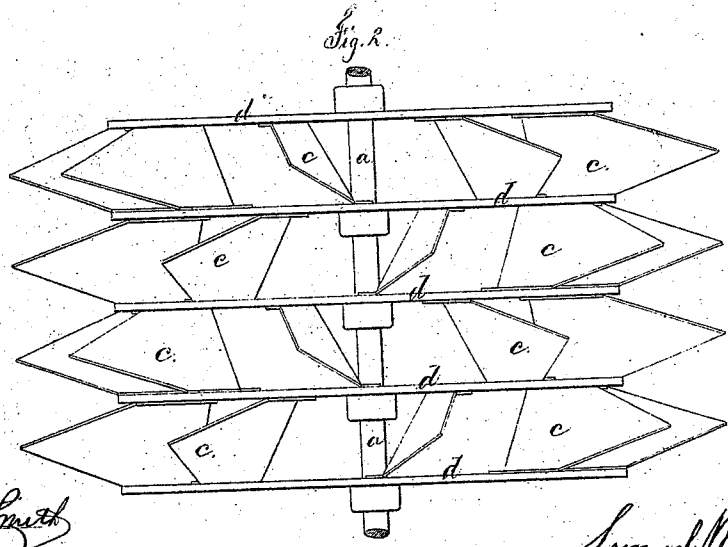
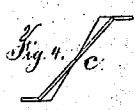
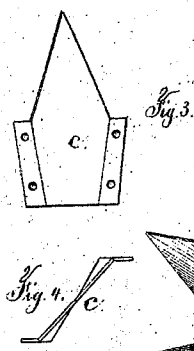
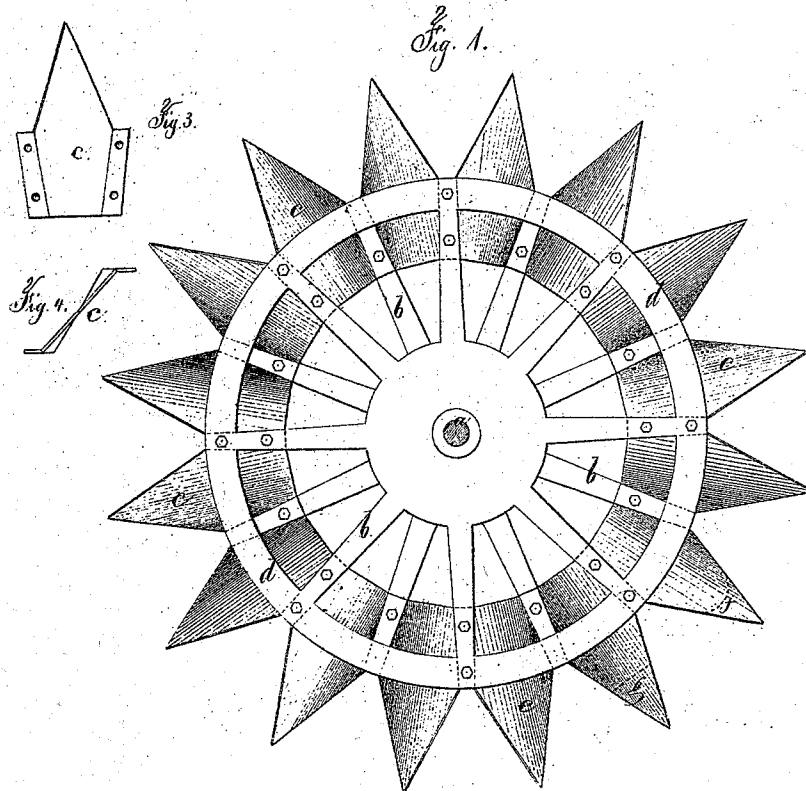


*L. M. Wright,*  
*Paddle Wheel.*

*No. 104,528.*

*Patented June 21, 1870.*



*Witness*  
*Chas. H. Smith*  
*Geo. V. Sweeney*

*Samuel M. Wright*

# United States Patent Office.

LEMUEL W. WRIGHT, OF BROOKLYN, NEW YORK.

Letters Patent No. 104,528, dated June 21, 1870.

## IMPROVEMENT IN PADDLE-WHEELS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, LEMUEL W. WRIGHT, of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Paddle-Wheels; and the following is hereby declared to be a full and correct description of the said invention.

The objects of this invention are to prevent concussion as the buckets of the wheel strike the water, to avoid the swell or sidewise wave from the paddle-wheel, and to lessen the lifting of water as the buckets leave the same.

I accomplish these objects by placing the buckets diagonally (at about forty-five degrees) to the axis of the shaft, and arranging them in ranges or rows around the wheel, the buckets of one range standing at an opposite inclination to those of the next range, and I place the buckets of one range intermediate to those of the adjoining ranges.

In the drawing—

Figure 1 represents an elevation of my improved paddle-wheel;

Figure 2 is a plan of the same;

Figure 3 is an elevation; and

Figure 4, a plan of one of the buckets detached.

*a* is the shaft of the paddle-wheel; *b-b*, the arms connected to the shaft *a* and to the rings *d*, in any suitable manner, and to these arms the buckets *c* are attached, the whole composing the paddle-wheel.

These buckets are to be arranged in two, four, or more ranges or rows, running around the wheel, each range standing at an opposite inclination, and each bucket in a position diagonal to the axis of the shaft, and intermediate to the buckets of the adjoining ranges.

I prefer that the diagonal position of the buckets should be about forty-five degrees to the vertical planes of the rims or arms to which they are attached.

By reference to fig. 2, it will be seen that by placing the buckets in the diagonal position above mentioned, and by making the inclination of each range of buckets run in an opposite direction, each of said ranges forms a section of a many-threaded screw, one range corresponding to a right-handed screw and the next to a left-handed screw, and the buckets of one range standing intermediately to those of the next range, the water, instead of receiving a backward movement as soon as struck by the buckets, will be thrown against the buckets of the next range, increasing the resistance or hold of the buckets on the water, preventing the side swell in a great measure, and finally passing the water directly to the rear.

I have shown the outer ends of the buckets as

projecting beyond the edges of the rims of the wheel, and each bucket coming to a sharp point. Instead of being so formed they may be made with a circular or straight outer edge, as shown at *fg*, by dotted lines, fig. 1, or, if desired, the buckets might be flush with the rims of the wheel.

A paddle-wheel made in the manner above set forth possesses many advantages over the wheels heretofore used. The diagonal position of the buckets prevents concussion as they enter the water, and gives to each of said buckets the properties of a section of a screw, so that each bucket commences to take a hold upon the water at the point of entering, and continues, during its entire passage through the water, to act against the water, and, during the latter part of its passage, very little or no water is lifted, and, as the lateral tendency of the water, as shown by the buckets of one range, is counteracted by the next range of buckets, the water is passed directly to the rear, and the heavy side swell caused by the ordinary paddle-wheel is avoided, and the wheel acts equally well, or nearly so, when going in either direction, and the wheel may be immersed to a greater extent than the paddle-wheels heretofore made without injuriously affecting the same, thereby increasing the hold of the wheel on the water, and the paddles are not liable to be injured by the waves.

I do not claim a paddle-wheel in which the buckets in one range stand at alternate inclinations between the rings, and are so placed to the adjacent range as to form a zigzag passage.

In my wheel all the buckets of one range stand inclined in one direction, and one bucket is separate and distinct from the next in the range, so that the buckets of one range are like the many threads of a right-handed screw, and the buckets of the next range are like the many threads of a left-handed screw, and these are arranged so that the edges of the buckets of one range are opposite the spaces between the buckets of the next range.

What I claim as my invention is—

1. A paddle-wheel made of ranges of buckets, arranged as alternate right and left-hand screw-thread sections, and positioned in the manner and for the purposes set forth.

2. A paddle-wheel in which the buckets are arranged as aforesaid, and the outer edges of the buckets project, in the manner and for the purposes set forth.

Signed this 28th day of December, A. D. 1869.

LEMUEL W. WRIGHT.

Witnesses:

CHAS. H. SMITH,  
GEO. T. PINCKNEY.