

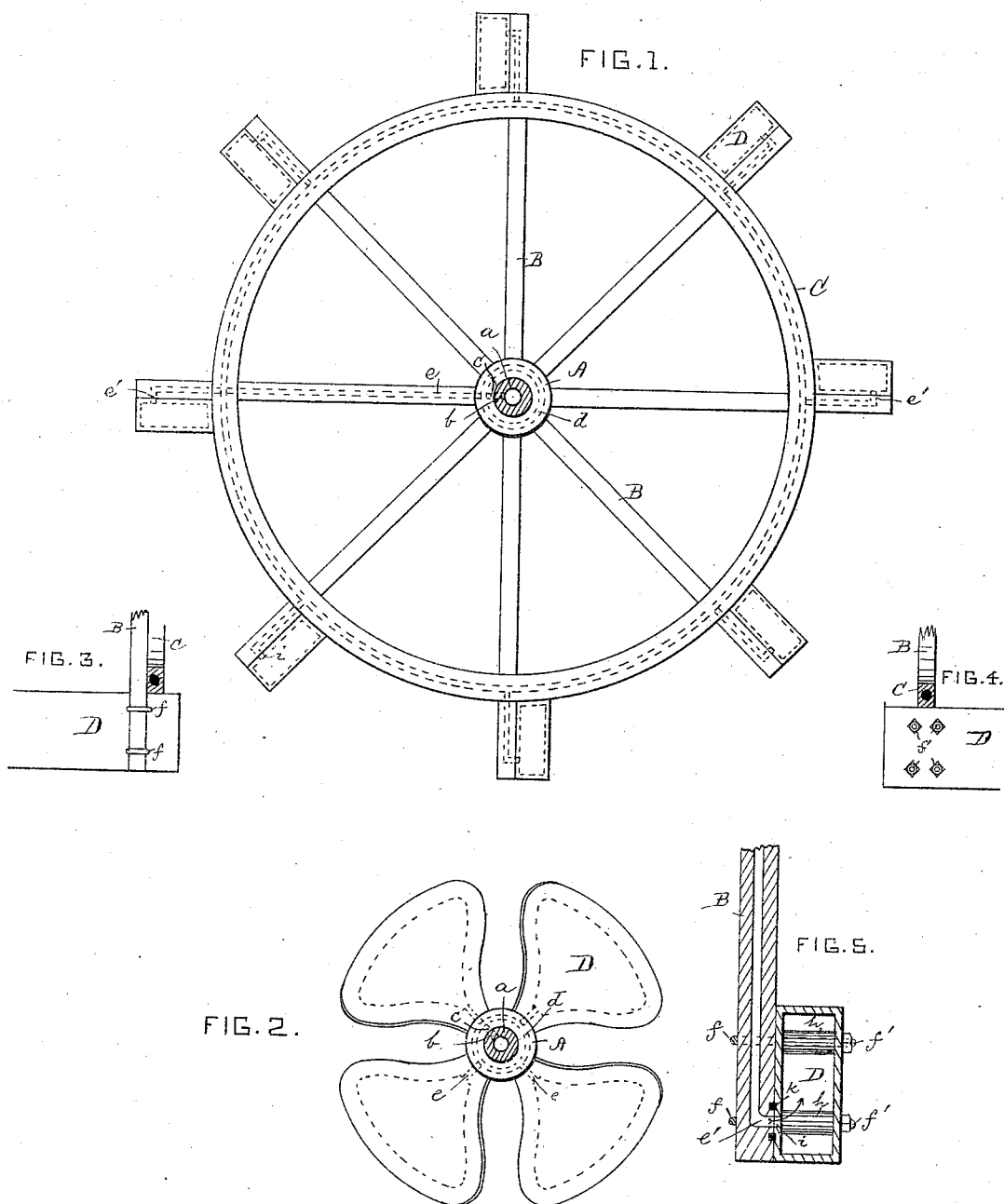
(No Model.)

A. B. KOKERNOT.

MARINE PROPELLING WHEEL.

No. 307,400.

Patented Oct. 28, 1884.



WITNESSES  
*Ally Mahon*  
*Jno. R. Young*

INVENTOR  
*Alexander B. Kokernot*  
*By H. N. Jenkins*  
Attorney

# UNITED STATES PATENT OFFICE.

ALEXANDER B. KOKERNOT, OF NEW ORLEANS, LOUISIANA.

## MARINE PROPELLING-WHEEL.

SPECIFICATION forming part of Letters Patent No. 307,400, dated October 28, 1884.

Application filed December 31, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER B. KOKERNOT, a citizen of the United States, and a resident of the city of New Orleans, parish of Orleans, and State of Louisiana, have invented a certain new and useful Improvement in Marine Propelling-Wheels; and I do hereby declare the following to be a full, clear, and correct description of the same, reference being had to the annexed drawings, making a part of this specification.

This invention relates to a marine propelling-wheel having one or more centers or hubs provided with a series of hollow air-tight paddles or blades, the interiors of which communicate with passage or pipe at the base of same, said passage or pipe provided with an inlet for the admission of compressed air or gas, as hereinafter set forth.

The invention further consists in the combination, with a hollow shaft, of a series of hollow air-tight propelling paddles or blades having an annular passage or pipe at the base of same communicating with the interior of the shaft and with each paddle or blade, so that the latter may be charged through the former with compressed air or gas, as hereinafter described.

My invention also consists in the novel construction, combination, and arrangement of parts, all of which are hereinafter fully described and specifically claimed.

On the drawings, Figure 1 represents my invention as applied to a "paddle-wheel." Fig. 2 the same in its application to a "screw-propeller." Figs. 3, 4, and 5 are detailed views relating to the construction of the paddle-wheel, and showing the manner in which the "paddles" are connected with the "wheel-arms."

Similar letters of reference are employed in the different figures to designate like parts.

The wheel center or hub is marked A, and in Fig. 1 its arms are lettered B, the ring or brace connecting the outer portions of said arms C and the paddles D. As in other paddle-wheels, this is provided with two or more centers, and the same are keyed or otherwise secured on the driving-shaft *a* so as to turn therewith. The driving-shaft, as represented in the drawings, is made hollow with closed ends, and through the wheel-bearing thereof

is a side slot, (shown in dotted lines at *b*,) which communicates with a similar slot, *c*, and an annular passage, *d*, that are formed in and around the hub or center A, and from which communication is had with the interior of the paddles or blades through the passages *e*. In the paddle-wheel these passages *e* are made through the wheel-arms; or, as shown in Fig. 1, the passage may be made through one arm only, the same communicating with an annular space formed in the ring C, and from thence outwardly into the arms and through the edges thereof, as shown at *e'*. Over these edges the paddles D are secured by means of stirrups *f* and nuts *f'*, said paddles being provided with tubes *h* for the passage of the stirrup-prongs, so as to prevent leaks in said places, and with openings *i*, for connecting the passages *e'* with the interior of the paddle. Around the exit of the aforesaid passage and adjacent side of paddle recesses are formed to receive a rubber or other packing, *k*, whereby a perfect joint at said point is insured. The ring C may be formed at one side of the arms, as shown in Fig. 3, and connect with the passage within the same by a side opening, or the said ring may be formed of segments fitted between the arms, as indicated in Fig. 4. The driving-shaft is provided at any convenient point with a stop-cock, through which compressed air or gas can be forced into the paddles or blades in order to increase the buoyancy of the same.

Instead of having passages formed in the shaft and hubs, the said shaft and hubs may be made solid, and an annular pipe be secured around the base or inner ends of the blades or arms. This pipe should be provided with a stop-cock for the introduction of the air or gas, and with branch pipes or openings connecting the same with the passages *e*, for conveying the same thereto.

The merits of this invention consist not only in the buoyancy imparted to the vessel, but to the resistance or opposition which the paddles or blades meet on entering as well as in their whole course through the water, and owing to which resistance the "slip" so common to all propelling-wheels is nearly, if not entirely, overcome.

I am aware that propelling-wheels have heretofore been constructed with hollow air-tight blades or buckets, as in the United States

Patents No. 12,955 and No. 225,493, and that a reactionary wheel has been made with internal pipes or "ports" having open ends or orifices, through which steam or compressed  
5 air is ejected; also, that the hubs of propelling-wheels have been provided with annular cavities having radial vents for the discharge of compressed air over the acting surface of the blades, so as to lubricate the same; and, be-  
10 sides, I am aware that steam has been applied through a hollow paddle-shaft and pipe-connections to an annular pipe or channel located in the base of gearing applied to the side of the periphery of a paddle-wheel, in order to  
15 prevent the freezing of water thereon; hence I do not claim any of the said features as new; but

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

20 1. A marine propelling-wheel having one

or more centers or hubs provided with a series of hollow air-tight paddles or blades, and an annular passage at the base of same and communicating with the interior thereof, said annular passage provided with an inlet, substantially as and for the purpose set forth. 25

2. The combination of the hollow air-tight paddles D, provided with openings *i*, adapted to fit over the openings *e'* in the edge of the wheel-arms, as described, the adjacent sides  
30 of the paddles and arms provided with recesses and packing, substantially as described, and for the purpose set forth.

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

ALEXANDER B. KOKERNOT.

Witnesses:

W. R. HARRISON,  
J. N. MÜLLER.