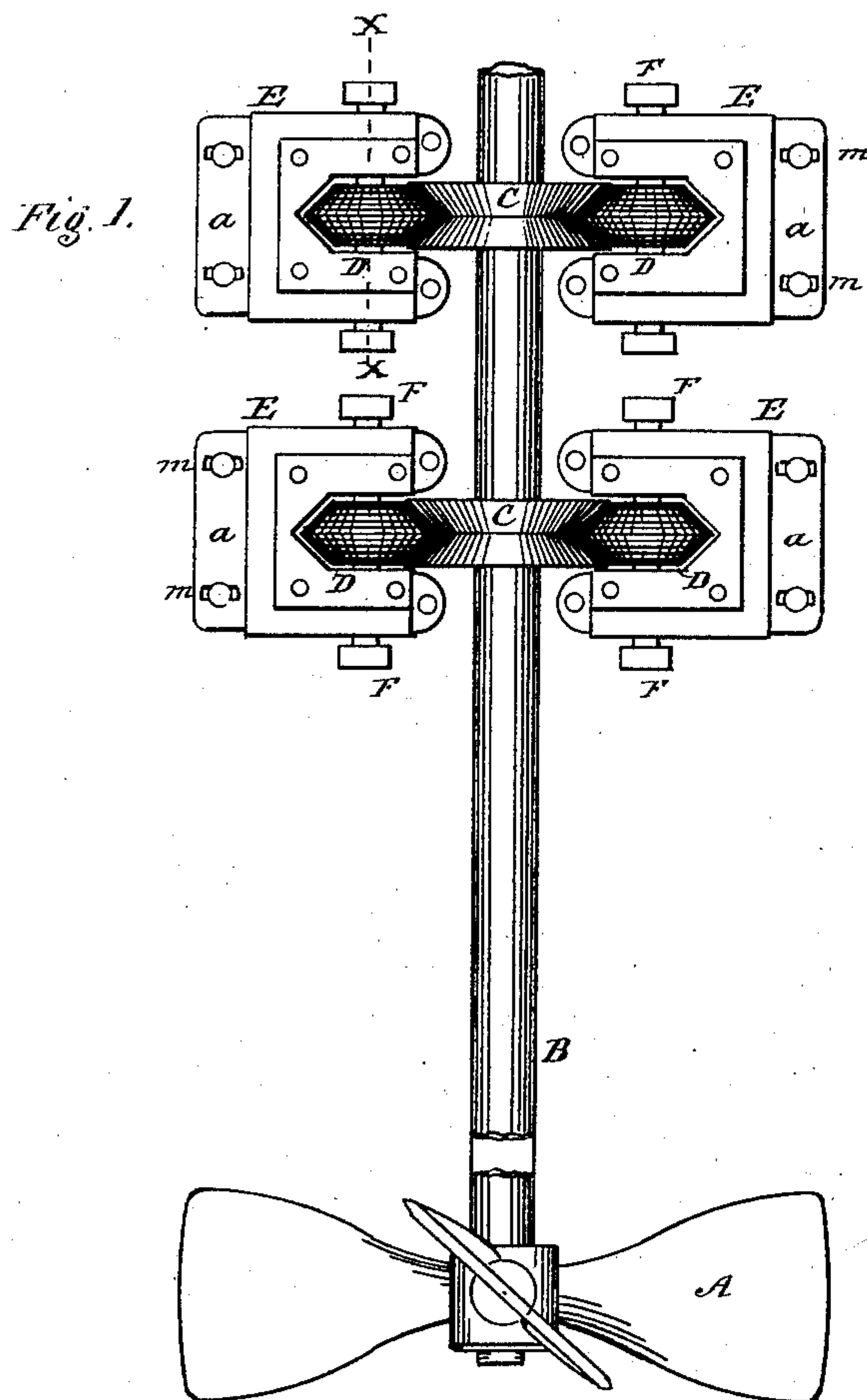
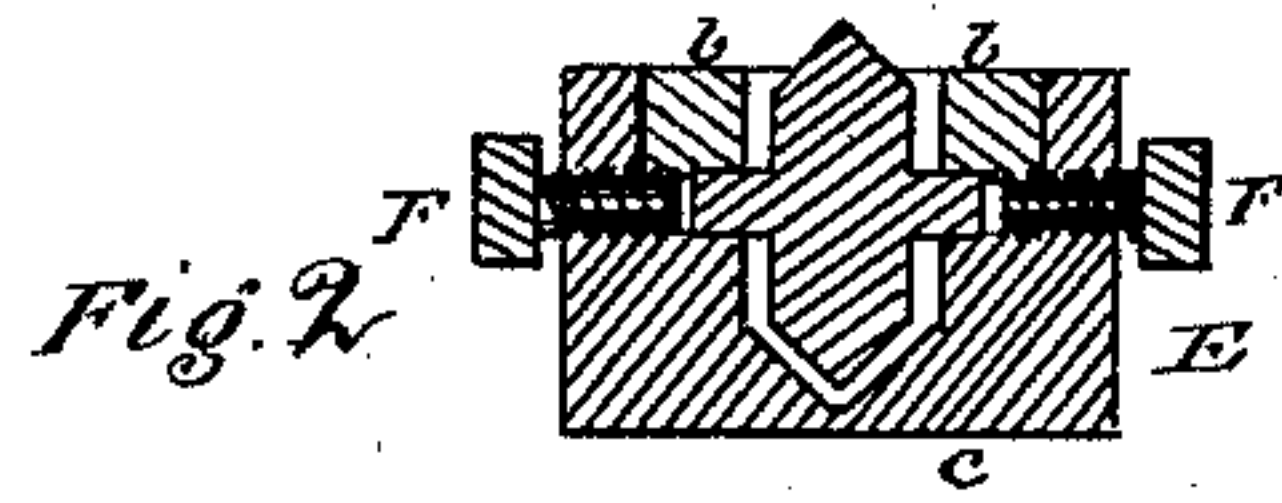


C. GODFREY,
Thrust-Bearings for Shafts.

No. 156,153.

Patented Oct. 20, 1874.



Witnesses:
John. Thornton
A. P. Smith

Inventor:
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN THRUST-BEARINGS FOR SHAFTS.

Specification forming part of Letters Patent No. **156,153**, dated October 20, 1874; application filed March 10, 1874.

To all whom it may concern:

Be it known that I, CORNELIUS GODFREY, of the town of Huntington, Suffolk county, and State of New York, have invented an Improved Thrust-Bearing for Propeller Screw-Shafts; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to an improved mode of securing the screw-shaft of a steam-ship, to enable the shaft to withstand the longitudinal or end pressure thereon, caused by the action of the screw; and its object is to obviate the loss of power by reason of friction, which is occasioned by all devices hitherto employed for that purpose.

My invention consists of a thrust-bearing for a screw-shaft, composed of cylindrical rollers, working in contact with a flange or a face-plate secured to or forming part of the shaft, and each having an independent rotary motion, and having bearings in suitable boxes or blocks securely fixed to the timbers of the vessel, by which means the screw-shaft is effectually prevented from moving endwise by the thrust or pressure caused by the action of the screw, without material waste of power by friction.

In the drawings, Figure 1 represents a plan view of a portion of a screw-shaft with my improved thrust-bearing, and Fig. 2 is a vertical section of one of the boxes or blocks through the line X X.

Similar letters of reference indicate like parts in each of the figures.

A represents the screw, and B the screw-shaft, of a steam-ship, both of which may be of ordinary or common construction, and therefore do not demand a particular description, except as hereinafter mentioned.

C is a grooved flange, keyed or otherwise secured firmly to the shaft B, or it may be made solid with the shaft. D D are short cylindrical rollers having a mitered edge formed on their periphery to fit closely into the groove formed on the periphery of the flange C. These rollers D are provided with journals, (as shown in Fig. 2,) on which they rotate, each of them having an independent motion, which said journals have bearings in the

metal boxes or blocks E, which are firmly secured to the timbers of the vessel by screw-bolts, or other suitable means, and may be made adjustable by means of slots *m* formed in the flanges *a*, which receive the bolts by which the boxes are secured to the timbers. The upper plate *b* of the box E is secured to the lower or bed-plate *c* by screw-bolts, each of said plates having a semi-cylindrical groove formed thereon, to receive the journals of the roller, D, and which groove also receives the ends of the set-screws F, by means of which the said rollers may be adjusted to the flange so as to work closely in contact therewith, and prevent any longitudinal movement of the shaft B.

The relative sizes of the flange C and roller D may be varied as may be found convenient or desirable.

By means of this construction and arrangement of parts, the displacement of the screw-shaft, by reason of the end-thrust caused by the action of the screw, is entirely obviated, and without material loss of power by friction, and thus the power usually absorbed by the devices hitherto used for preventing longitudinal motion of the shaft is reserved for propelling the vessel.

As a modification of the above, the flange C may have a mitered edge or periphery, and the rollers D a groove cut in their periphery to receive the same.

In the drawing two flanges and sets of rollers are shown, but of course it will be understood that any desired number of flanges with corresponding roller-bearings may be employed, as may be found convenient or necessary.

What I claim as my invention is—

A thrust-bearing for a screw-propeller shaft, consisting of two or more rollers, D, having bearings in boxes or blocks E, secured to the vessel, and made adjustable by the slots *m*, the said rollers working in contact with a flange or face-plate, C, on the shaft B, and being kept in position by a set-screw, F, all substantially as set forth.

CORNELIUS GODFREY.

Witnesses:

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