

No. 773,006.

PATENTED OCT. 25, 1904.

C. G. DYOTT.

MECHANISM FOR THE PROPULSION OF VESSELS.

APPLICATION FILED JAN. 21, 1904.

NO MODEL.

Fig. 1

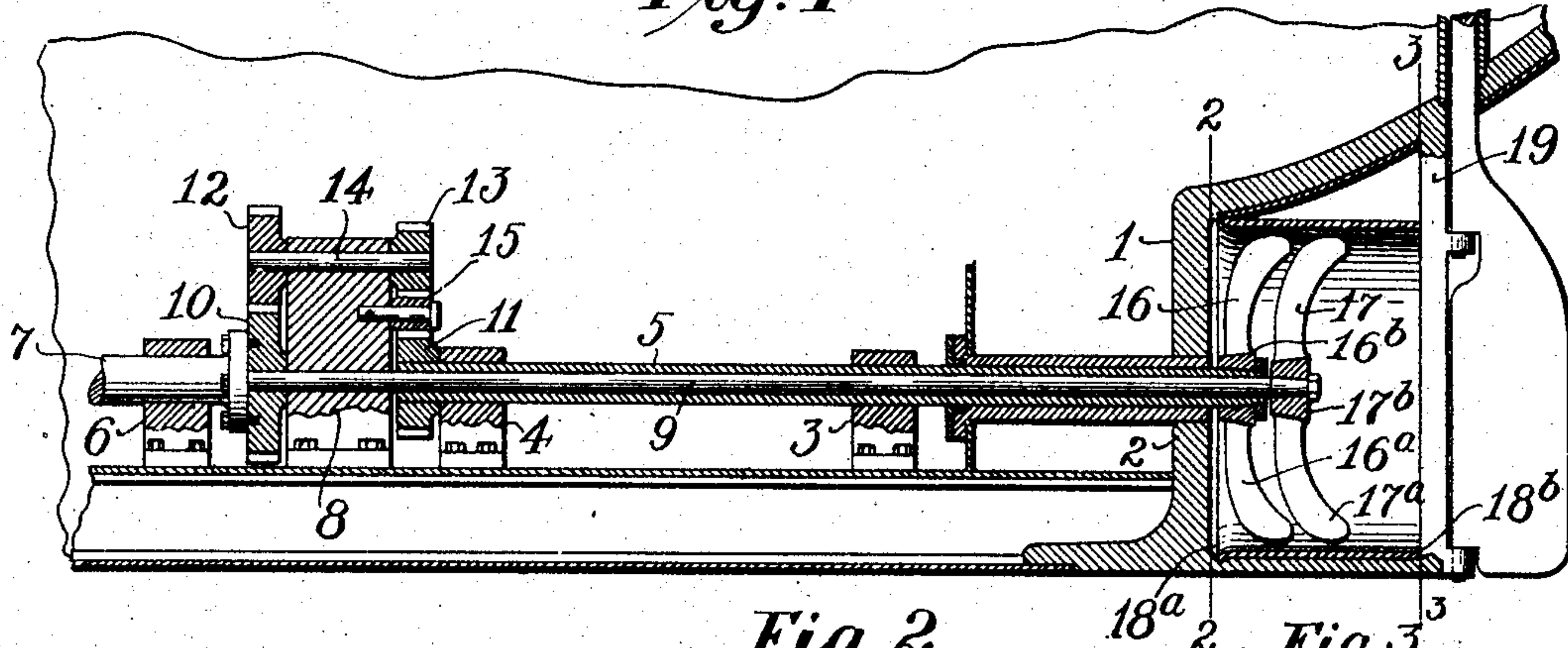


Fig. 2

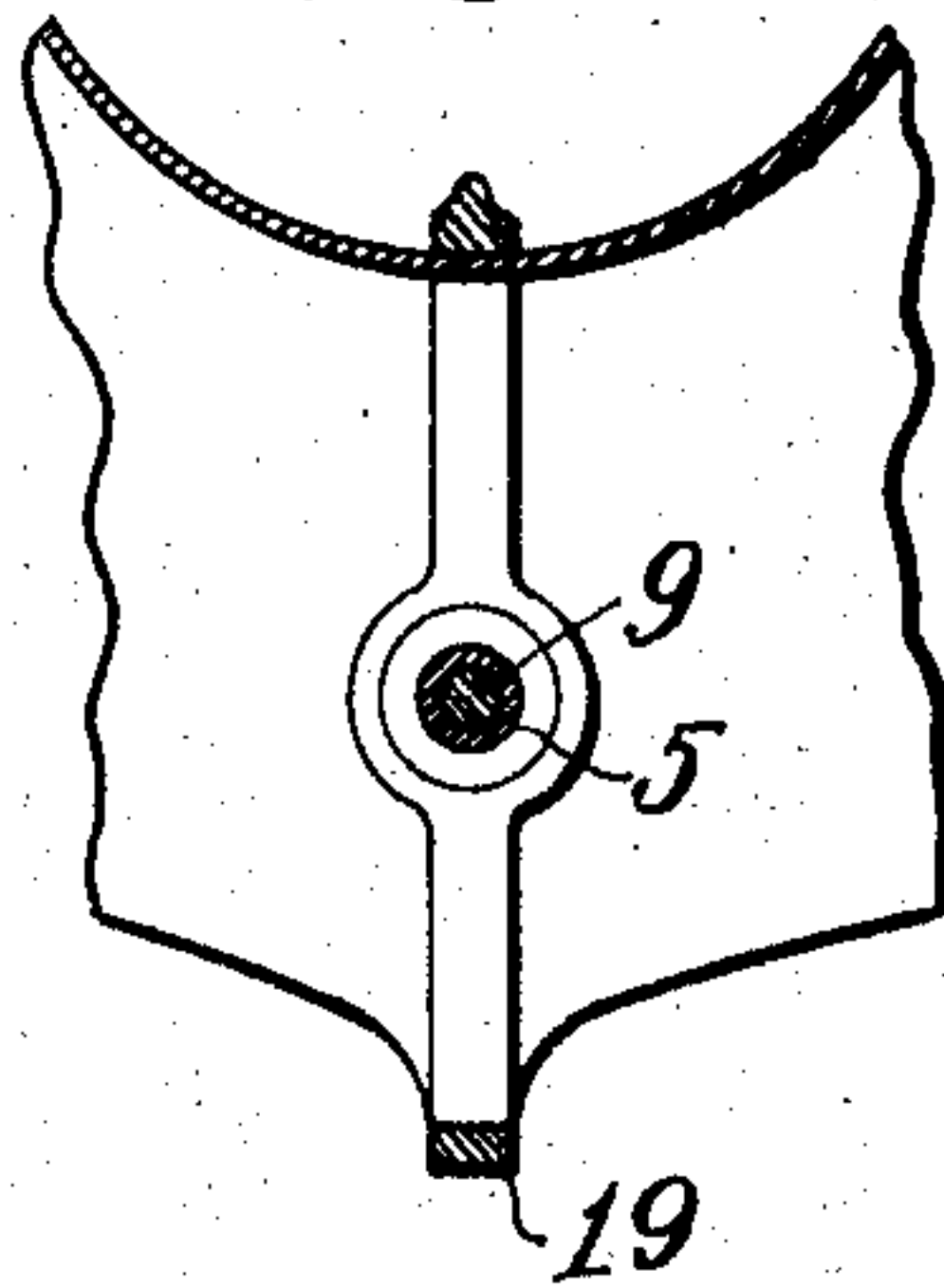


Fig. 3

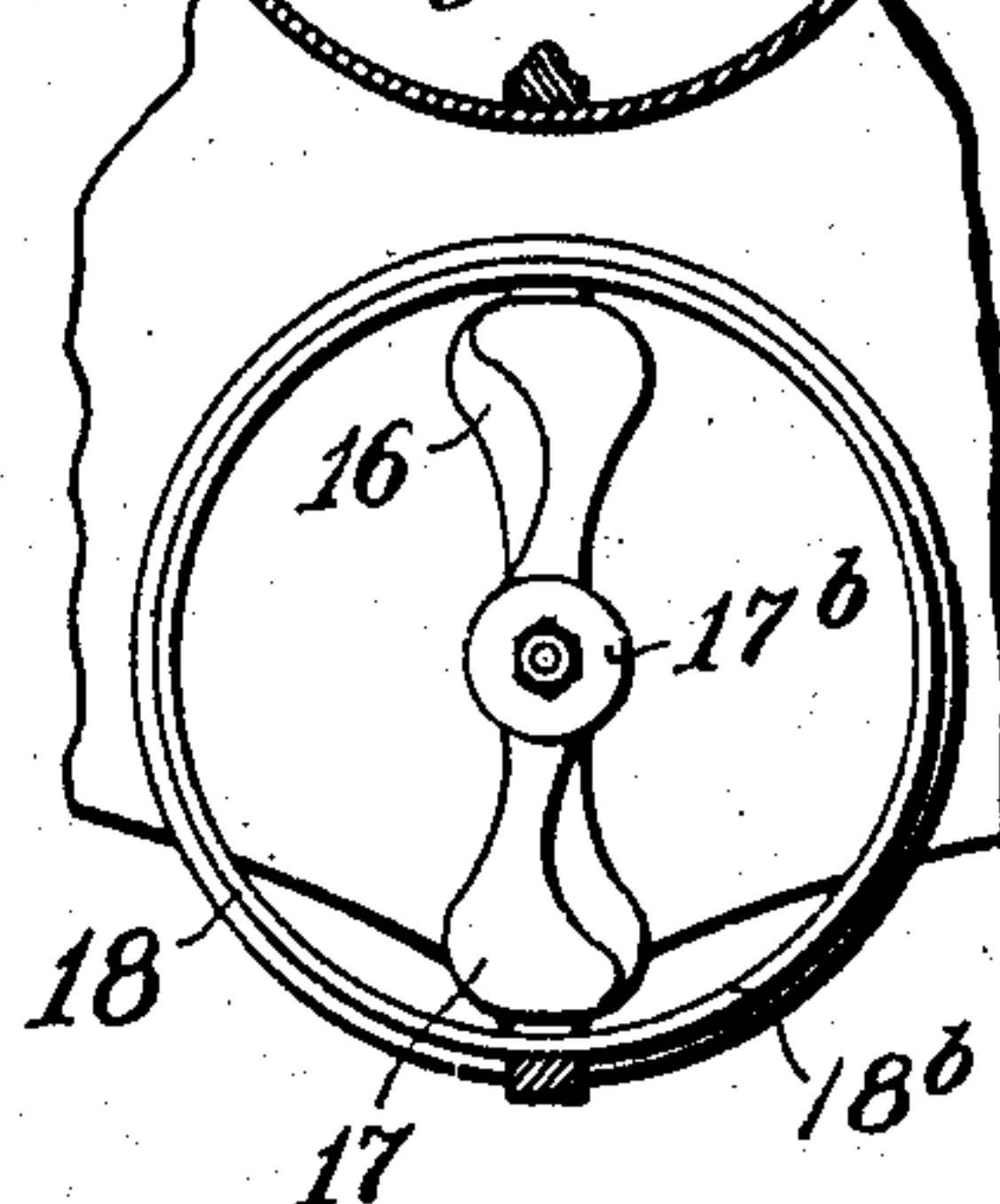


Fig. 5

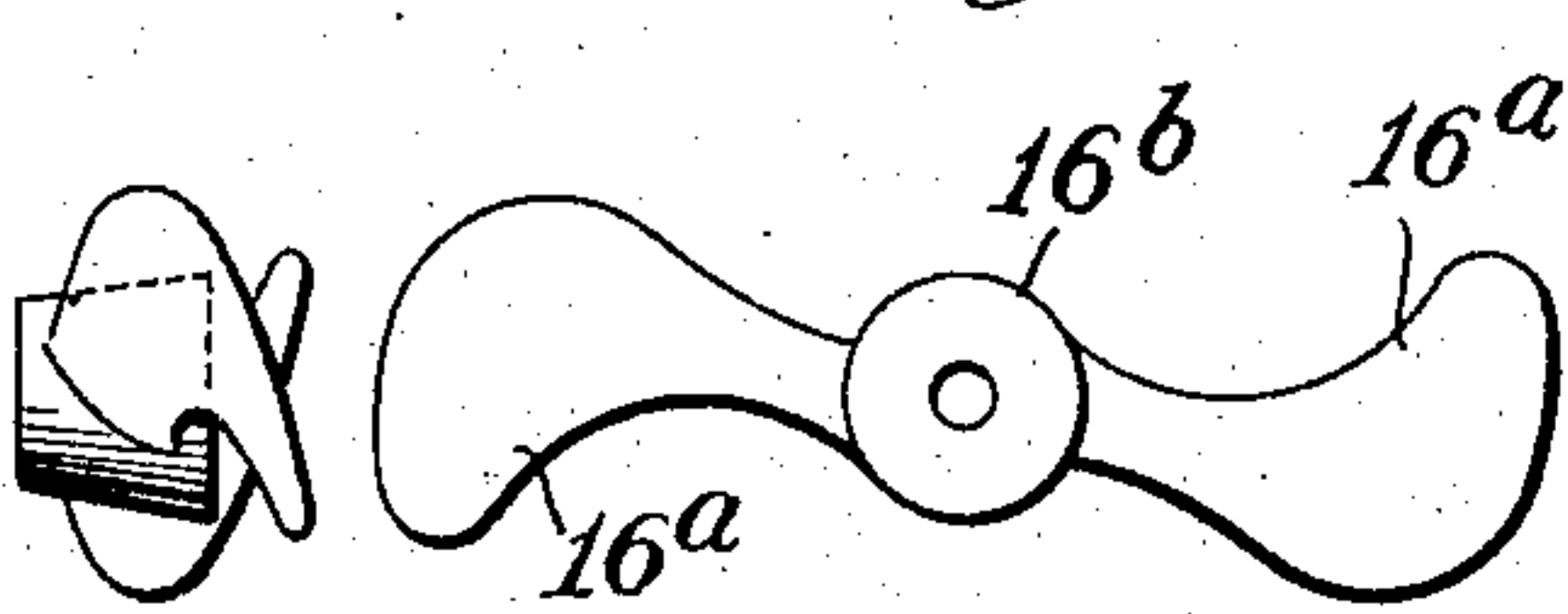


Fig. 4

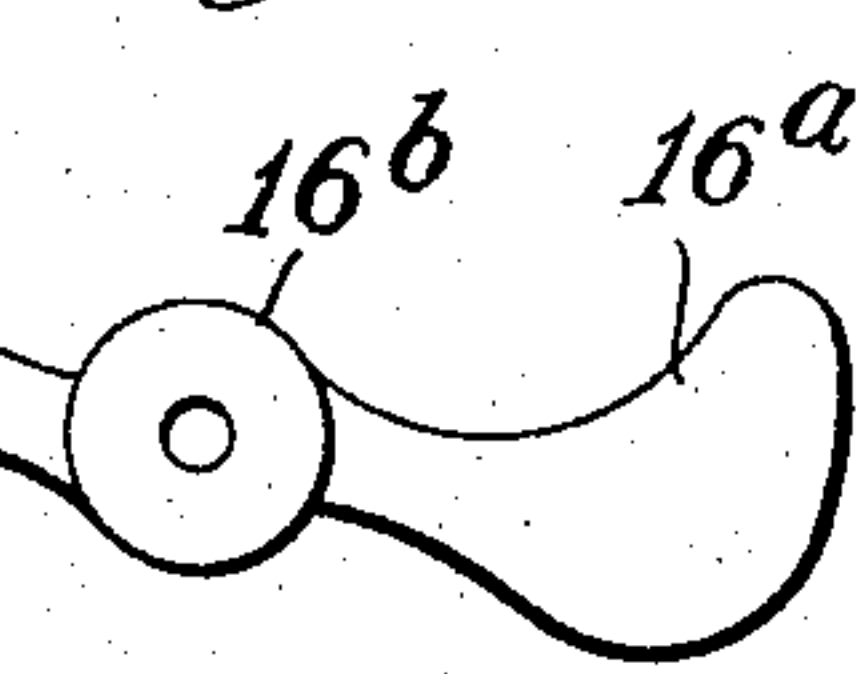


Fig. 7

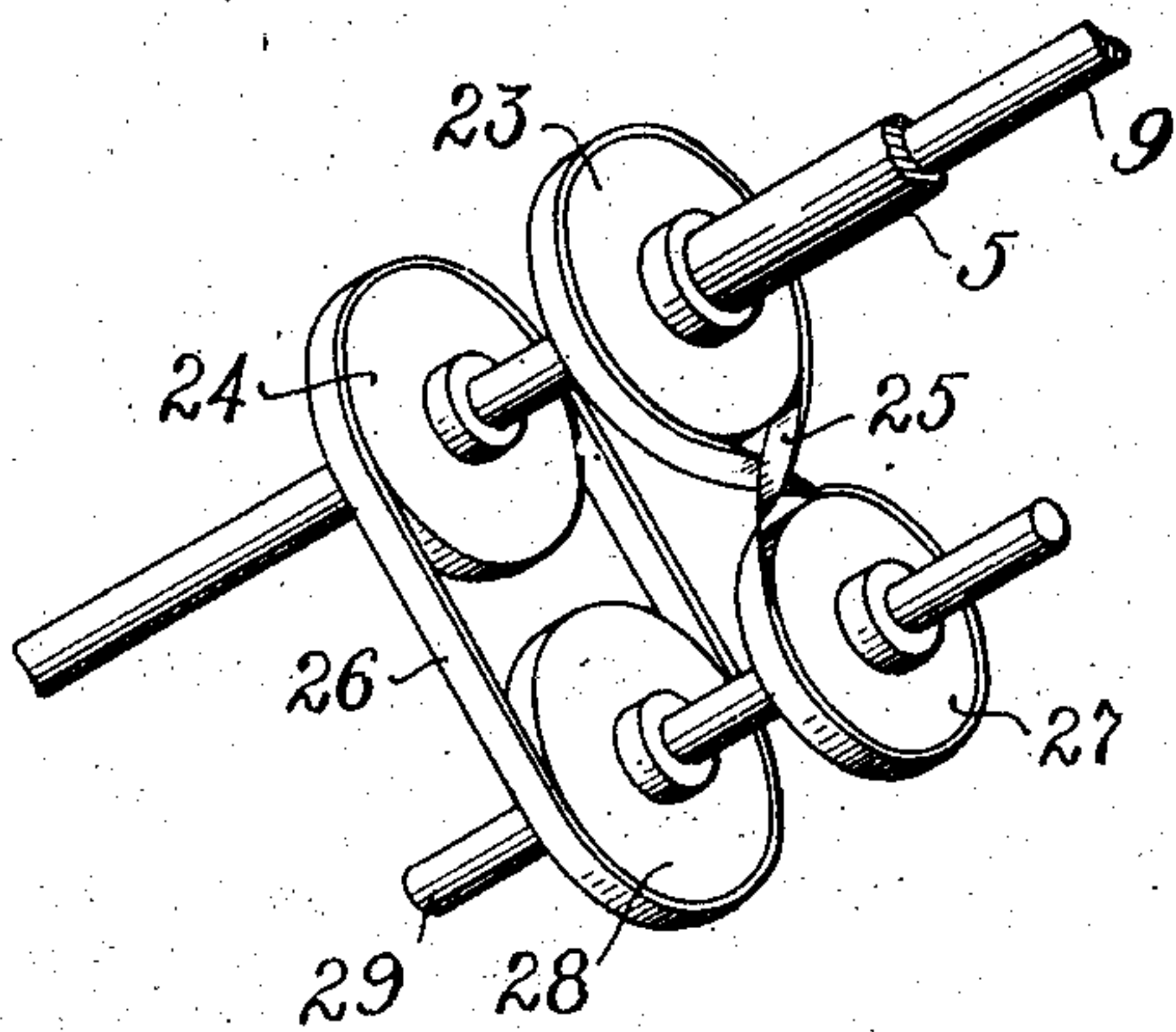
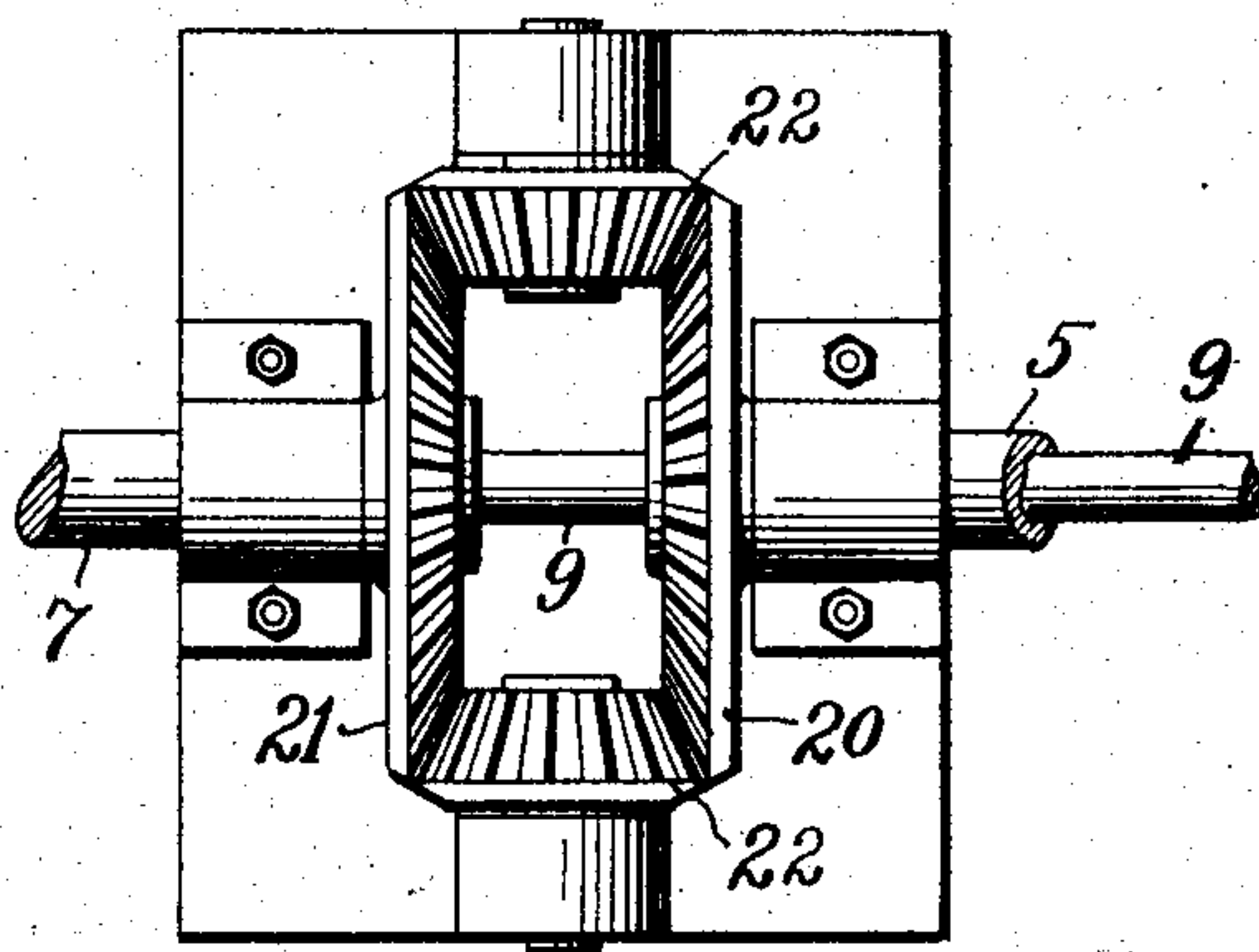


Fig. 6



WITNESSES:

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MECHANISM FOR THE PROPULSION OF VESSELS.

SPECIFICATION forming part of Letters Patent No. 773,006, dated October 25, 1904.

Application filed January 21, 1904. Serial No. 190,084. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. DYOTT, a citizen of the United States, and a resident of the city of New York, State of New York, have invented certain Improvements in Mechanism for the Propulsion of Vessels, of which the following is a specification.

This invention has as its leading objects to obtain the maximum propulsion with the minimum expenditure of power, to reduce the centrifugal or lateral force incidental to propulsion and increase the resultant force in the direction of travel, to reduce the lateral wave motion or wash, and throw the water backward into the trough left by the vessel.

In carrying out the invention the vessel is provided with two oppositely-pitched propellers journaled on a common axis and revolved in opposite directions, preferably within an open tubular casing extending in the direction of travel, the propellers being constructed to catch the water with the least possible resistance and the highest possible resultant force in the direction of movement, to neutralize the centrifugal effects of each other, and to supplement each other in effecting a high resultant propelling force.

The nature and characteristic features of the improvements will more fully appear by reference to the following description and the accompanying drawings in illustration thereof, of which—

Figure 1 represents a sectional side elevation of an embodiment of the invention. Fig. 2 represents a view taken on the line 2 2 of Fig. 1. Fig. 3 represents a sectional view taken on the line 3 3 of Fig. 1. Fig. 4 represents a front elevation of a propeller. Fig. 5 represents a side elevation of a propeller viewed in the line of the blades. Fig. 6 represents a modified form of gearing for driving the propeller-shafts, and Fig. 7 represents a further modification in the form of belts and pulleys for driving the propeller-shafts.

Referring to the drawings, the hull 1 is provided with the bearing-blocks 2, 3, and 4, in which the hollow propeller-shaft 5 is journaled, with the bearing-block 6, in which the driving-shaft 7 is journaled, and with the

bearing-block 8, in which the propeller-shaft 9 is journaled, the shaft 9 also being journaled in the shaft 5 and coupled to the driving-shaft 7. Fixed to the shaft 9 is the gear-wheel 10, which is connected with the gear-wheel 11, fixed on the shaft 5 through the gears 12 and 13, fixed on the shaft 14, and the idler 15, the gears 12, 13, and 15 being supported on shafts which are mounted or journaled in the bearing-block 8. By this mechanism the shafts 5 and 9 and the respective propellers 16 and 17 fixed thereto are driven in opposite directions.

The propellers have their respective blades 16^a and 17^a fixed to hubs 16^b and 17^b of cone-frustum form, the smaller faces of the frusta projecting forward, while the blades project backward therefrom. The respective propellers have their blades pitched in opposite directions, each blade having its outer portion turned to catch the water in advance of its inner portion in its forward motion of rotation, so as to sweep the water back in the direction of the axis of revolution.

A tubular or cylindrical casing 18, carried by the supports 19 and having its ends open, surrounds the propellers. The tubular inlet 18^a is flared to gather water as it passes there-through, and the propellers draw in water at the forward opening as they throw it back through the outlet 18^b.

The driving mechanism for rotating the propeller-shafts may be variously modified. As shown in Fig. 6, the propeller-shafts 5 and 9 may have fixed thereto the respective bevel-gears 20 and 21, connected by the idlers 22, through which the driving-shaft 7 communicates opposite movements to the propeller-shafts. As shown in Fig. 7, the propeller-shafts 5 and 9 may have fixed thereto the pulleys 23 and 24, connected by the belts 25 and 26 with the pulleys 27 and 28, fixed on the shaft 29, the belt 25 being twisted to turn the pulley 23 in the reverse direction to the pulley 24.

These improvements afford not only improved means of propulsion, but the invention is especially applicable for use on vessels traversing canals or narrow channels where

the banks are liable to be injuriously affected by the usual wash.

Having described my invention, I claim—

1. A pair of propellers having oppositely-
5 pitched blades revolving on a common axis, said blades projecting rearwardly relative to the direction of translation and forwardly relatively to the direction of rotation, in combination with mechanism for revolving said propellers in opposite directions, substantially as
10 specified.

2. A pair of propellers having oppositely-pitched blades revolving on a common axis, said blades projecting rearwardly relatively

to the direction of translation and forwardly 15 relatively to the direction of rotation, in combination with mechanism for revolving said propellers in opposite directions, and a casing surrounding said propellers, substantially as specified. 20

In testimony whereof I have hereunto set my hand, this 19th day of January, A. D. 1904, in the presence of the subscribing witnesses.

CHAS. G. DYOTT.

In presence of—

THOMAS S. GATES,

UTLEY E. CRANE, Jr.