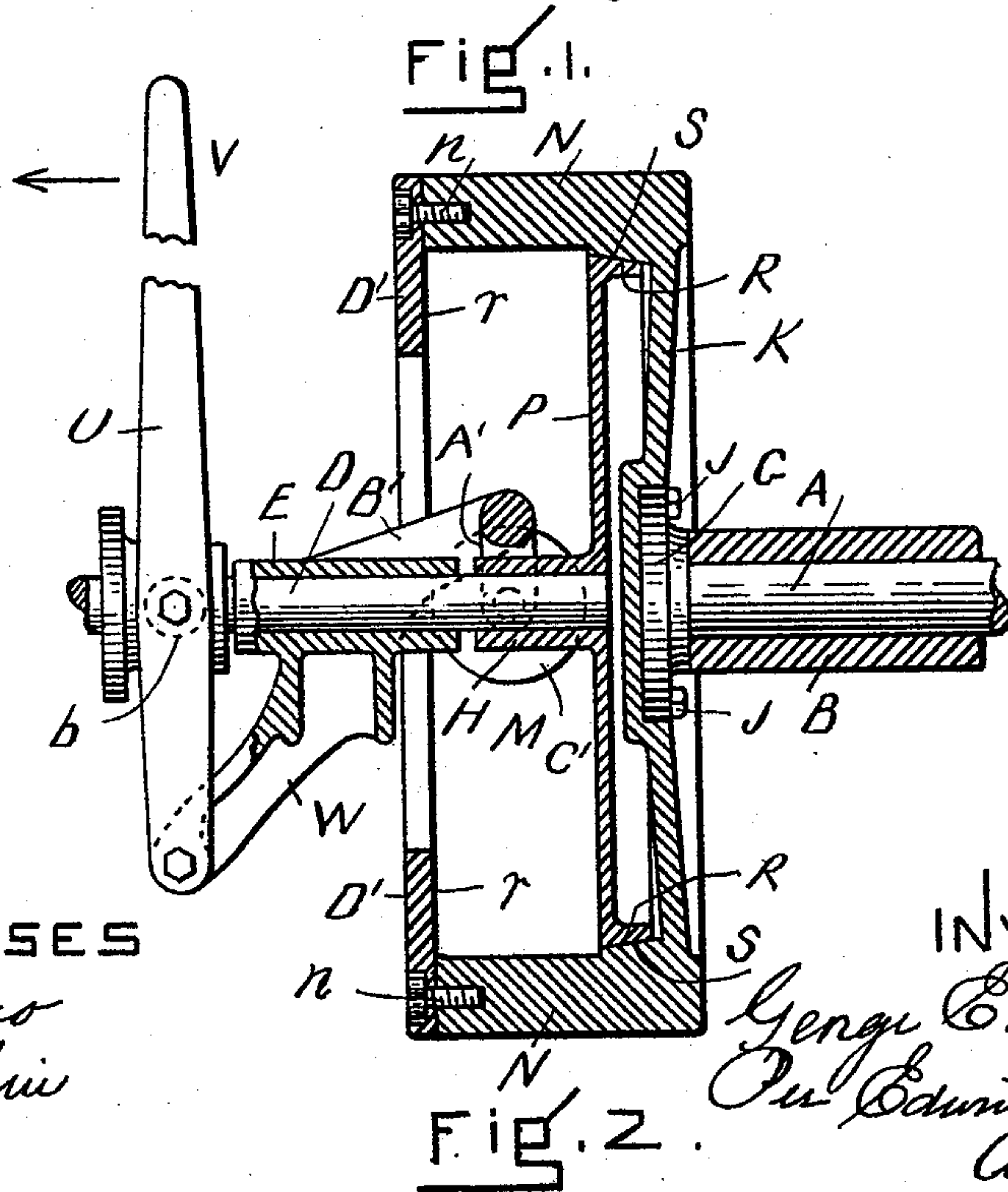
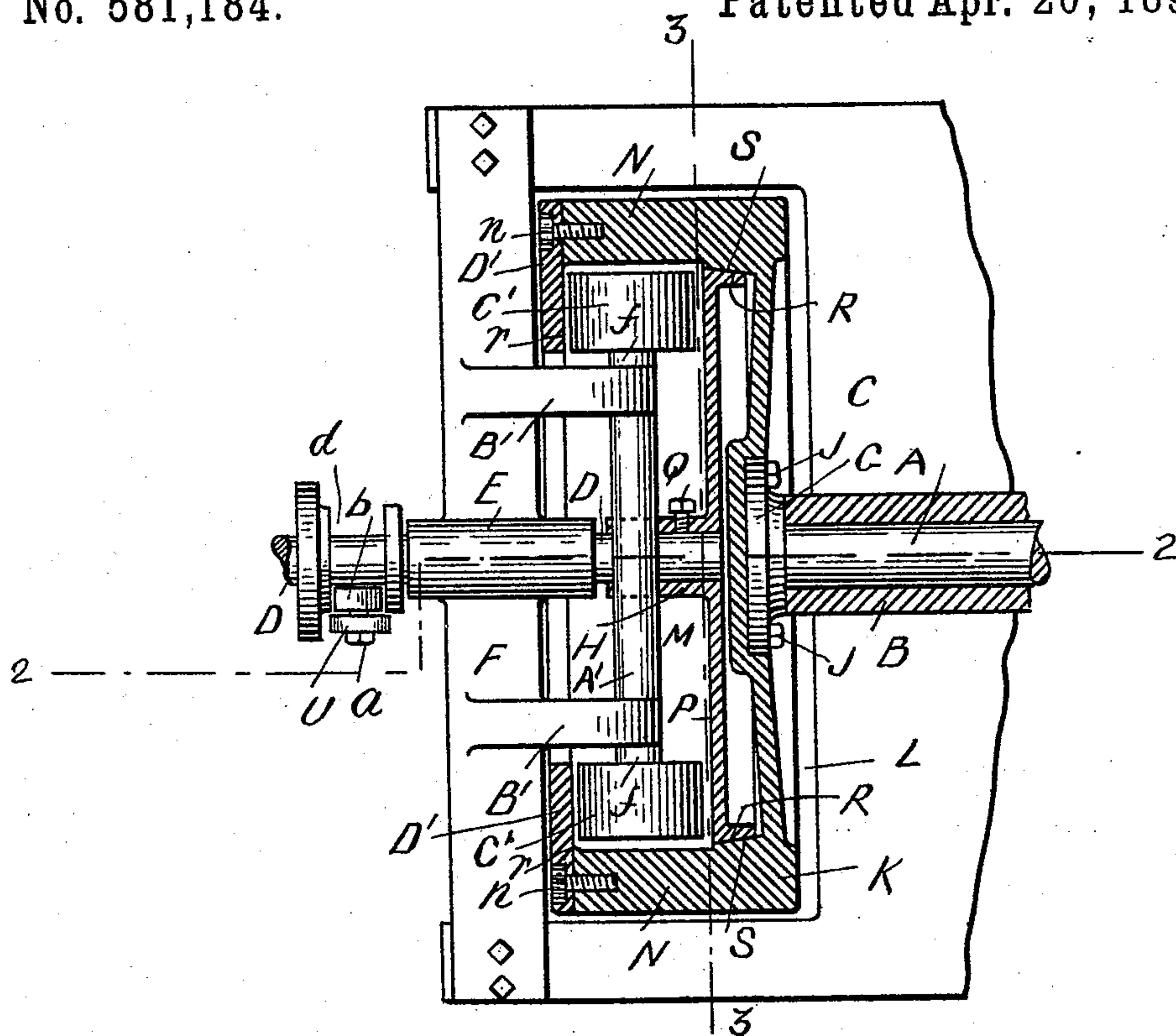


2 Sheets—Sheet 1.

DEVICE FOR REVERSING MOTION OF PROPELLER WHEELS, &c.

Patented Apr. 20, 1897.



WITNESSES

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(No Model.)

2 Sheets—Sheet 2.

G. E. TREGURTHA.

DEVICE FOR REVERSING MOTION OF PROPELLER WHEELS, &c.

No. 581,184.

Patented Apr. 20, 1897.

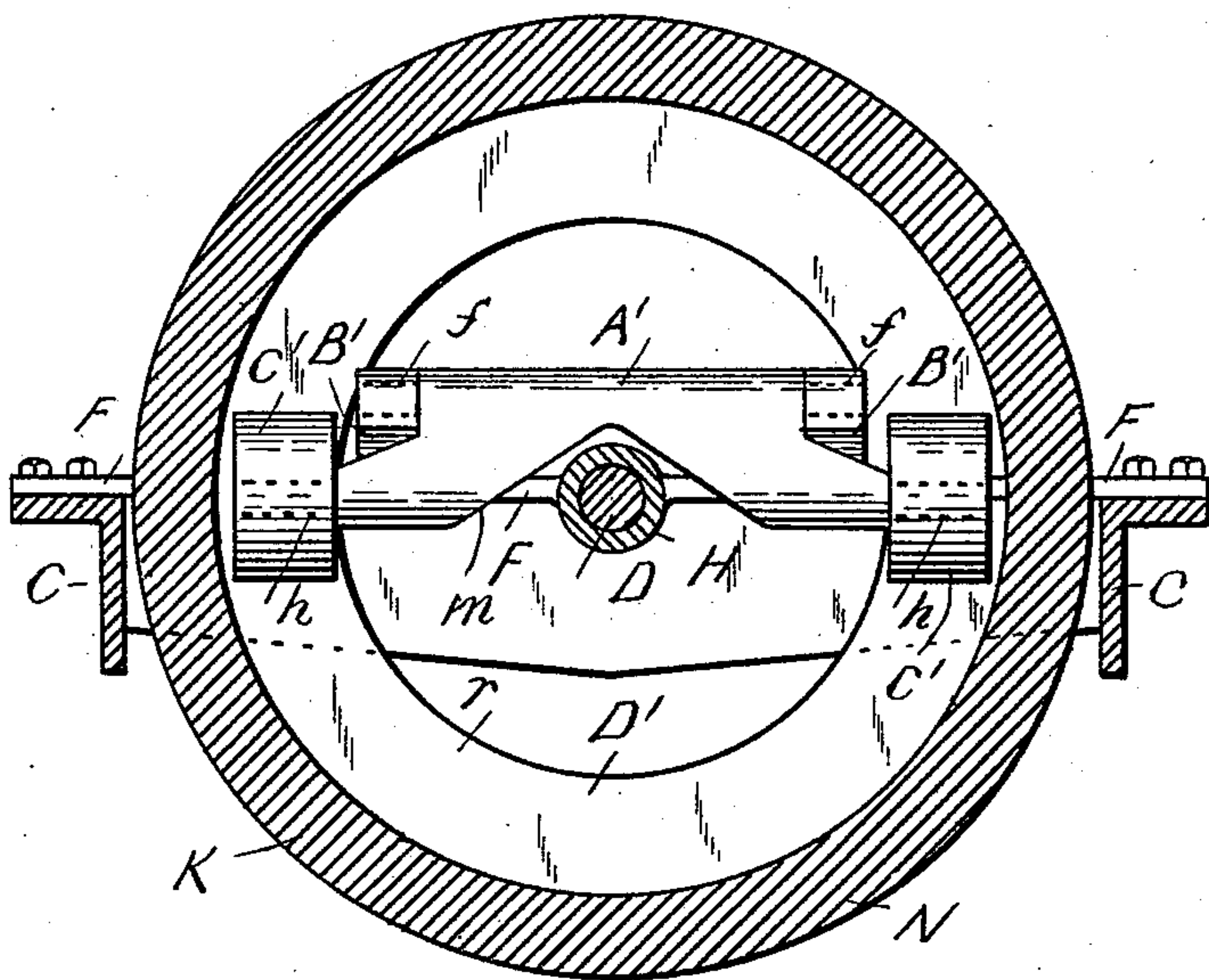


Fig. 3.

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# UNITED STATES PATENT OFFICE.

GEORGE E. TREGURTHA, OF MALDEN, MASSACHUSETTS.

## DEVICE FOR REVERSING MOTION OF PROPELLER-WHEELS, &c.

SPECIFICATION forming part of Letters Patent No. 581,184, dated April 20, 1897.

Application filed April 29, 1896. Serial No. 589,565. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE E. TREGURTHA, of Malden, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Devices for Reversing Motion of Propeller-Wheels, &c., of which the following is a full, clear, and exact description.

This invention relates more particularly to reversing the motion of a propeller-wheel of a boat or vessel without changing or altering the movement of the engine; and the invention consists in combination, with the shaft of an engine of a boat or vessel or other motive power and the shaft of the propeller-wheel, of means for connecting said shafts together for operation in such manner as to reverse or change the motion of the latter shafts, as desired, independent of the movement of the shaft of the engine or other motor, all substantially as hereinafter fully described, reference being had to the accompanying sheets of drawings, in which is illustrated the present invention as applied to a steam-engine shaft and propeller-shaft of a boat or vessel, in which—

Figure 1 is a central vertical section. Fig. 2 is a central horizontal section on line 2 2, Fig. 1; and Fig. 3 is a vertical section on line 3 3, Fig. 1.

In the drawings, A represents a shaft adapted to turn in bearings B in the engine-bed C of the boat or vessel, which shaft is connected to the engine for turning the same in the usual manner.

D is the propeller-wheel shaft adapted to turn in a bearing E, secured to an upright F of the bed C, to which shaft the propeller-wheel (not shown) can be attached in the usual manner, this propeller-shaft being in the same axial line as the engine-shaft.

The engine-shaft has on its end a circular flange G, to which is centrally secured by its side by bolts J the fly-wheel K, which is within an opening L in the engine-bed and revolves with the engine-shaft. The propeller-wheel shaft D extends into a chamber M of the fly-wheel, formed by its rim N, and has secured thereon by its collar H having a set-screw Q, a circular plate or disk P, this disk or clutch-plate having a beveled circumferential edge R, adapted to fit a corresponding beveled cir-

cular seat S on the inner side of the rim N of the fly-wheel, as shown in Figs. 1 and 2.

The propeller-wheel shaft D is arranged to slide longitudinally back and forth within certain limits in its bearing, and for such movement a lever U is provided having a handle V and pivoted by one end, as a, to an arm W of the bearing E, and having pivoted at its side a roll b, which is arranged to freely turn in a circumferential groove d in the propeller-wheel shaft D.

A' is a plate in the chamber M, having journals f, by which it is adapted to turn or rock, respectively, in bearings in two arms B', secured to or made integral with the upright F, this plate hanging down therefrom and having on its lower part two end journals or pins h, on each of which is arranged to rotate a roll C'. As this plate hangs over the collar H of the friction clutch or disk P, it is cut away on its under side, as shown in Fig. 3 at m, to not touch or interfere with it.

Secured by screws n to the outer side of the fly-wheel K is a ring plate D' and of a width sufficient to extend over the chamber M for the rolls C' to bear against its inner side r when in position therefor.

When the clutch-disk is in its seat, as shown in Figs. 1 and 2, the rolls C' are free of and do not touch either the clutch-disk P or the ring plate D', or if they do, in these conditions they have no effect, as the rolls then are practically idlers. The engine-shaft A revolving the fly-wheel is turned with it, and with clutch or disk P in its seat, as shown in Figs. 1 and 2, motion is communicated through the disk P to the propeller-wheel shaft D in one direction, and that is for the boat to go forward, and if desired to reverse the motion of the propeller-wheel for the boat to move backward I move the lever U in the direction of the arrow, Fig. 2, which will move the propeller-shaft in such direction and the clutch-disk P away from its seat in the fly-wheel and pressing and binding between it, the clutch-disk, and the ring plate D' of the fly-wheel the rolls C', and the instant such pressure occurs the movement of the fly-wheel by the pressure of its ring plate thereon causes the rolls to revolve, and they in turn communicate motion to the clutch-disk P of the propeller-shaft, but in reverse direction



to what it had been revolving, so that then the boat will move backward, and if desired to have the boat again go forward the lever is reversed or moved back, which moves the  
5 clutch-disk to again engage with its seat in the fly-wheel, whereby the fly-wheel acts directly upon the disk to turn it and its propeller-wheel shaft in the proper direction for such forward movement. Thus by simply  
10 moving the lever back and forth the propeller-wheel will be turned in one direction or the other, as the case may be, without reversing or changing the movements of the engine.

Having thus described my invention, what  
15 I claim is—

1. In combination, an engine-shaft, a propeller-wheel shaft in the same axial plane, a circular bearing or seat on the engine-shaft, a circular plate or disk on the propeller-shaft  
20 arranged to engage with the engine-shaft bearing or seat, a bearing-plate connected to the engine-shaft, a movable support between

the plate or disk and engine-bearing plate, rolls on the movable support and means for moving the roll-support and the propeller- 25 shaft plate or disk.

2. In combination, an engine-shaft, a propeller-wheel shaft in the same axial line, a circular bearing or seat on the engine-shaft, a circular plate or disk on the propeller-shaft 30 arranged to engage with the engine-shaft bearing or seat, a bearing-plate connected to the engine-shaft, a swinging support between the plate or disk and engine-shaft bearing-plate, rolls on the swinging support and 35 means for moving the roll-support and the plate or disk.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GEORGE E. TREGURTHIA.

Witnesses:

EDWIN W. BROWN,  
LEONA C. ARNO.