

No. 637,959.

Patented Nov. 28, 1899.

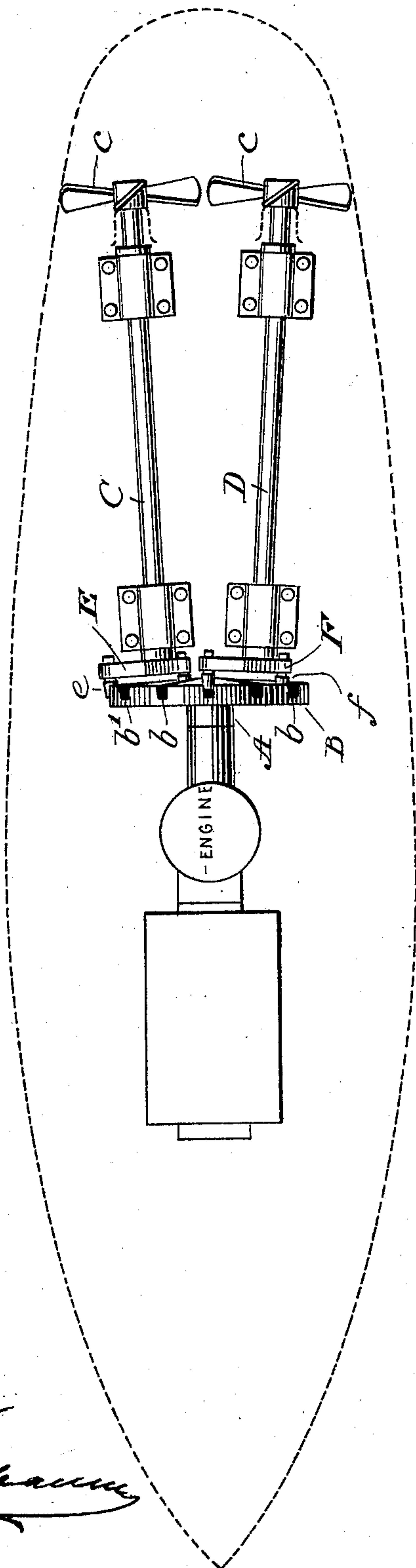
H. H. FEFEL.
MEANS FOR PROPELLING BOATS.

(Application filed Mar. 10, 1898. Renewed Apr. 29, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



WITNESSES:

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Wm. H. H. Fefel

INVENTOR

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ATTORNEY

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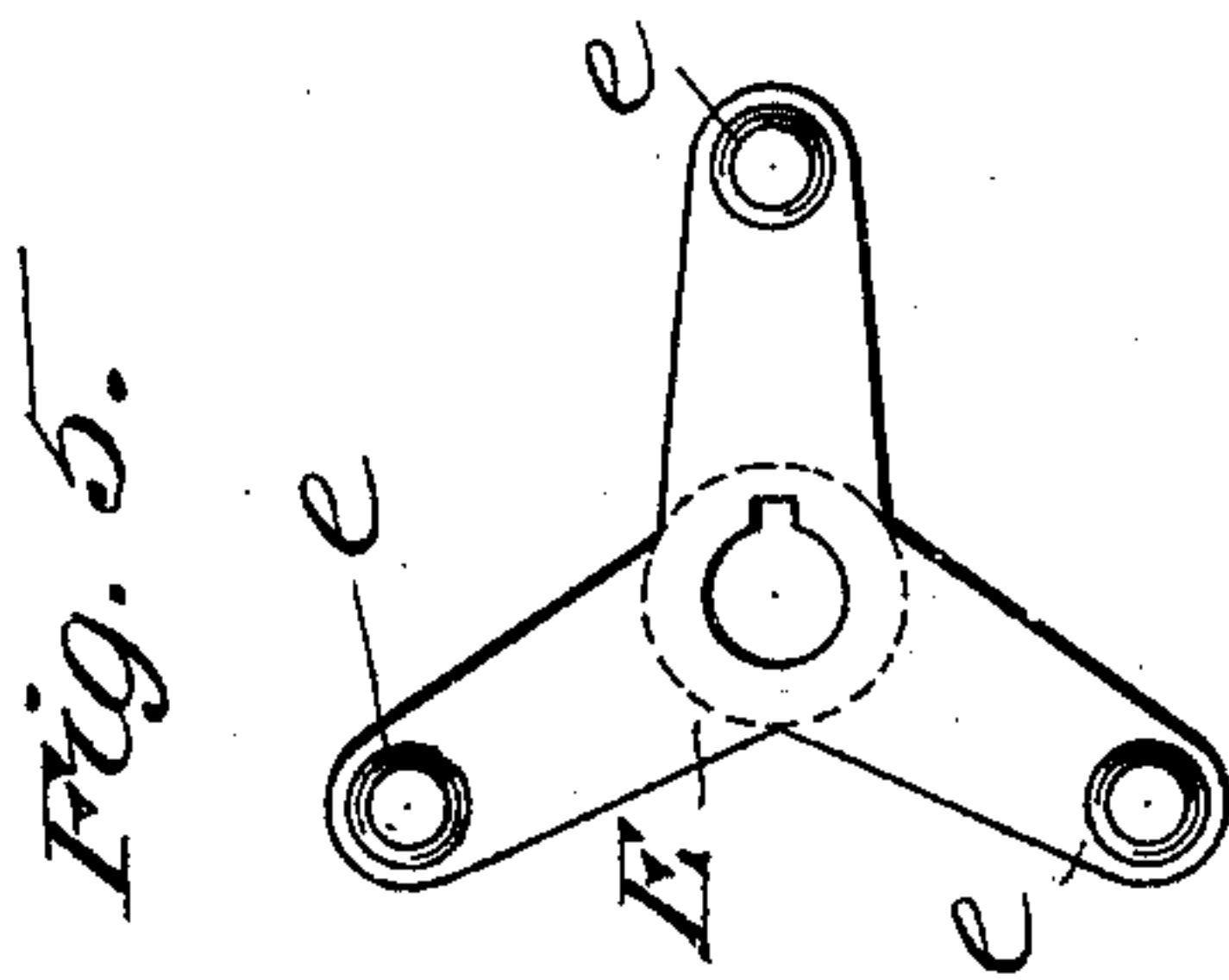
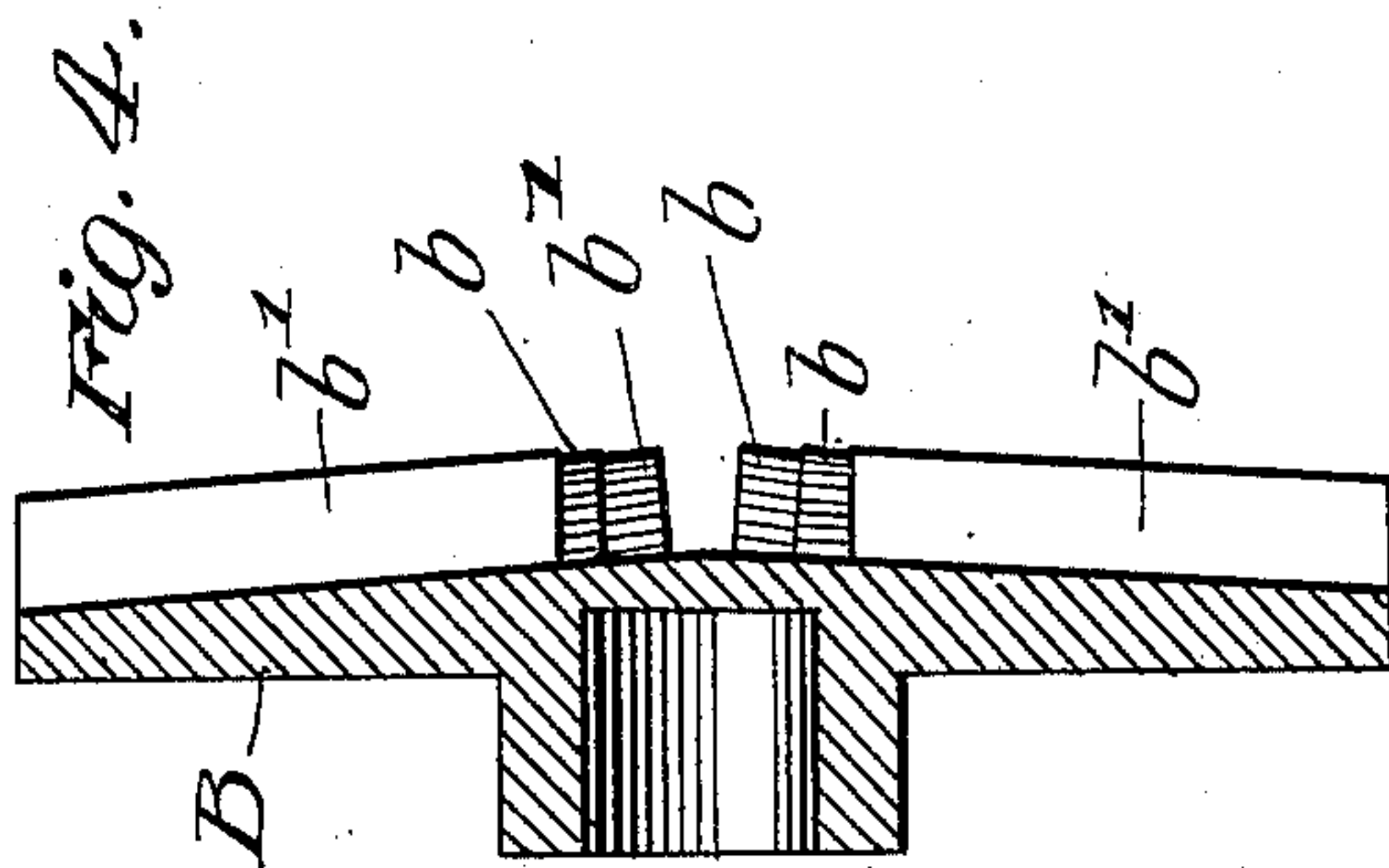
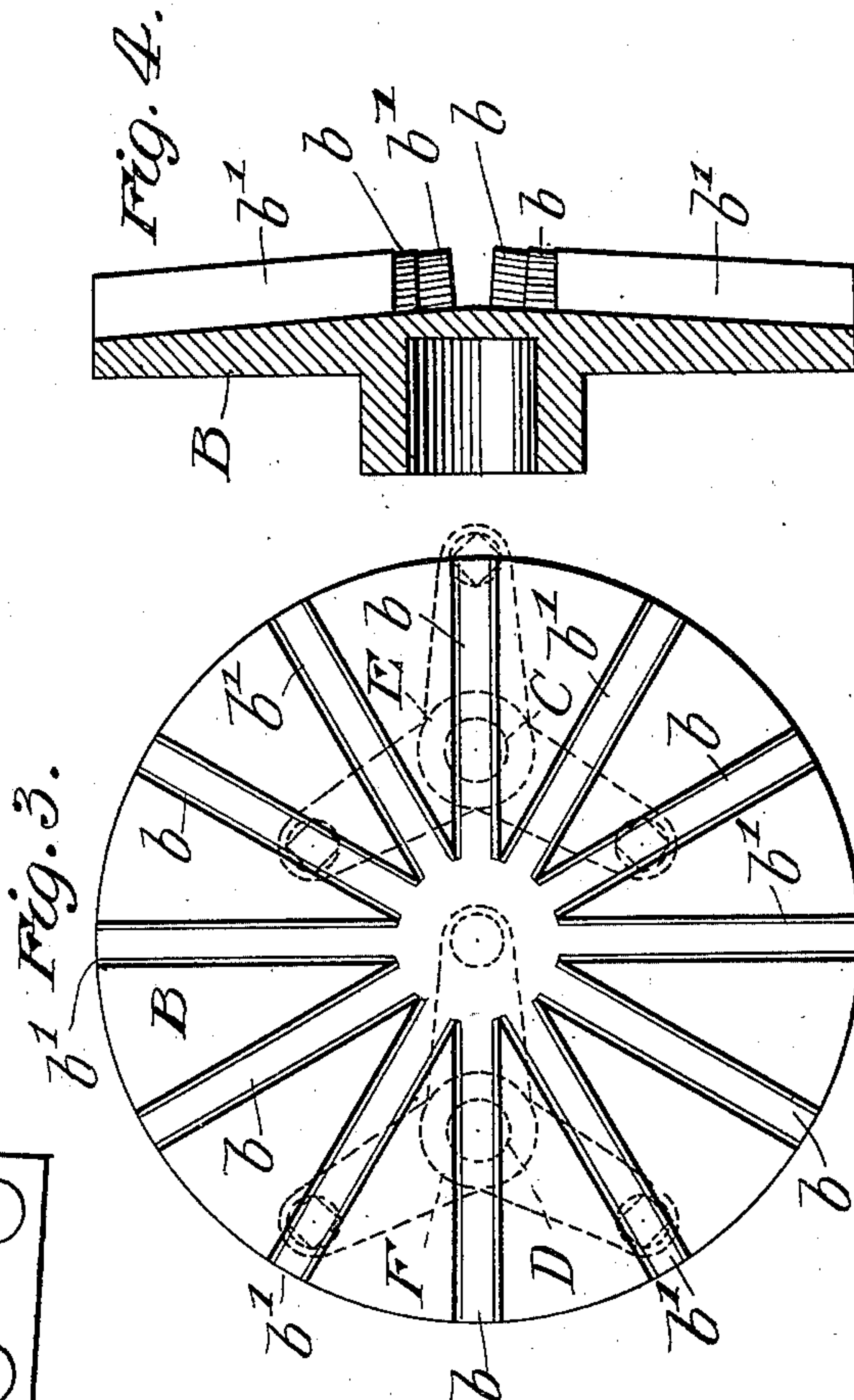
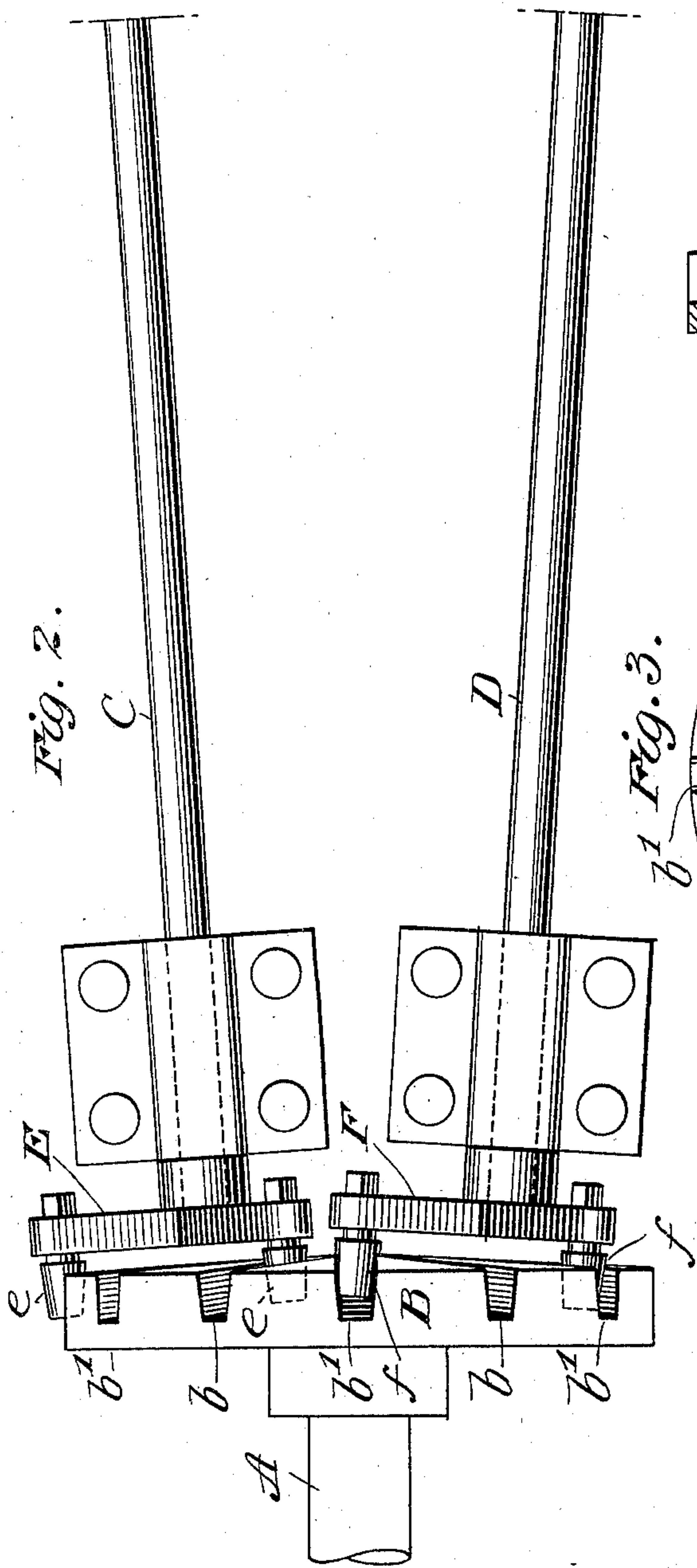
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2 Sheets—Sheet 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HENRY H. FEFEL, OF NEW YORK, N. Y., ASSIGNOR TO THE MULTIPLE POWER COMPANY, OF WEST VIRGINIA.

MEANS FOR PROPELLING BOATS.

SPECIFICATION forming part of Letters Patent No. 637,959, dated November 28, 1899.

Application filed March 10, 1898. Renewed April 29, 1899. Serial No. 715,022. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. FEFEL, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Means for Propelling Boats, of which the following is a full, clear, and exact description.

This invention relates to power-transmitters particularly adaptable to screw-propelled boats.

The object is to produce a simple and compact construction whereby a pair of propeller-shafts may be driven at a high speed from a single driving-shaft traveling at a lower speed, all mounted in the same horizontal plane, and with a provision whereby the propeller-shafts may be mounted divergently to admit of the use of extra-large screws.

To this end the invention consists in the combination of a driving-shaft, a grooved disk of peculiar formation secured thereto, a pair of carriers having rollers attached thereto and engaging the grooves in said disk, and a pair of propeller-shafts secured to the carriers.

In the accompanying drawings, Figure 1 is a plan of my improved mechanism, the dotted line indicating the outline of a boat to which the mechanism may be attached. Fig. 2 is an enlarged view in plan of a portion of Fig. 1. Fig. 3 is a face view of the disk. Fig. 4 is a section of the same, and Fig. 5 is an elevation of one of the roller-carriers.

Referring to the drawings by letter, A indicates a shaft driven from any suitable source of power—such as a gas, electric, or steam engine—and B is a disk fixedly secured thereto. One face of the disk, as shown, is beveled, or, in other words, is thickest through the center, gradually sloping off to the circumference thereof to give a slightly-conical surface. This beveled or conical surface is provided with a double series of radial grooves $b\ b\ b'$, the walls of which are slightly convergent. At points diametrically opposite with relation to the disk B and in the same horizontal plane with the axis thereof are

mounted a pair of shafts C D, each provided with propellers $c\ c$ at one extremity thereof, and at the other or inner end with carriers E and F, having tapered rollers $e\ f$ thereon. The shafts C and D are mounted so as to be at right angles to the sloping or beveled face of the disk, and as the shafts are mounted one on each side of the center of the disk the outer ends of the shafts are thrown apart, thus admitting of the use of larger-sized screws than could be used otherwise.

The carriers E and F stand in rather close proximity to the disk B, and the rollers stand within and are actuated by the slots or grooves thereof, one set of rollers being actuated by the grooves $b\ b$ and the other set by grooves $b'\ b'$.

I have shown three rollers to each carrier and twelve grooves in the disk; but I might find it advantageous to use other combinations, such as two rollers each to the carriers and eight grooves in the disk.

Rotation of the disk B imparts rotary motion to the carriers in the same direction at a speed double that of the disk. This action, it is believed, will be understood without further description.

Having described my invention, I claim—

1. The combination of a driving-shaft, a beveled-faced disk mounted thereon, a series of radial slots in said disk, one or more carriers having rollers engaging in said grooves, and one or more shafts connected to said carriers.

2. In boat-propelling mechanism, the combination of a driving-shaft, a beveled-faced disk mounted thereon, a series of grooves in said disk, a pair of carriers having rollers thereon engaging the grooves in said disk, and a pair of propeller-shafts secured to the carriers, the axial lines of the shafts being at right angles to radial lines on the beveled surface of said disk, as and for the purpose described.

In witness whereof I subscribe my signature in presence of two witnesses.

HENRY H. FEFEL.

Witnesses:

FRANK S. OBER,
HARRY BAILEY.