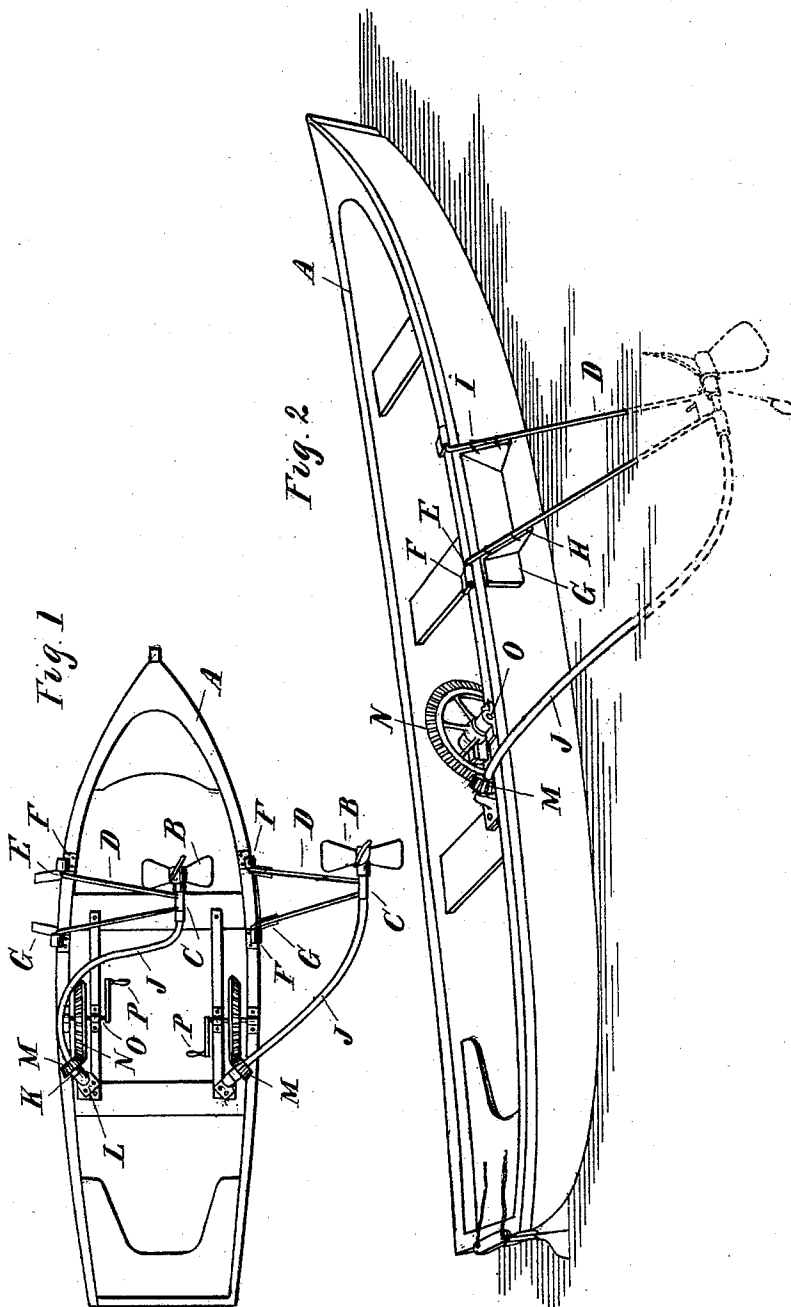


(No Model.)

J. G. KIAH.
PROPELLING DEVICE FOR BOATS.

No. 464,973.

Patented Dec. 15, 1891.



Witnesses:

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UNITED STATES PATENT OFFICE.

JEROME G. KIAH, OF SAND BEACH, MICHIGAN.

PROPELLING DEVICE FOR BOATS.

SPECIFICATION forming part of Letters Patent No. 464,973, dated December 15, 1891.

Application filed July 13, 1891. Serial No. 399,364. (No model.)

To all whom it may concern:

Be it known that I, JEROME G. KIAH, a citizen of the United States, residing at Sand Beach, in the county of Huron and State of Michigan, have invented certain new and useful Improvements in Propelling Devices for Boats, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in propelling devices for boats.

The invention consists in the peculiar construction and arrangement of two propeller-screws pivotally secured in hinged frames to the boat and driven by gearing through the medium of a flexible shaft and further construction, arrangement, and combination of the various parts, all as more fully hereinafter described.

In the accompanying drawings, Figure 1 is a plan view of a boat equipped with my device. Fig. 2 is a perspective view thereof, showing one of the propeller-screws.

A is the boat.

B B are two ordinary propeller-screws, the shafts of which are respectively journaled in bearing C, formed at the outer end of the outrigger D, consisting of two bars diverging from the bearing C and having their ends bent to form the pivots E, journaled in boxes F, by means of which the outrigger is hinged to the gunwale of the boat.

G are supporting-blocks having inclined faces H, upon which the bars rest when the outrigger is lowered, as shown in Fig. 2. Securing devices or clamps I, of any suitable construction, may be used to hold the outriggers in their lowered position. These outriggers I preferably locate one on each side forward of the middle of the boat and with the screw forward of the outrigger. Power is applied to the screw through the flexible shaft J, secured at one end to the shaft of the screw and at the other end to the stub-shaft K, journaled in stationary bearings L on the boat. This shaft carries the bevel-pinion M, which meshes with a bevel gear-wheel N on a shaft O, journaled in bearings in the boat, a suitable crank-handle P being provided to drive the mechanism. Other forms of gearing or means of applying hand or foot power may be used.

It will be seen that the operator, sitting in position in the rear of the driving mechanism, can see ahead, and by rotating one screw more rapidly than the other or by revolving the movement of one or both can quickly turn or back the boat. Either one or both screws can be turned inboard by releasing the clamps I and turning the outrigger upon its pivots.

To allow the flexible shaft to lie well inboard, I place the bearing L a sufficient distance inside the gunwale, so that the shaft will bend in such a manner as to accomplish this object. Thus I avoid all danger of damage to the shaft from injury if lying beside a dock or a vessel in a seaway. While I show and preferably use two separate drive-wheels for each screw, it is not necessary to have but a single drive-shaft and drive mechanism. By placing the screw ahead of the drive-shaft the flexible shaft will be given an easy and natural bend without danger of kinking, which would be apt to occur if the screw were placed behind the drive-shaft. By the use of the bevel-gearing I obtain an easy angle for the flexible shaft.

What I claim as my invention is—

1. A propelling device for boats, comprising an outrigger hinged from the side of a boat, a flexible shaft supported in a bearing in the outrigger, a screw-propeller on the outer end of the shaft journaled in the outrigger, and a driving mechanism connected with the opposite end of the shaft, substantially as described.

2. A propelling device for boats, comprising a screw-propeller and drive-shaft, a hinged outrigger on the side of the boat in which the propeller is journaled and located forward of the drive-shaft, a flexible shaft connected with the propeller, and driving mechanism for the flexible shaft, substantially as described.

3. A propelling device for boats, comprising two screw-propellers, one for each side of the boat, each comprising an outrigger hinged to the side of the boat, a screw journaled at the lower end thereof, a flexible drive-shaft connected with said screw, and drive mechanism connected with the flexible shaft, substantially as described.

4. In a propelling device for boats, the combination, with the screw-propeller and driving mechanism for the same, of an outrigger

D, hinged to the gunwale of the boat, a bearing C in the outrigger in which the screw-propeller is journaled, the blocks G on the side of the boat adapted to support the outrigger, and clamps I for securing the outrigger to the blocks, substantially as described.

5 5. In a propelling device for boats, the combination of the outrigger D, consisting of the diverging rods having pivots E at their upper end and bearing C at their lower end, a screw journaled in said bearing, a flexible shaft connected at one end with the screw, a stub-shaft K, secured in a suitable bearing

on the boat and connected with the opposite end of the flexible shaft, a bevel-pinion M on the stub-shaft, a shaft O, journaled in bearings on the boat and carrying a crank on one end thereof, and a bevel gear-wheel N on the shaft O, meshing with the bevel-pinion M, substantially as described.

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

JEROME G. KIAH.

Witnesses:

M. B. O'DOHERTY,
P. M. HULBERT.