

(No Model.)

E. G. DELOE.
BOAT PROPELLER.

No. 472,526.

Patented Apr. 12, 1892.

Fig. 1.

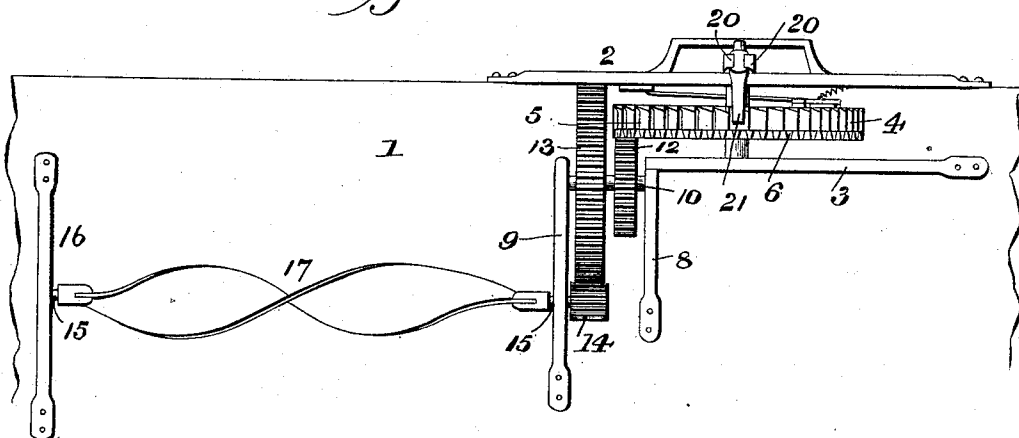


Fig. 2.

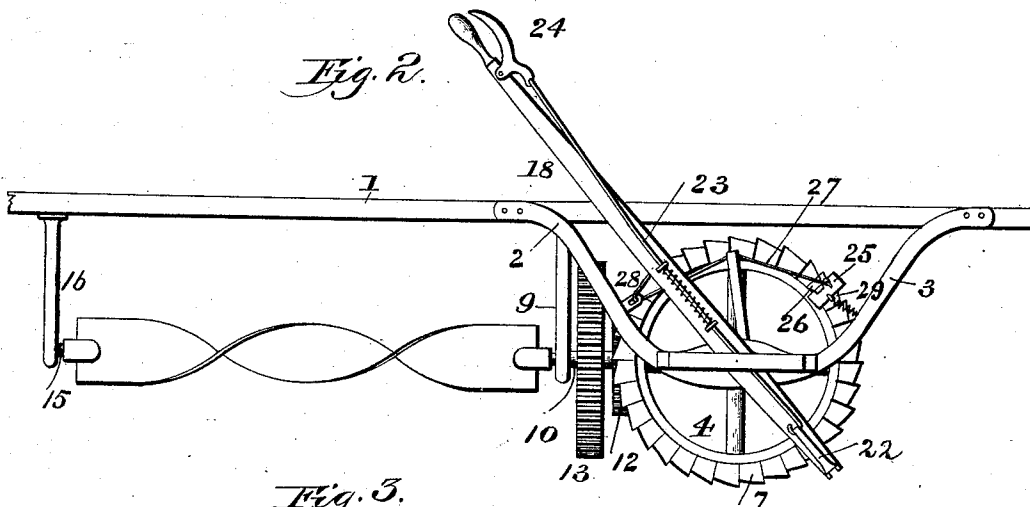


Fig. 3.

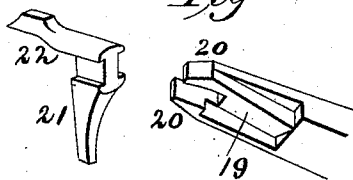
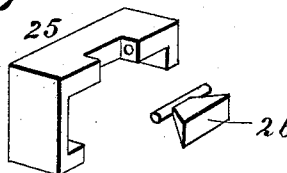


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWARD G. DELOE, OF KNOX, PENNSYLVANIA.

BOAT-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 472,526, dated April 12, 1892.

Application filed July 11, 1891. Serial No. 399,130. (No model.)

To all whom it may concern:

Be it known that I, EDWARD G. DELOE, a citizen of the United States, and a resident of Knox, in the county of Clarion and State of Pennsylvania, have invented certain new and useful Improvements in Boat-Propellers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in propelling boats by manual labor.

In the present invention I provide improved means for operating a propeller, the action being similar to that in rowing a boat with an ordinary oar, and the object being to increase the speed of the boat without any additional expenditure of force.

The invention consists in the novel construction and combination of parts herein-after fully described, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a side view of a portion of a boat with my improvements applied thereto. Fig. 2 is a plan view of the improvement. Figs. 3 and 4 are detail views.

In the said drawings, the reference-numeral 1 designates the side of ordinary row-boat or skiff.

Pivoted in brackets 2 and 3, secured to the boat, is a master-wheel 4, having a series of peripheral ratchet-teeth 5 and on its under side provided with cogs 6. On its upper side or face it is provided with a series of ratchet-teeth 7, arranged reversely to teeth 5.

Journaled in brackets 8 and 9 is a shaft 10, having secured thereto a cog-wheel 12, meshing with the cogs on the master-wheel. It is also provided with a cog-wheel 13, meshing with a pinion 14, fixed to a propeller-shaft 15, journaled in the bracket 9, and also in a box or bearing 16, fixed to the side of the boat. The numeral 17 denotes the propeller, fixed to said shaft, which may be of any ordinary or suitable construction.

Journaled or pivoted on the shaft of the master-wheel is a lever 18, one end of which extends into the boat, like an ordinary oar,

and is adapted to be reciprocated back and forth by the occupant in a manner similar thereto. The outer end of this lever is cut away or recessed on its under side, as seen at 19, and is also provided with a mortise or groove on its front side, whereby it may engage with the ratchet-teeth on the upper face of the master-wheel for the purpose of rotating the same. The extreme outer end of the lever is bifurcated or formed with two arms 20 20, between which is embraced a reciprocating two-armed pawl, the outer or vertical arm 21 of which is adapted to engage with the peripheral ratchet-teeth of the master-wheel, while the horizontal arm 22 is connected by means of a rod 23 with a hand-lever 24, pivoted to lever 18 near the opposite end, by means of which the arm 21 can be thrown into and out of engagement with the said ratchet-teeth.

Loosely embracing the rim of the master-wheel and slidable or movable thereon is a cage 25, provided with a pivoted pawl 26, adapted to engage with the ratchet-teeth on the upper face of the master-wheel. This cage is connected with a cord or rope 27, passing through a loop or eye 28 or over a pulley on the bracket 2, from whence it passes to and is connected with the lever 18. The cage is also connected with a small spring 29, attached to bracket 2, so that it is drawn back to normal position after being actuated by the lever, as hereinafter set forth.

The operation is as follows: The person propelling the boat sits facing the direction in which the boat travels. By reciprocating the lever 18 at every backward movement or "pull" thereof the mortised or grooved outer end thereof will engage with the ratchet-teeth on the upper face of the crown-wheel, causing said wheel to be correspondingly rotated, which, through the medium of the intermediate gear, will rotate the propeller. By the forward movement or "push" of the lever the pivoted pawl in the cage 25 will engage with the said ratchet-teeth and by means of the cord connected therewith and with the lever the cage will be pulled backward, actuating the master-wheel. By these means a continuous rotary movement will be given to the said wheel and to the propeller. Upon the lever being again pulled backward the spring-roller

will cause the cage to be returned to its normal position to be again actuated upon the reverse movement of said lever. When it is desired to propel the boat with the operator facing the opposite direction or toward the stern, the two-armed pawl in the end of the lever is pulled inward by means of the rod and hand-lever connected therewith, so that the vertical arms thereof will engage with the peripheral ratchet-teeth of the master-wheel, which, as before stated, are arranged reversely to the ratchet-teeth on the upper face thereof. By pulling upon the lever the said wheel and propeller will be rotated. By this arrangement, also, the boat can be backed when the operator is facing in the direction of the travel and may be used to check the movement of the boat by engaging the pawl with the ratchet-teeth and holding the lever stationary, where-
 20 by the propeller is prevented from rotating.

The advantages of my invention will be obvious. A boat can be propelled much faster with the same power expended. There will be no splash, no matter how awkward the operator, and the operator, while occupying the best position to exert the propelling power, can face the direction of travel of the boat. There are also other advantages which will be apparent and need not be enumerated
 30 here.

It is obvious that a paddle-wheel or traveling chain with brackets may be substituted for the propeller shown without departing from the principle of my invention.

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

1. In a boat, the combination, with the brackets secured thereto, the master-wheel pivoted in said brackets, having cogs upon

its under side and ratchet-teeth upon its upper face, the propeller having a pinion, and the gears mounted upon a shaft journaled in said brackets and meshing, respectively, with said pinion and with the master-wheel, of the pivoted lever adapted to engage with said ratchet-teeth, the movable cage connected with the rim of said wheel, having a pivoted pawl adapted to engage with the said ratchet-teeth, a cord or rope connected therewith passing through a loop or eye on the bracket at one side of the master-wheel and secured to said lever, and a spring connecting the cage with the bracket on the opposite side of the master-wheel, substantially as described.

2. In a boat, the combination, with the brackets secured thereto, the master-wheel pivoted in said brackets, having cogs upon its under side and ratchet-teeth upon its upper face and periphery, the propeller having a pinion, and the gears mounted upon a shaft journaled in said brackets and meshing, respectively, with said pinion and with the master-wheel, of the pivoted lever adapted to engage with the ratchet-teeth on the upper face of said wheel and having its end bifurcated, the two-armed pawl working in said bifurcation and adapted to engage with the peripheral ratchet-teeth of the master-wheel, the hand-lever pivoted to said lever, and the rod connecting said hand-lever with the two-armed pawl, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

EDWARD G. DELOE.

Witnesses:

W. P. GRAHAM,
 D. W. LEWIS.