

(No Model.)

C. E. FOX.
BOAT PROPELLER.

No. 452,467.

Patented May 19, 1891.

Fig. 1.

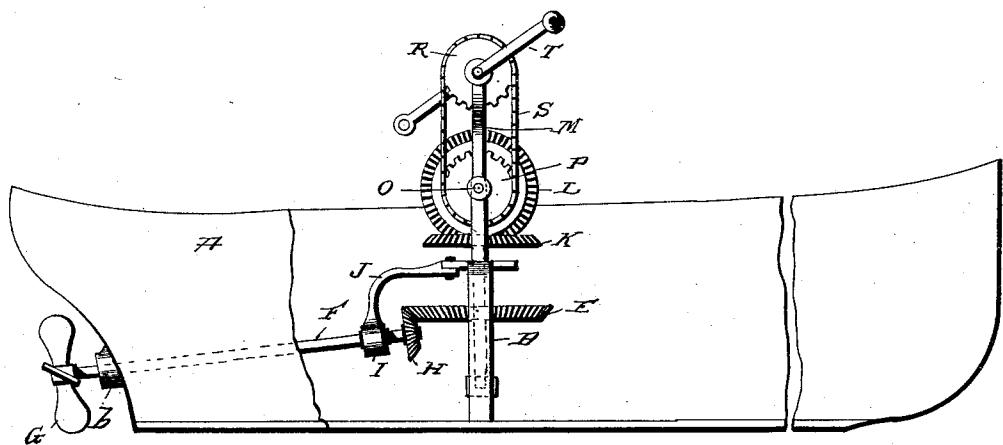
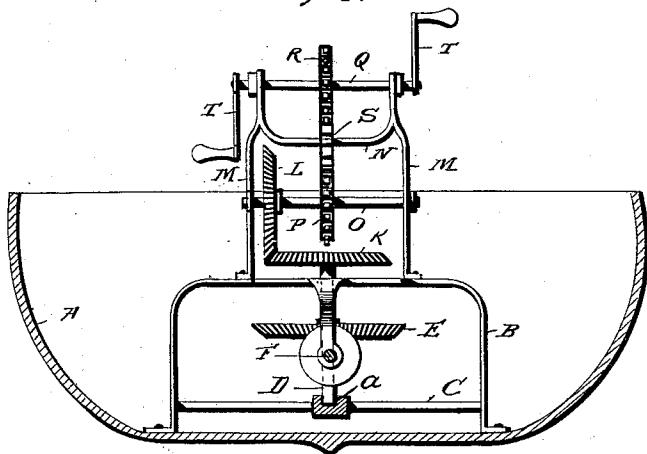


Fig. 2.



Witnesses:

C. Haeder

Thomas E. Durkin

Inventor

Charles E. Fox

By *James Sheehy*
his *Attorney*

UNITED STATES PATENT OFFICE.

CHARLES EDGAR FOX, OF MINNEAPOLIS, MINNESOTA.

BOAT-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 452,467, dated May 19, 1891.

Application filed October 13, 1890. Serial No. 367,989. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EDGAR FOX, a citizen of the United States, residing at Minneapolis, in the State of Minnesota, have invented certain new and useful Improvements 5 in Boat-Propellers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has relation to improvements in mechanism for propelling boats; and it consists in the construction, novel combination, and adaptation of parts hereinafter described 15 and claimed.

In the accompanying drawings, Figure 1 is a broken longitudinal elevation of a boat, the middle portion thereof being broken away to illustrate my improvements. Fig. 2 is a vertical transverse sectional view of the same, 20 illustrating my improvements at right angles to Fig. 1.

Referring by letter to the said drawings, A indicates a boat, which may be of any ordinary or approved construction. At a suitable 25 point within the boat adjacent to the stern thereof I secure by bolts or otherwise to the bottom thereof a transversely-arranged yoke or arch frame-piece B, which forms the main 30 support of my improved mechanism. Formed integral with or secured to the vertical branches of the frame-piece B, adjacent to the bottom thereof, is a transverse bar C, which is provided at its middle with an enlarged portion, which is recessed in its upper 35 side, as at a, to afford a seat or bearing for the lower end of a vertical shaft D, which is also journaled adjacent to its upper end in the horizontal branch of the frame B. At a 40 suitable elevation upon the shaft D, between its bearings, I fix a horizontal beveled gear-wheel E, which is set in motion and transmits the same to the propeller-shaft, as will be presently described.

F indicates the propeller-shaft, which has 45 fixed to its outer end a propeller G, which may be of any approved construction. This shaft F is journaled in a suitable bearing b at the stern of the boat and extends forwardly a sufficient distance to enable a pinion H upon 50 its inner end to mesh with the gear E upon the vertical shaft.

Adjacent to its inner end the propeller-shaft F takes through a bearing I at the end of a depending bracket-arm J, which may be 55 formed integral with or suitably secured to the horizontal branch of the frame B.

The vertical shaft D, before described, has fixed to its upper end a horizontal beveled gear-wheel K, which meshes with a vertical 60 gear L, presently to be described.

Suitably secured to and rising from the horizontal branch of the frame B are vertical standards or uprights M, which are connected together by a transverse downwardly-bowed 65 bar N, which, if desired, may be cast or formed integral with said uprights.

Journaled in the respective uprights M, at a suitable elevation, is a transverse shaft O, which carries adjacent to its middle a fixed 70 sprocket-wheel P, and adjacent to one of its bearings the vertical beveled gear L, which meshes with and transmits motion to the horizontal gear K. Journaled in the said uprights M at their upper ends is another transverse 75 shaft Q, which also carries at its middle a sprocket-wheel R, which is connected with and transmits motion to the sprocket-wheel P by means of a chain belt S, which travels around said wheels.

Suitably keyed or otherwise fixed upon the ends of the upper transverse shaft Q at right angles to each other are crank-arms T, which the operator turns when he desires to propel the boat.

In operation when the crank-arms have 85 been turned by an operator the sprocket-wheel R, through the medium of the chain belt S, will transmit motion to the sprocket-wheel P, which will cause the gear L to transmit motion to the upper horizontal gear, which turning the vertical shaft sets the lower horizontal gear in motion and in turn the pinion on the propeller-shaft and the propeller. It will also be seen that by the construction described the 90 boat may be quickly stopped and reversed, if desired.

Having described my invention, what I claim is—

In a power mechanism for propelling boats, 100 the transversely-arranged frame B, having the lower transverse bar adapted to afford a seat for the lower end of the vertical shaft, the said vertical shaft journaled in the hori-

zontal branch of said frame B and carrying the horizontal gears E and K, the standards secured to and rising from the horizontal branch of the frame B, the bowed transverse bar connecting said standards, the lower transverse shaft journaled in said standards, carrying the vertical gear, meshing with the upper gear of the vertical shaft, the sprocket-wheel fixed on said lower transverse shaft, the upper transverse shaft also journaled in the upright standards and carrying crank-arms at its ends, the sprocket-wheel fixed on said upper shaft, a chain belt connecting the sprocket-wheels on the upper and lower shafts, and the rearwardly and downwardly

extending hanger J, connected at its upper end to the transverse branch of the frame B and having a horizontally-oblique journal-bearing at its lower end, in combination with a propeller and its shaft, journaled in the bearing of the hanger J and carrying a pinion meshing with the lower horizontal gear, all adapted to operate substantially as specified. 20

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES EDGAR FOX.

Witnesses:

ARTHUR J. GOULD,
S. S. PYLE.