

(No Model.)

R. P. FARRIS.

PADDLE WHEEL FOR STEAMBOATS, &c.

No. 306,328.

Patented Oct. 7, 1884.

Fig. 1.

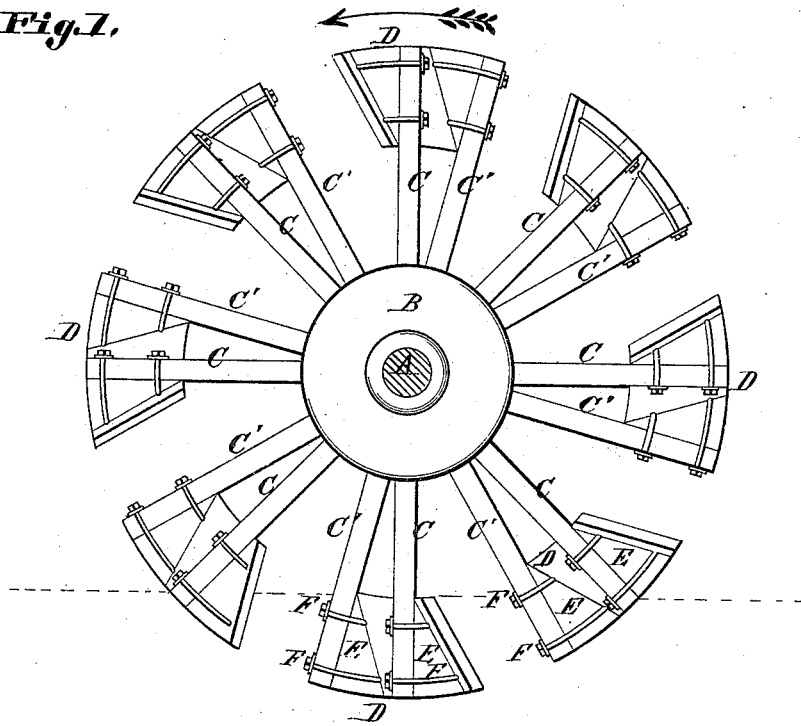
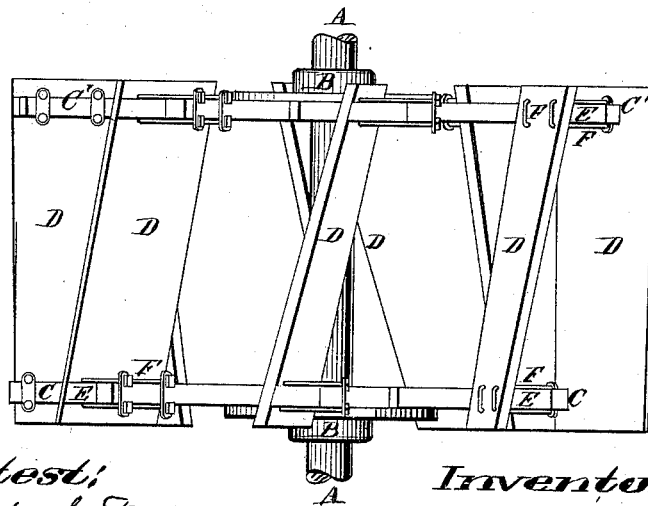


Fig. 2.



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ROBERT P. FARRIS, OF ST. LOUIS, MISSOURI.

PADDLE-WHEEL FOR STEAMBOATS, &c.

SPECIFICATION forming part of Letters Patent No. 306,328, dated October 7, 1884.

Application filed March 14, 1884. (No model.)

To all whom it may concern:

Be it known that I, ROBERT P. FARRIS, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Paddle-Wheels for Steamboats or Steam-Vessels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My improvement relates to a paddle-wheel having the paddles set obliquely to the plane of the paddle-shaft and also obliquely to the radial arms; and my invention consists in features of novelty hereinafter described, and pointed out in the claims.

Figure 1 is an elevation of the paddle-wheel from the inner side. Fig. 2 is a top view of the wheel.

The arrow in Fig. 1 shows the direction of rotation. The water-line is indicated by broken line.

A is the paddle-shaft, having hubs B secured thereto, to which the radial arms are attached. The arms C C' are set in two or more planes transverse to the shaft, two series being shown secured to as many hubs. Each bucket D is secured to two arms, C C', one in each series. In each pair of arms forming the support of a bucket the arm C, which is the one nearest to the side of the vessel, stands in advance of the arm C', more distant from the vessel's side. Thus it will be seen that the buckets incline backward toward the outer end, the inner end entering the water in advance of the outer end.

In addition to the described obliquity, the paddles are set obliquely to the radial arms C C', an angular block or bracket, E, being inserted between the paddle and the arm. The paddle is shown secured to the block and to the arm by staple-bolts F. They may be attached, however, in any suitable manner. The inclination of the paddles from the radial direction is such that in entering the water the

paddle is inclined from the radial toward the vertical, as shown in Fig. 1.

I do not confine myself as to the degree of obliquity in either direction.

These paddle-wheels may be used either at the side or stern of a steamboat, being used in pairs in either case, so that the side pressure will be equalized. In case of a stern-wheel boat the wheels may be disconnected and run at different speeds for steering purposes.

I claim as my invention—

1. In a paddle-wheel, the combination of a shaft, hubs secured to the shaft, arms secured to the hubs, and paddles set obliquely to the arms to project their outer edges in forward direction, as set forth.

2. In a paddle-wheel, the combination of a shaft, hubs secured to the shaft, arms secured to the hubs, paddles secured to the arms by staple-bolts, and angular blocks located between the arms and paddles to tip the outer edges of the latter in a forward direction, as set forth.

3. A paddle-wheel having its paddles arranged obliquely to the plane of the axis of the shaft, their inner ends being in advance of their outer ends, and their outer edges tipped forward, as set forth.

4. The paddle-wheel consisting of shaft A, hubs B, secured to the shaft, radial arms C and C', the arm C being arranged on the inside of the wheel in advance of the arms C', buckets D, secured to the outer ends of the arms by staple-bolts F, and wedge-shaped blocks E, secured with edges toward hubs between the buckets and the arms to tip the buckets forward, the whole arranged to obtain a vertical plunge and a stroke of the bucket across the flow of water, as set forth.

ROBERT P. FARRIS.

Witnesses:

SAML. KNIGHT,
GEO. H. KNIGHT.