No. 635,843. Patented Oct. 31, 1899.

C. CHAMBERLAIN.

PADDLE WHEEL.

(Application filed Oct. 17, 1898.)

(No Model.)

Fig. 1.

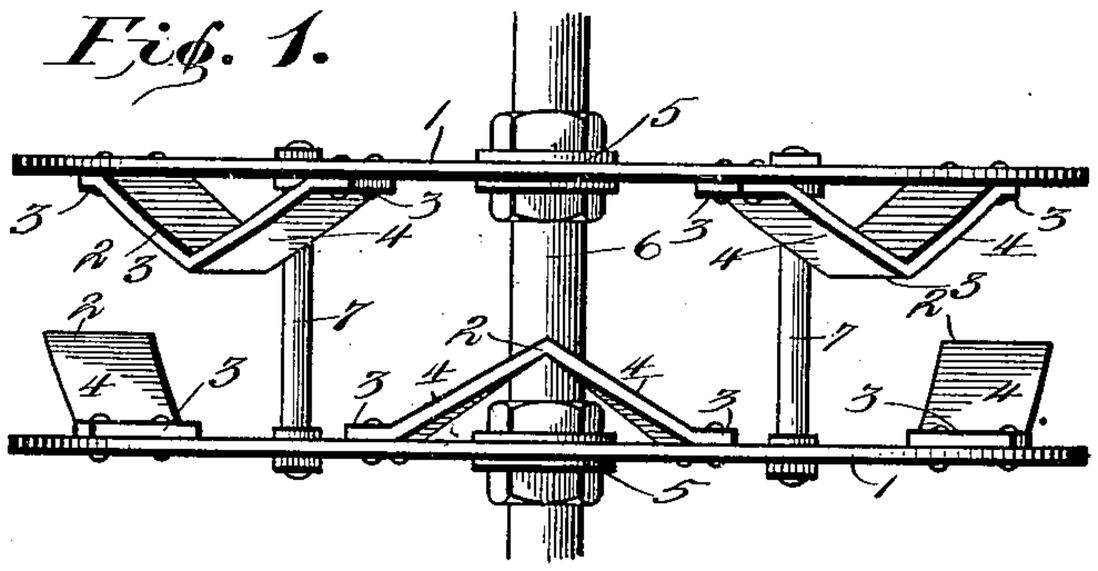


Fig. 2.

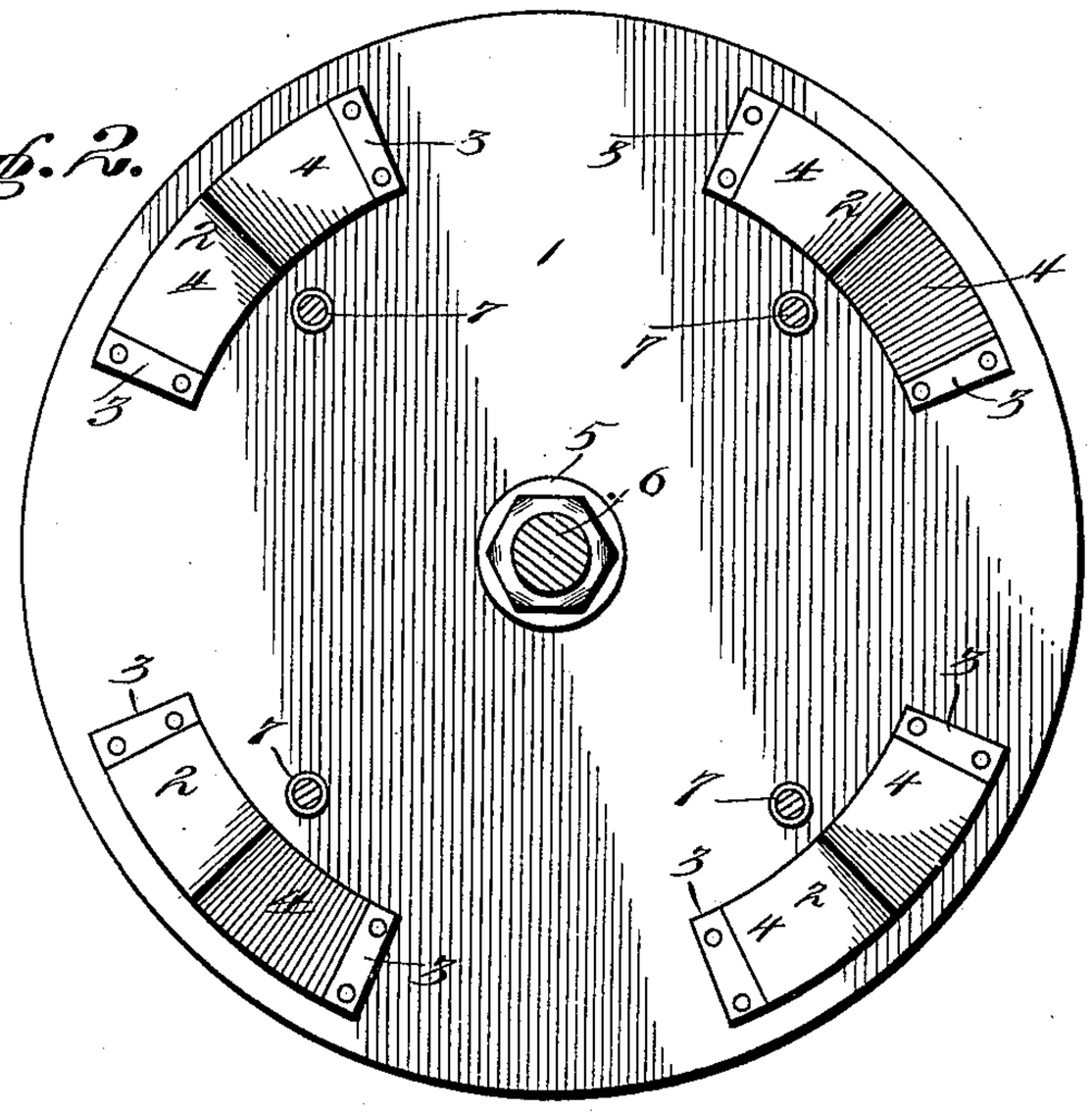


Fig. 3.

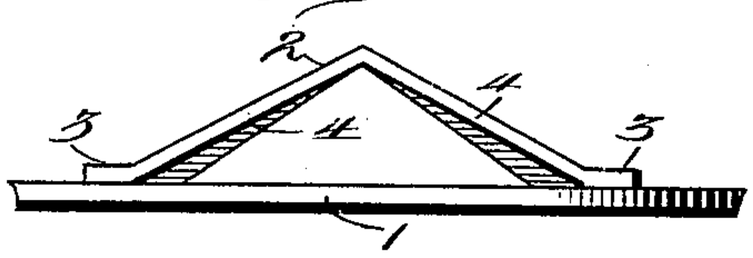
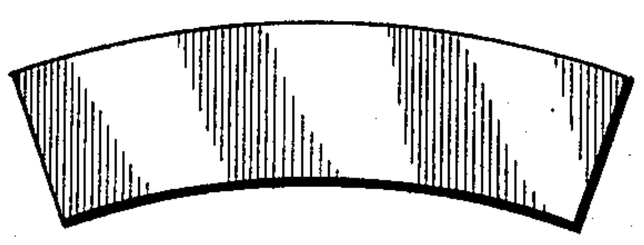


Fig. 4.



Witnesses
Clarence E. Walker
O. E. Hoyle

Calvin Chamberlain Inventor
By his Attorneys,
Cashow & Co.

UNITED STATES PATENT OFFICE.

CALVIN CHAMBERLAIN, OF FOXCROFT, MAINE.

PADDLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 635,843, dated October 31, 1899.

Application filed October 17, 1898. Serial No. 693,826. (No model.)

To all whom it may concern:

Be it known that I, CALVIN CHAMBERLAIN, of Foxcroft, in the county of Piscataquis, State of Maine, have invented certain new and useful Improvements in Propeller-Wheels, of which the following is a specification.

My invention relates to paddle-wheels for boats, and particularly for craft designed for shallow water, although the device embodying my invention is equally adapted for use in connection with vessels designed for use upon deep water.

A particular object of my invention is to provide a paddle-wheel of such a construction as to enter and leave the water without such resistance as to interfere with the rapid rotation of the wheel, while at the same time being of such construction as to insure the efficient communication to the vessel of a forward impulse.

A further object of my invention is to provide a paddle-wheel of such construction as to adapt it to be duplicated or multiplied to increase its effect and thus adapt it for vessels of different sizes and designed for use under different conditions.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims, it being understood that the improvement is susceptible of various changes in the form, proportion, size, and minor details of construction without departing from the spirit or sacrificing any of the advantages thereof.

In the drawings, Figure 1 is a plan view of a paddle-wheel constructed in accordance with my invention. Fig. 2 is a face view of one of the members thereof. Fig. 3 is a detail edge view of one of the blades with the adjacent portion of the disk. Fig. 4 is a plan view of the blank from which a blade of the approved construction is formed.

Similar reference characters indicate corresponding parts in all the figures of the drawings.

In the preferred embodiment of my invention the paddle-wheel consists of a plurality of spaced disks 1, upon the facing or opposing surfaces of which are arranged annular series of V-shaped or angular blades or projections 2, the blades of one member of the wheel being arranged opposite the intervals between adjacent blades of the other member, whereby the blades upon the two members are staggered. Each blade is constructed of a sheet-metal plate having parallel opposite side edges, said plate being bent upon itself at its center to form an angle of, say, one hundred and six degrees, and the end edge portions of the blank being extended to form attaching flanges 3, adapted to be riveted to the surface of a disk 1, whereby the side angularly-disposed portions 4 of each blade occupy positions at an angle of approximately thirty-seven degrees to the plane of the disk to which the blade is attached. The effect of this construction of wheel is to cause the water between the disks to follow a zigzag path, being deflected alternately from the front inclined surfaces or sides 4 of the blades from one disk to the other, and hence the reactive effect of a paddle-wheel constructed as described is great in proportion to the impact of the blades with the water, and the wheel constructed as described may be driven at a high rate of speed without that jarring which is incident to the use of paddles disposed to strike the water flat or in a position approximately perpendicular to the direction of movement. The disks are secured by means of collars 5 or the equivalents thereof to a common shaft 6 and are connected transversely by tie-rods or braces 7, preferably disposed at intermediate points between the peripheries and centers of the disks. Furthermore, it will be understood that a number of disks may be employed, and, if desired, blades may be arranged upon the exterior as well as the interior or facing surfaces thereof to increase the effect of the device in operation.

When in use, the wheel is submerged at its lower portion approximately to its center; but it may be submerged to a greater or less extent without materially affecting its efficiency. It is obvious that the wheel embodying my invention may be varied in diameter and in the interval between the disks to suit the conditions under which it is to be used, as the extent of submersion can be varied to suit the depth of the waters in which it is to be operated, and also that the number of annular series of blades applied to each disk may

be varied, it being possible to arrange a plurality of concentric series upon the same series of each disk without departing from the spirit of my invention.

Having described my invention, what I claim is—

1. A propeller-wheel comprising parallel spaced disks, impervious to water and provided upon their adjacent sides with inwardly-projecting V-shaped blades arranged in independent and disconnected circular series, the blades of each series being separately formed and provided with attaching-flanges at both ends and independently connected by means of said flanges to their respective disks at intervals.

2. A propeller-wheel comprising a shaft, two disks fast thereon and set apart to form a water-space which is open only at the periphery of the wheel, an annular series of blades having reversely-oblique front and rear sides and attached respectively in staggered order to the opposing faces of the disks, the blades at one side of the wheel being separated from those at the opposite side.

In testimony whereof I affix my signature in presence of witnesses.

CALVIN CHAMBERLAIN.

Witnesses:
W. L. STODDARD,
C. E. JEFFERDS.