

(Model.)

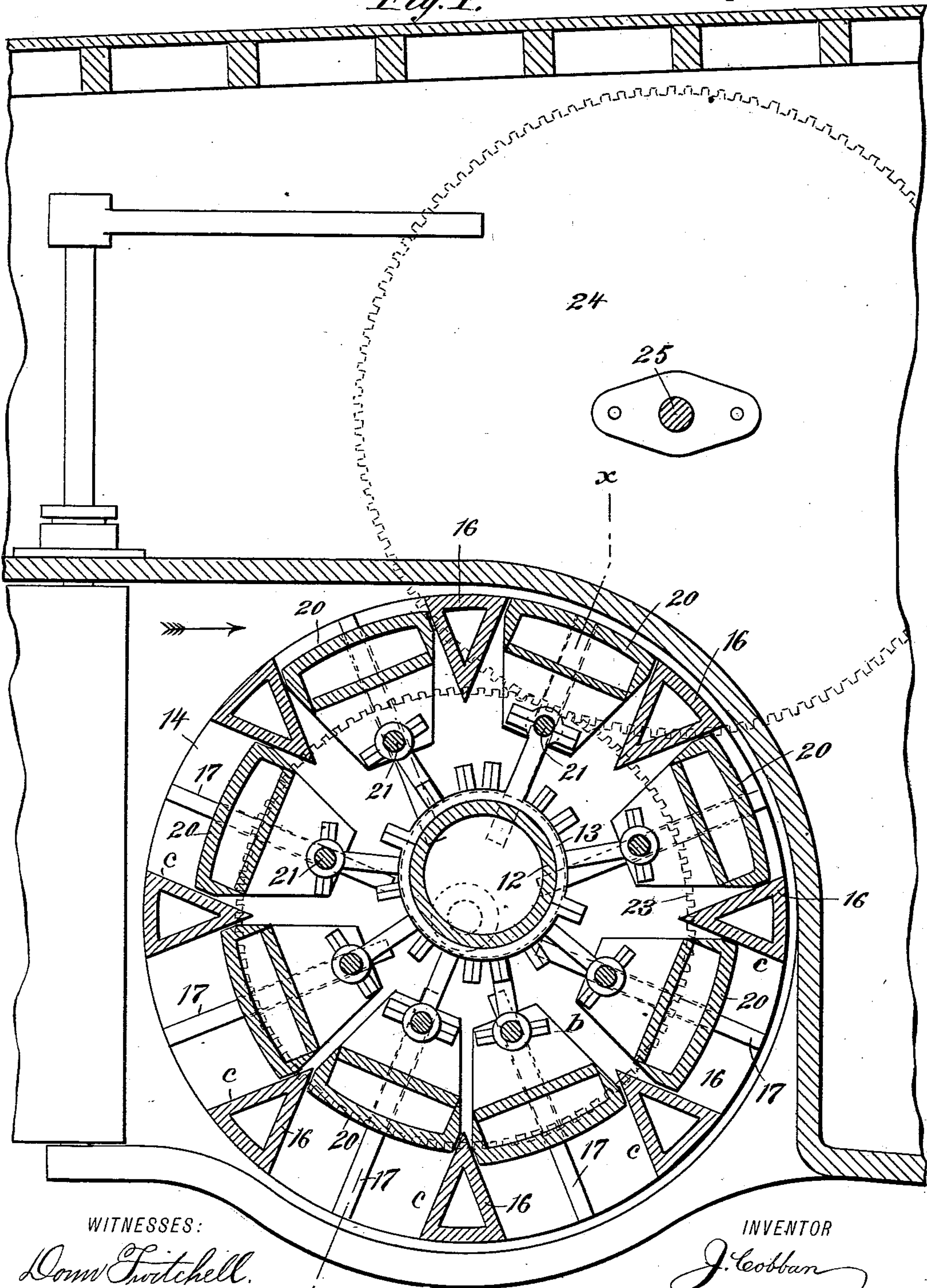
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J. COBBAN.
PADDLE WHEEL.

No. 424,704.

Patented Apr. 1, 1890.

Fig. 1.



WITNESSES:

Dom Twitchell.
C. Sedgwick

INVENTOR

J. Cobban
BY *Munn & Co.*

ATTORNEY

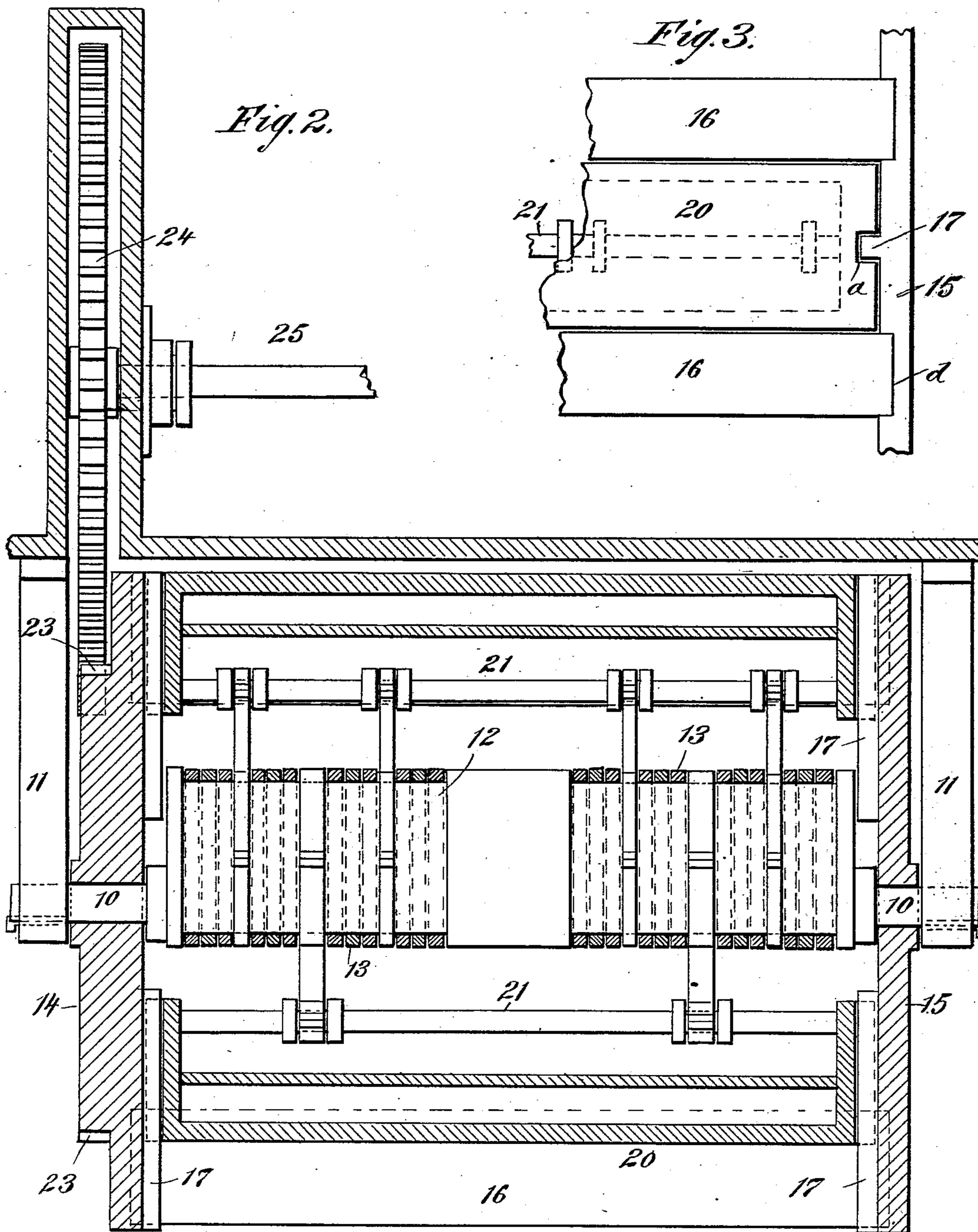
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UNITED STATES PATENT OFFICE.

JAMES COBBAN, OF BROOKLYN, NEW YORK.

PADDLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 424,704, dated April 1, 1890.

Application filed April 11, 1889. Serial No. 306,821. (Model.)

To all whom it may concern:

Be it known that I, JAMES COBBAN, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Propeller, of which the following is a full, clear, and exact description.

This invention relates to propellers, the object of the invention being to provide a propeller which may be mounted beneath the surface of the water and which may be disposed either at the side or at the stern of the vessel; and to the end named the invention consists, essentially, of a wheel provided with buckets, plungers that are mounted between the buckets, and mechanism which acts to force the plungers outward, so that their peripheral faces will at times be in alignment with the general peripheral face of the wheel, all as will be hereinafter more fully explained, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a cross-sectional view of a propeller-wheel embodying my invention. Fig. 2 is a sectional view on line *x x* of Fig. 1, and Fig. 3 is a plan view of a portion of the peripheral face of the propeller-wheel.

In the drawings, 10 represents a shaft which is mounted in fixed bearings 11. The shaft 10 carries an eccentric-section 12, upon which there are mounted a number of eccentric-straps 13, said straps being employed for a purpose which will be hereinafter explained. Upon the shaft 10 there are loosely mounted two disks 14 and 15, and to these disks the buckets 16 are rigidly connected. Radial ribs or flanges 17 are formed upon the plates 14 and 15 between the buckets, which said ribs or flanges serve as guides for plungers or filling-blocks 20, the ends of said plungers or filling-blocks being recessed at *a* to receive the ribs or flanges 17. Each of the plungers or filling-blocks carries a shaft 21, and to the shafts 21, I connect the eccentric-straps 13, care being taken to so distribute the eccen-

tries that each one of the plungers or filling-blocks will be adequately supported. 50

In the construction shown in the drawings I have represented a wheel wherein there are eight buckets and eight plungers or filling-blocks, and upon the eccentric 12, I have mounted thirty eccentric-straps, connecting all of the filling-blocks or plungers with four of the eccentric-straps, except the plunger that is shown below the eccentric in Fig. 2, such plunger or filling-block being connected to but two of the eccentric-straps; but such straps, it will be observed, have a broader bearing-face upon the eccentric 12 than do the other eccentric-straps. 55 60

In order that the filling-blocks or plungers may be drawn inward toward the eccentric 12, I cut away their end plates, as shown at *b*, thus providing for the drawing of said plungers or filling-blocks to the position in which they are shown beneath the eccentric in Fig. 1. Any proper means may be employed for imparting a rotary motion to the disks 14 and 15; but in practice I prefer to form one or the other of the disks with a gear, as 23, which said gear is engaged by a gear 24, carried by a driving-shaft 25. 65 70 75

From the construction above described it will be seen that as the propeller is advanced in the direction of the arrow shown in connection therewith in Fig. 1 the eccentric (the main body of which is above the shaft 10) will act upon the plungers or filling-blocks in a manner such that said plungers will be drawn upward, and the forward faces *c* of the bucket 16, below the shaft, will be free to act upon the water within which the propeller is revolved and in so bearing upon the water will force the vessel forward; but the forward faces of the buckets that are above the shaft, which faces would act upon the water to retard the forward movement of the vessel, in connection with which the propeller is arranged, will be covered by the plungers or filling-blocks, as will be readily understood from an inspection of Fig. 1. 80 85 90

In the specific construction shown in the drawings I have represented the ends of the 95

buckets 16 as resting within recesses *d*, that are formed in the inner side faces of the disks 14 and 15; but any proper means for connecting the buckets to the disks might be employed.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a propeller, the combination, with a series of buckets and a means for revolving the same, of a series of reciprocating filling-blocks or plungers, a central fixed eccentric about which the buckets are revolved, and connections between the eccentric and the filling-blocks or plungers, substantially as described.

2. In a propeller, the combination, with a pair of disks or wheels, of a series of buckets carried thereby, a series of plungers or reciprocating filling-blocks mounted between the buckets and guided upon the wheels or disks,

a central eccentric which extends from disk to disk, and connections between the eccentric and the filling-blocks or plungers, substantially as described.

3. In a propeller, the combination, with a rigidly-mounted shaft provided with an eccentric-section, of disks or wheels loosely mounted upon said shaft, buckets carried by the disks, means for revolving the disks, filling-blocks or plungers guided upon the disks and arranged between the buckets, eccentric-straps mounted upon the eccentric-shaft section, and connections between the eccentric-straps and the filling-blocks or plungers, substantially as described.

JAMES COBBAN.

Witnesses:

EDWARD KENT, Jr.,
C. SEDGWICK.