

W.H. Muntz.
Paddle Wheel

N^o 11,231.

Patented July 4, 1854.

Fig. 1.

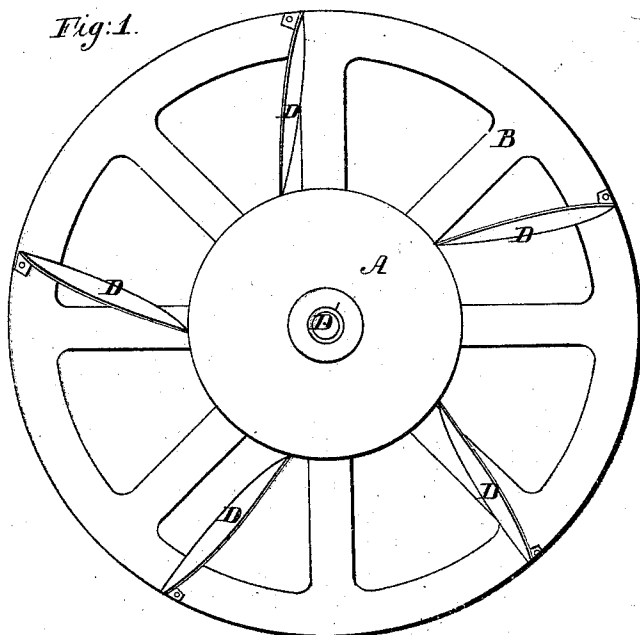


Fig. 2.

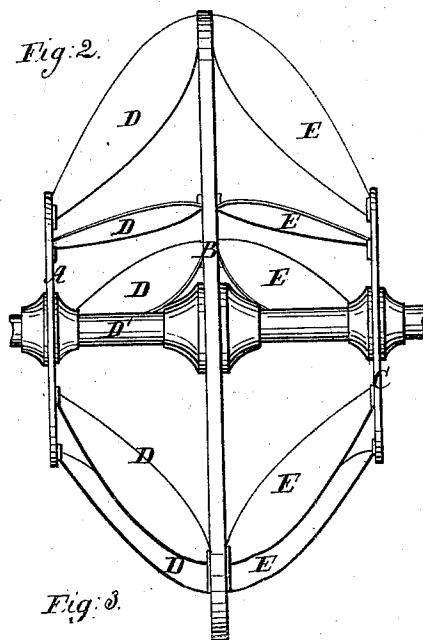


Fig. 3.

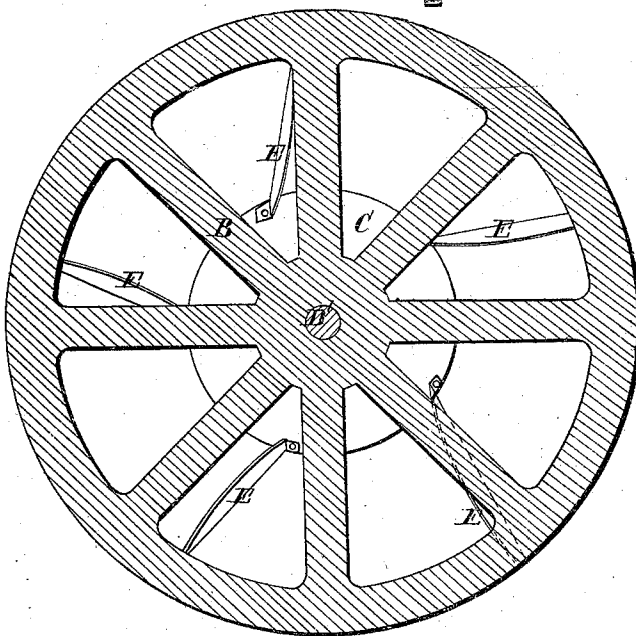
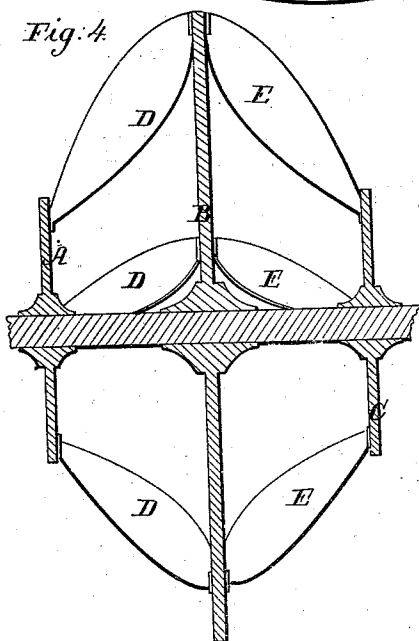


Fig. 4.



UNITED STATES PATENT OFFICE.

WM. HENRY MUNTZ, OF NORTON, MASSACHUSETTS.

PADDLE-WHEEL.

Specification of Letters Patent No. 11,231, dated July 4, 1854.

To all whom it may concern:

Be it known that I, WILLIAM HENRY MUNTZ, of Norton, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Paddle-Wheels for Navigable Vessels; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1 denotes a side elevation of my said improved paddle wheel; Fig. 2, an end elevation; Fig. 3, a vertical central and longitudinal section, and Fig. 4, a vertical central and transverse section of it.

In the construction of it, I employ three circular wheels A, B, C, (which I affix parallel to one another and at suitable distances apart) to a shaft D', which runs through the center of each of them. The middle wheel, B, is about twice the diameter of each of the others, viz., A, C, and may be termed the cutwater wheel. To these wheels the floats, D, D, &c., E, E, &c., are affixed, one set of them being made to extend from at or near the circumference of one wheel, A, to the wheel B, at or near its circumference, while the other set, viz., E, E, are made to extend from the wheel, C, to the wheel B, in a similar manner, the float being fastened to the wheels in any suitable way. These floats are not to be arranged respectively in radial planes, but are to have their planes or operating surfaces made to stand at an angle with a radial plane passing through the outer end of the bucket, viz., that end which is at the greatest distance from the shaft, while the float in extending from the middle wheel to the outside wheel is extended in a direction opposite to that in which the wheel is to be turned in the act of propelling, and so that its plane shall approximate toward a plane that shall be tangential to the lesser wheel with which it is connected.

The shape of the float I have represented in the drawings, it being made broadest where it first enters the water or near where it is connected to the cutwater wheel, while it is narrowest where it is joined to the other wheel, although I do not confine myself to this precise form of float.

My invention is based on two essential grounds, the first being that of extending one of the wheels, viz., the cutwater wheel,

beyond or making it of a greater diameter than the other two. Second, in carrying two sets of floats from said cutwater wheel to the other two wheels substantially as described.

Instead of extending one wheel, viz., the middle wheel, beyond or making it of a greater diameter than the two side-wheels, a wheel may be made by making the two side wheels of a greater diameter than the middle wheel, and extending the two sets of floats from the middle wheel to the two side wheels. Such a wheel, however, I do not deem so advantageous in its construction as that wherein the middle wheel or circular rim of it is made the cutwater wheel.

By arranging the floats out of radial planes and with respect to the direction of motion (while in the act of propelling as described) effect an important improvement in the operation of the float on the water, as when it enters the water it is caused to do the same at a greater angle with the surface of the water than it does when it is arranged in a radial plane, and consequently its action upon the water or its entry into the water is gradual and not sudden as it would be were its whole surface brought at once into contact with the water. By giving a dip to the float in the manner set forth, its outer end or that nearest the cutwater wheel is the first to enter the water, and the float becomes gradually submerged, so that in striking into the water there is not that sudden jar or concussion produced which occurs when the floats are arranged in radial planes, and the nearer the plane of the float is made tangential to the smaller wheel to which it is connected, the less will be the jar or sudden concussion of the float on the water.

I would remark that a lateral inclination is given to the float so as to cause it, when it rises out of the water to shed or throw off the water in directions transversely to the plane of the center or cutwater wheel B, the same enabling me to reduce the effect of resistance from back water.

On the fifteenth day of November, eighteen hundred and fifty three, Letters Patent of the United States were granted to me for a new or improved paddle wheel. In such invention I employed for supporting its buckets a cutwater wheel and two wheels of smaller diameter, and I formed each bucket

of a float and guard made to stand at an angle with each other, making the guard to extend from the rim of the cutwater wheel to the other or smaller wheel that supported
5 it, and so that the guard when the wheel was in use should not only pass edgewise through the water, but endwise into it.

In my improved wheel hereinbefore described, I have dispensed with the guard
10 and make use of a float instead of a bucket, and I have made said float widest at or near the cutwater wheel and gradually decreasing in width toward its other supporting wheel. This last or new or improved
15 wheel although containing some of the element of that heretofore patented, yet differs materially from it in other respects and has been found in practice to be an excellent wheel.

What therefore I claim as my invention 20 or arrangement consists—

In attaching each of the said paddles or floats to wheels or rims wherein that to which the broad surface of each of the paddles is attached is of greater diameter than 25 the other and the position of the paddle is in or about in a line parallel to a radial line or one drawn through the center of the wheel shaft, and the face of the paddle is oblique to the plane of this line which stands 30 perpendicularly to the axis of the shaft.

In testimony whereof I have hereunto set my signature this seventh day of December D 1853.

W. H. MUNTZ.

Witnesses:

R. H. EDDY,
F. P. HALE, Jr.