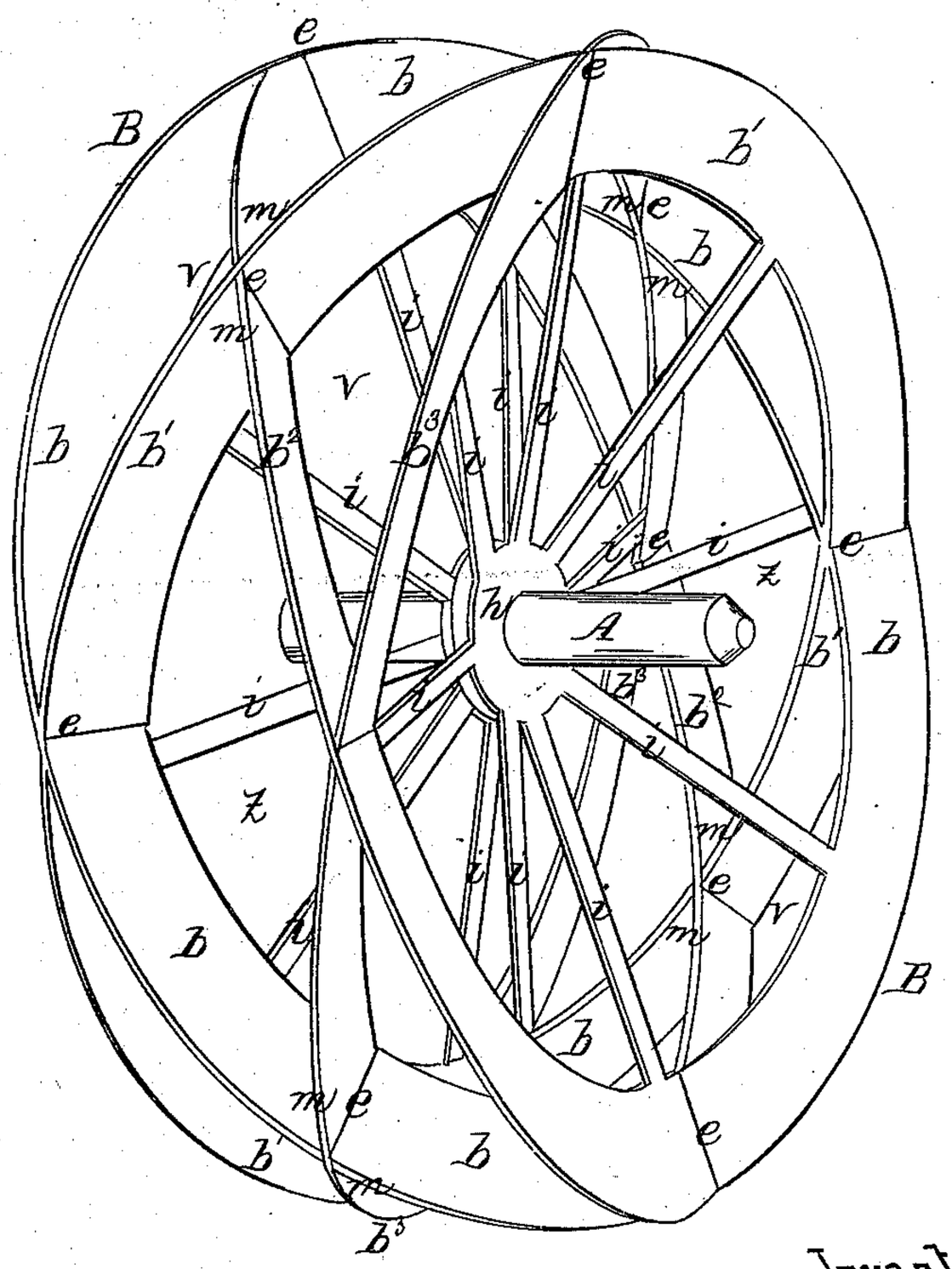
A. C. Loud,

Paddle Wheel.

No. 89777. Patented. May. 4. 1869.



Witnesses:

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ALFRED C. LOUD, OF SAN FRANCISCO, CALIFORNIA.

Letters Patent No. 89,777, *dated May* 4, 1869.

IMPROVEMENT IN PROPELLERS.

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, ALFRED C. LOUD, of the city and county of San Francisco, and State of California, have invented a new and improved Propeller; 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, making a part of this specification, in which my invention is represented by a perspective view.

This invention is an improvement upon the device patented by me January 19, 1869; and consists in placing upon a revolving horizontal shaft, four or more wheels, or annular rims, secured upon said shaft at an angle varying from a right angle about fifteen degrees, (more or less,) the disks, or rims of each pair intersecting each other on opposite sides of the shaft, and the intersections being so arranged, that they occur at or about regular intervals along the perimeter of the wheel.

In the drawings—

A represents the shaft, and B, the wheel, the latter consisting of four annular rims, b b^1 b^2 b^3, attached to a hub, h, by spokes i i, and intersecting each other at or near e e e e, at which points the rims may be soldered, bolted, or otherwise firmly fastened together, or may simply pass each other without being thus attached together.

By this peculiar construction, a system of diamond-shaped spaces, or buckets z z will be arranged around the middle of the periphery of the wheel, and alongside of such series of buckets, on either side thereof, a system of triangular, or half-diamond buckets v v, the acute terminal angles of the side buckets coming at the obtuse lateral angles of the centre buckets.

By this construction, the wheel not only has the full advantage of the lateral-swaying motion referred to in my former patent, and there compared to the action of an oar in sculling, or of the tail of a fish, but it also has the full effect of a system of direct-action buckets, formed by the intersection of the rims, and shown at m m m.

Said buckets enter and leave the water with the least possible friction and back action, and exert their power to the best possible advantage.

In addition to this advantage in operation, the several rims interlaced together in the manner described, mutually brace and strengthen each other, forming one of the strongest and most durable propelling-wheels ever invented.

Besides all these advantages, the buckets are arranged uniformly around the perimeter of the wheel, so that the propelling-action is even, smooth, and uniform, and not to some extent intermittent or irregular, as in the different modifications of my former wheels acting on the same principle.

Instead of annular rims, a series of entire disks, or circular plates, extending from the periphery to the shaft, or hub, and intersecting each other in the manner above described, might in some cases be employed to advantage. Such a wheel I consider a mere modification of my invention.

Any number of spokes or hubs, and form and construction thereof, may be employed in connection with my improved wheel.

It will be observed that the outline of the wheel is not strictly circular, but has eccentric protuberances upon its several sides, depending upon the number of rims, or disks employed, resulting from the oblique position of the rings with reference to the shaft.

The perimeter of the wheel may, however, if preferred, be turned or cut down to a perfect circle.

A cylinder, whether solid or hollow, attached to the shaft, and occupying the space between it and the rings, the latter being fastened to or supported by the cylinder, is an obvious modification of my invention.

So, too, the rings may be made of continuous pieces of metal, or each one may be made up of segments so arranged upon spokes, disks, cylinders, or otherwise, that their outline will correspond substantially with that of the wheel represented in the drawings annexed.

In a word, I do not intend to limit myself to the precise details of construction herein shown, but desire to be at liberty to avail myself of substantially the same arrangement of oblique-curved plates, whether attached to the shaft in one or another method, whether each plate be in one piece, or several, and whether the several plates be joined together or not.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

A propelling-wheel, so constructed as to exert its propelling-power against the water, by means of four or more rings, or rims b b^1 b^2 b^3, arranged obliquely with reference to the shaft, and intersecting each other, as described.

A. C. LOUD.

Witnesses:

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