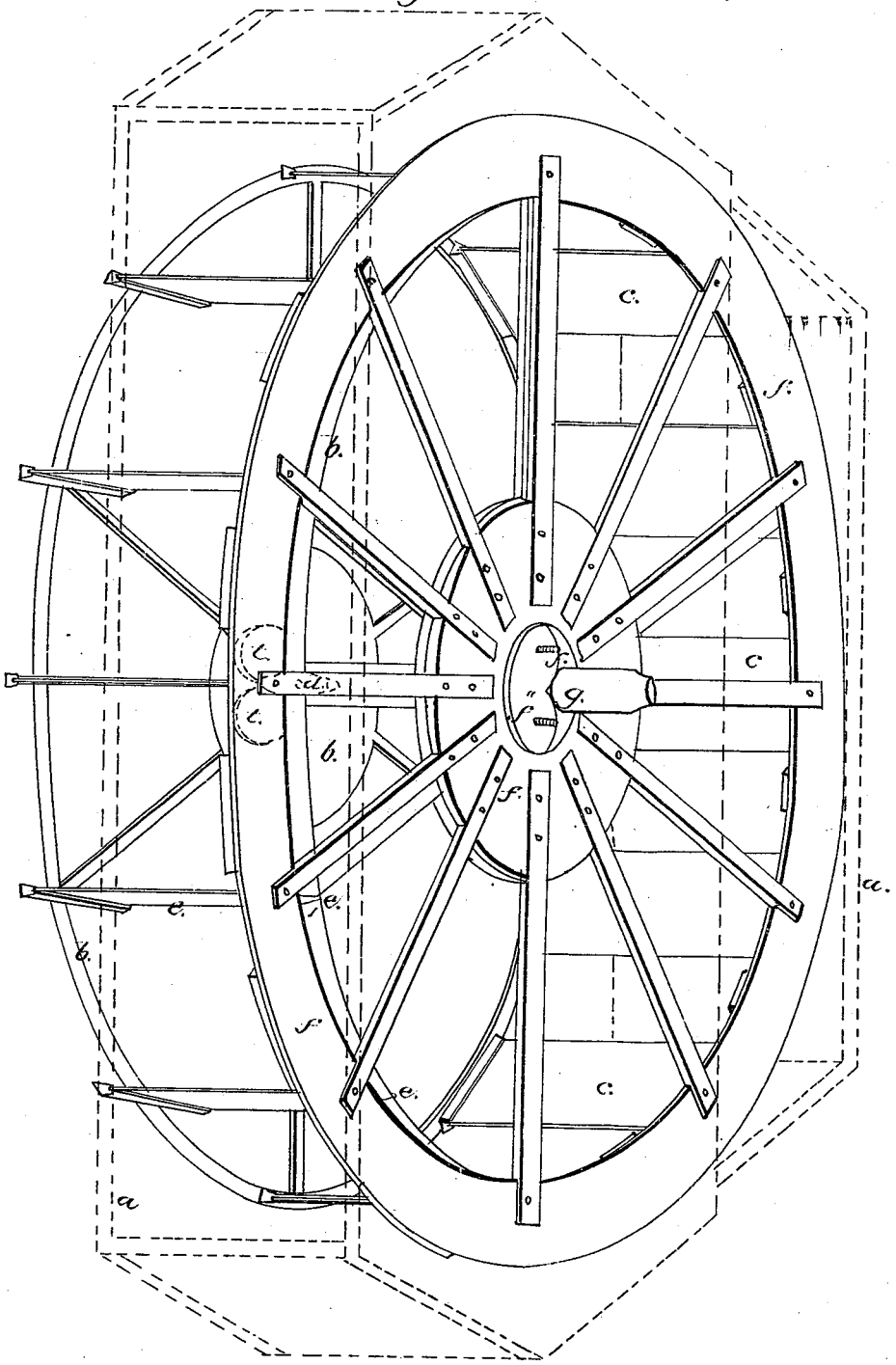
Sheet 1. 2 Sheets.

D. Deshon,

Paddle-Wheel.

No. 4,446. Fig. 1. Patented Apr. 4. 1846.



D. Deshon,

Paddle-Wheel.

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Fig. 3.

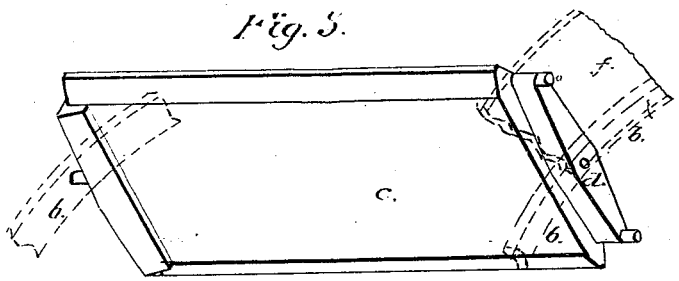
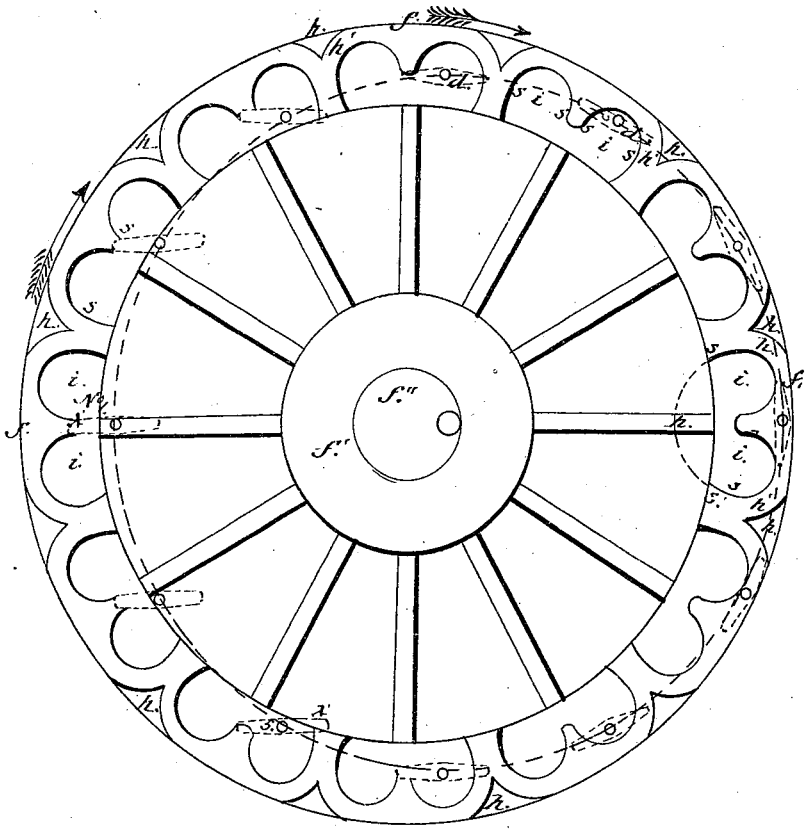


Fig. 2.



UNITED STATES PATENT OFFICE.

DANIEL DESHON, 2D, OF NEW LONDON, CONNECTICUT.

IMPROVEMENT IN PADDLE-WHEELS.

Specification forming part of Letters Patent No. **4,446**, dated April 4, 1846.

To all whom it may concern:

Be it known that I, DANIEL DESHON, 2d, of New London, in the county of New London and State of Connecticut, have invented a new and useful Improvement in Propellers for Vessels; and I do hereby declare that the following is a full, clear, and exact description of the principle or character thereof which distinguishes it from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of the wheel, the case being shown by a red outline. Fig. 2 is an elevation of the guide-ring, showing its inner face, the position of each bucket or paddle being shown by red outlines; and Fig. 3, one of the paddles detached.

The same letters refer to like parts in all the figures.

The nature of my invention consists in the method of turning the paddles so as to present them vertically, or at right angles to their motion, when acting on the water and feathering them during the rest of their revolution.

In the accompanying drawings, *a a* represent the case inclosing the wheel. It is drawn in red outline and represented as if transparent, showing those parts of the wheel that are covered by it.

b b is a wheel of the common construction for steamboats, the paddles *c* being suspended on the rim of said wheel, so as to turn on centers, as has heretofore been essayed. On one of the journals of each of said paddles, outside the rim of the wheel, there is an arm *d*, (see Fig. 3,) attached by its center to the journal of the paddle and extending out each way as far as the edge of the paddle. On the two ends of said arm are wrists *e*, like those of a crank, which are operated upon to turn the paddles in a way to be presently described. A ring *f* is placed at the side of the wheel on which the arms are. This ring is connected by arms with a smaller ring *f'*, concentric with it, that turns around a stationary circle *f''*, placed eccentric to and below the center of the wheel, as represented in the drawings, *g* being the wheel-shaft. The ring *f*, which is deep and flat, is formed with projections *i* from its inner face, as shown in Fig. 2. These projections *i* are semicircular from *s* to *s*, and they are united in pairs. The sides next to the spaces between the pairs are curved to correspond with the sweep required by the descending arm of the paddles. A small piece *h* is placed next to the periphery of the ring between each pair of the projections, which forms a groove *h'* between it and said projections in which the wrists on the arms of the paddles are guided. The ring turns with the wheel, and its action is as follows: When the paddle is at the lower or propelling part of the wheel, (see 1, Fig. 2,) the wrist *x* is in the hollow between two adjoining projections, as shown at 1, Fig. 2. It remains and turns in said hollow till the paddle is brought to the position indicated by 2, same figure, at which point the wrist begins to move out as the paddle feathers in the direction of the motion of the wheel, and the opposite wrist *y* passes into the groove *h'* between the two projections *i* and *h*, as indicated at 3. At the top of the wheel the two wrists rest on the outer curve of the projections, (see 4, Fig. 2,) and as the wheel continues to turn the wrist *y*, opposite to the one *x* with which we started, falls gradually into the space between the projections of the pair as it reaches the point where it is to act, as at 5. Thus it will be perceived that each paddle makes a half-revolution for each revolution of the wheel, and remains feathered during the whole revolution, except while acting on the water. It will be obvious that the curve of the projection from *s* around *z* to *s* on the twin projection can be continuous, as shown by the dotted line at the top of the wheel in Fig. 2, making them somewhat heart-shaped. To make the ring *f* stiffer, the center ring should be enlarged, and this whole guide-ring can be raised off from the wrists of the paddles, so as to allow them to turn free when not in use. The whole wheel may be placed either horizontally or vertically, as required.

Having thus fully described my improvements, what I desire to secure by Letters Patent is—

The method of turning the paddles, as herein described, by means of a revolving ring having guiding projections thereon, around which the wrists on the arms of the paddles play, in the manner and for the purpose set forth.

DANIEL DESHON, 2D.

Witnesses:

J. J. GREENOUGH,

A. P. BROWN.