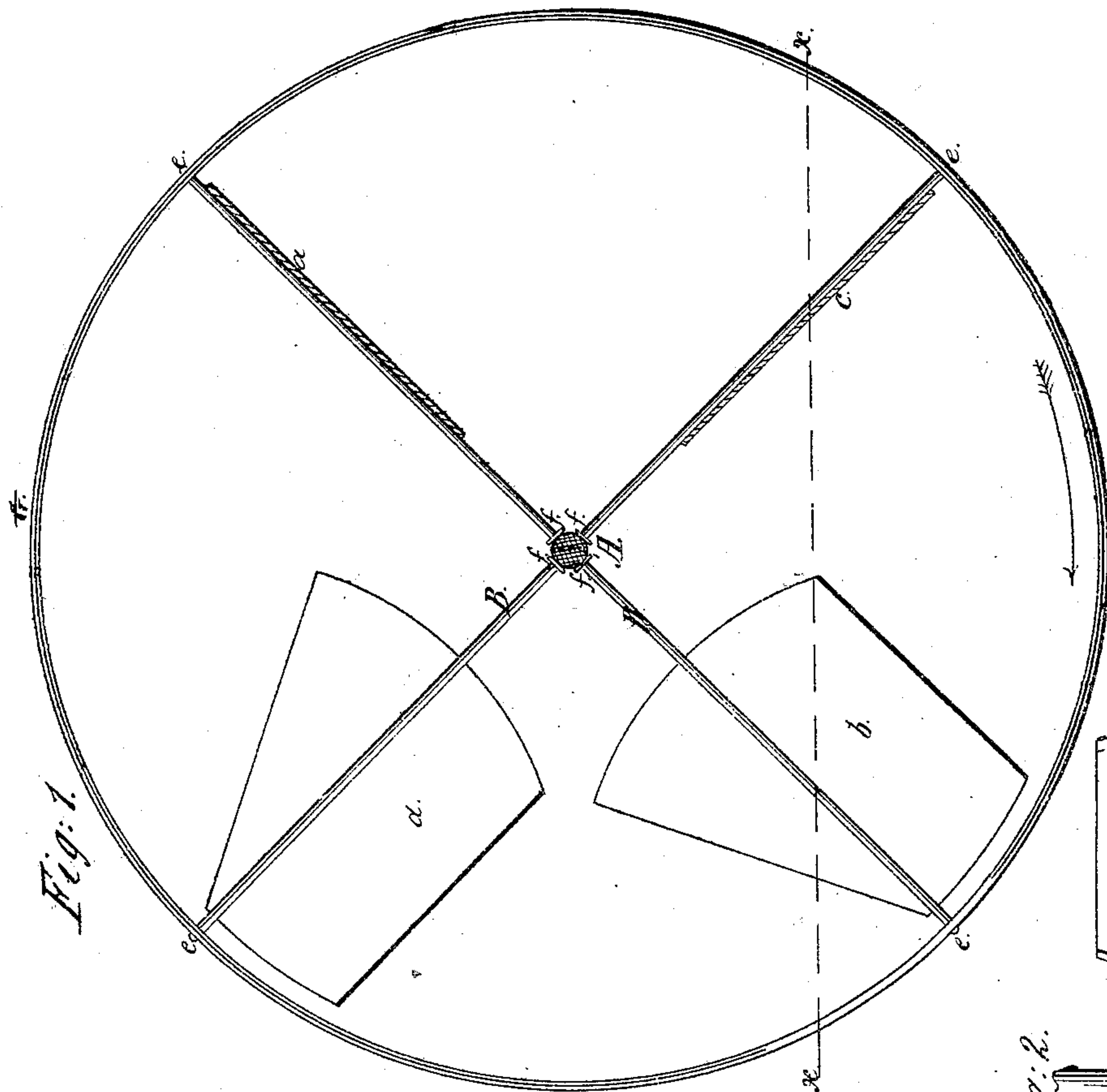


Fig. 1.

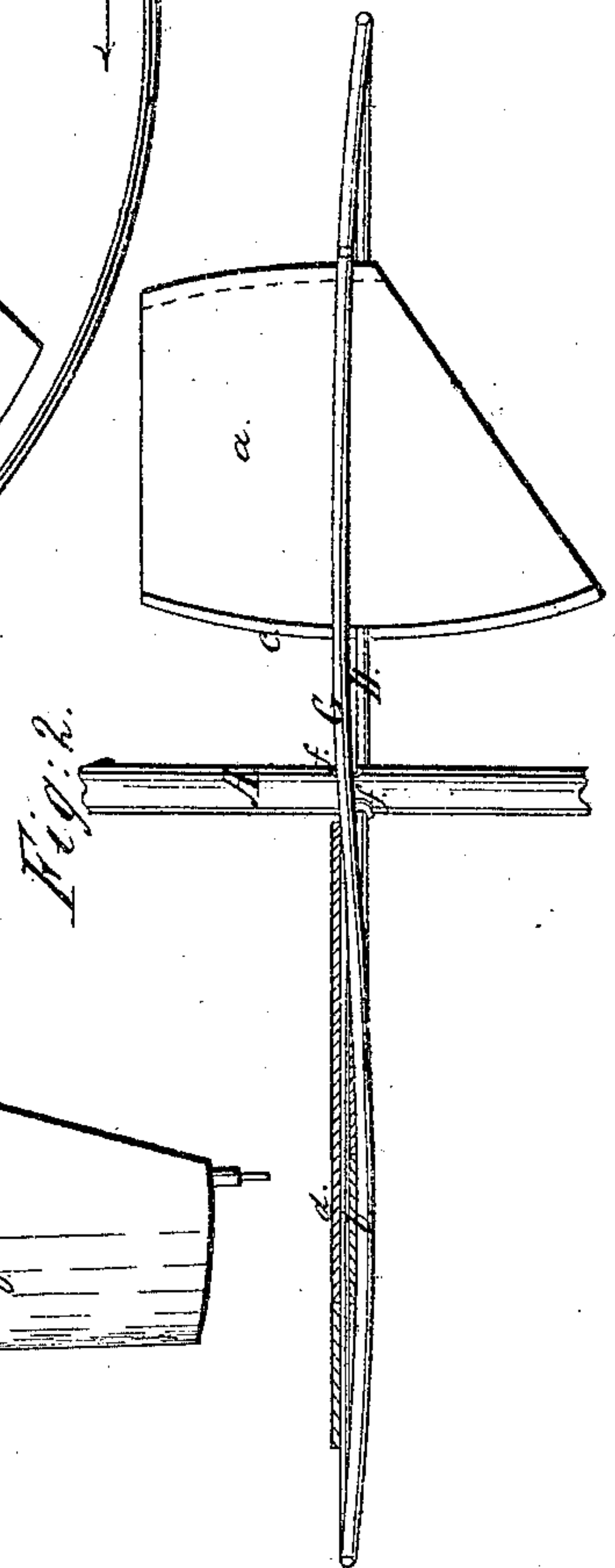


Fig. 2.

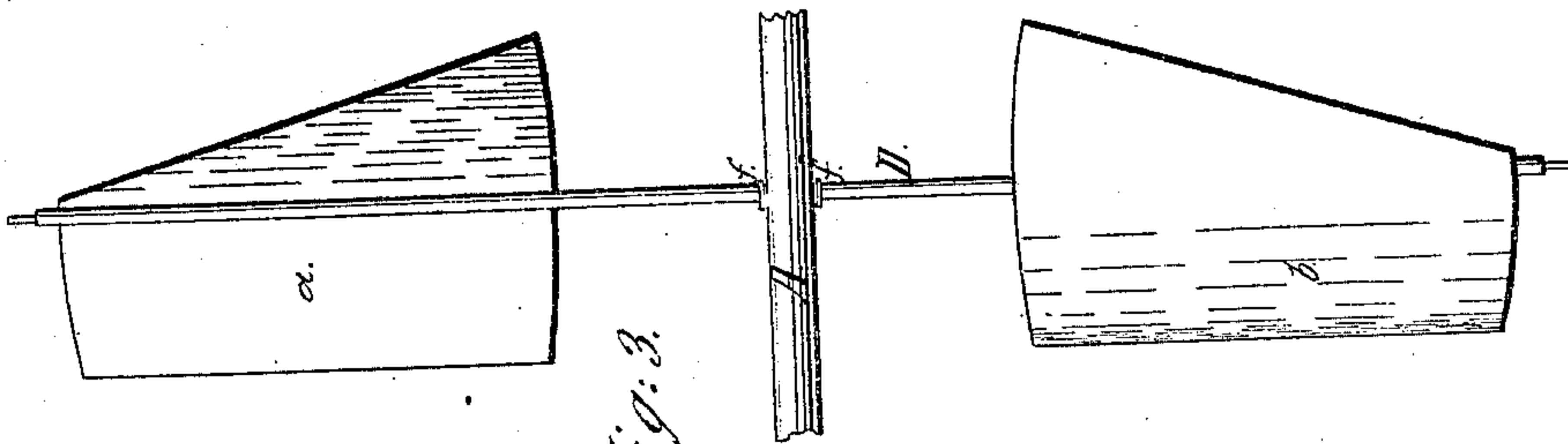


Fig. 3.

Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE A. KEENE, OF NEWBURYPORT, MASSACHUSETTS.

IMPROVED FEATHERING PADDLE-WHEEL.

Specification forming part of Letters Patent No. 45,835, dated January 10, 1865.

To all whom it may concern:

Be it known that I, GEORGE A. KEENE, of Newburyport, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Feathering Paddle-Wheels; 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 accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of one of my paddle-wheels, representing one paddle, *c*, as entering the water, and another, *b*, emerging, *xx* being the water-line. Fig. 2 is a top view of the same, and Fig. 3 a top view of a pair of paddles at an angle of forty-five degrees with the wheel-axle.

Like parts are represented by the same letters in all the drawings.

The nature of my invention consists, first, in attaching a pair of paddles at right angles with each other on the opposite ends of a rod or shaft, which extends through the diameter of the wheel and turns freely in a plane at right angles with the axle in bearings in the periphery or rim, said paddles being so arranged as to present somewhat more surface on one side of said rod or shaft than on the other, so that the one paddle, entering the water flatwise, in passing through the same will partially rotate and emerge from it edgewise, while at the same time it will so turn the other paddle on the opposite end of the rod or shaft that it will in turn enter the water flatwise, thereby producing a very simple and efficient feathering paddle-wheel, by the use of which a great amount of power will be saved.

My invention further consists in the employment of a rim or band extending round the center of the wheel, like the felly of a carriage-wheel, for the purpose of staying the paddle-rods and forming bearings for them to turn on, and also to operate as a protection to the paddles in passing through ice and other obstructions; also, in bending or waving said rim to correspond with the positions of the various paddle-rods, so that a narrower and lighter rim may be employed.

To enable others skilled in the art to make

and use my invention, I will now describe its construction and operation.

A is the axle of the wheel, connected with the boat in the usual manner.

B and D are the paddle rods or shafts, of round iron or steel, which pass through the center of the wheel from the rim on one side to the rim on the opposite side, as shown in Fig. 1, the axle A (which may be enlarged for the purpose) being provided with round holes or bearings to receive the rods and allow them to turn with freedom.

G is a circular rim of iron or steel, (either flat or round,) which rests upon the ends of the paddle-rods, being connected to them by means of the pivots *e*, Fig. 1, or their equivalents, as shown in Fig. 3, where the ends of the rod are turned smaller, so as to form a shoulder, which shall rest against the rim. This rim G is bent or waved, as shown in Fig. 2, to meet the ends of the various paddle-rods, for the purpose specified above.

f f are thimbles fast on the paddle-rods, to keep them from sliding longitudinally.

a b and *c d* are the paddles, either of wood or metal, and of any desirable shape. These paddles are arranged in pairs, one paddle at each end of the rod at right angles with each other, for the purpose specified above. Each paddle is so attached to the rod or shaft as to present a little more surface to the water on one side of the rod than on the other, so that, though it strikes the water flatwise, it will leave it edgewise and turn its mate in the air into the proper position in turn to strike the water flatwise at the proper time. If the two sides presented exactly the same surface, the paddle would not turn at all, and would not leave the water feathering, and, consequently, the time required to turn the paddle so as to leave the water edgewise will depend upon the comparative surface on either side of the rod, and this may be more or less according to circumstances.

Fig. 1 represents only four paddles. More, however, may obviously be used when required.

Having thus described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

Arranging the floats of a paddle-wheel in pairs at right angles to each other, one at each end of a shaft passing through the center of the wheel, so as to present more area on one side of said shaft than on the other, in order that the one float, entering the water flatwise, in passing through the same shall gradually turn and emerge edgewise, while at the same time it is turning the opposite float, so that it shall enter the water flatwise, substantially as described.

G. A. KEENE.

Witnesses:

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