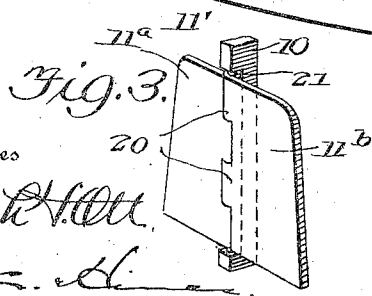
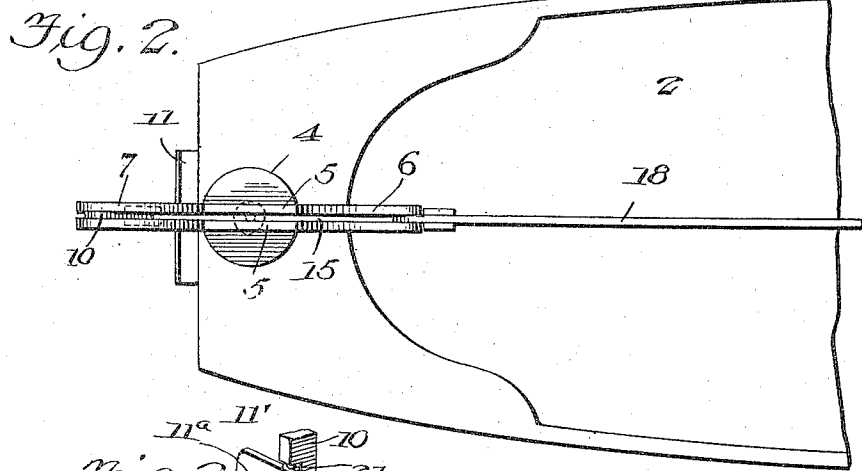
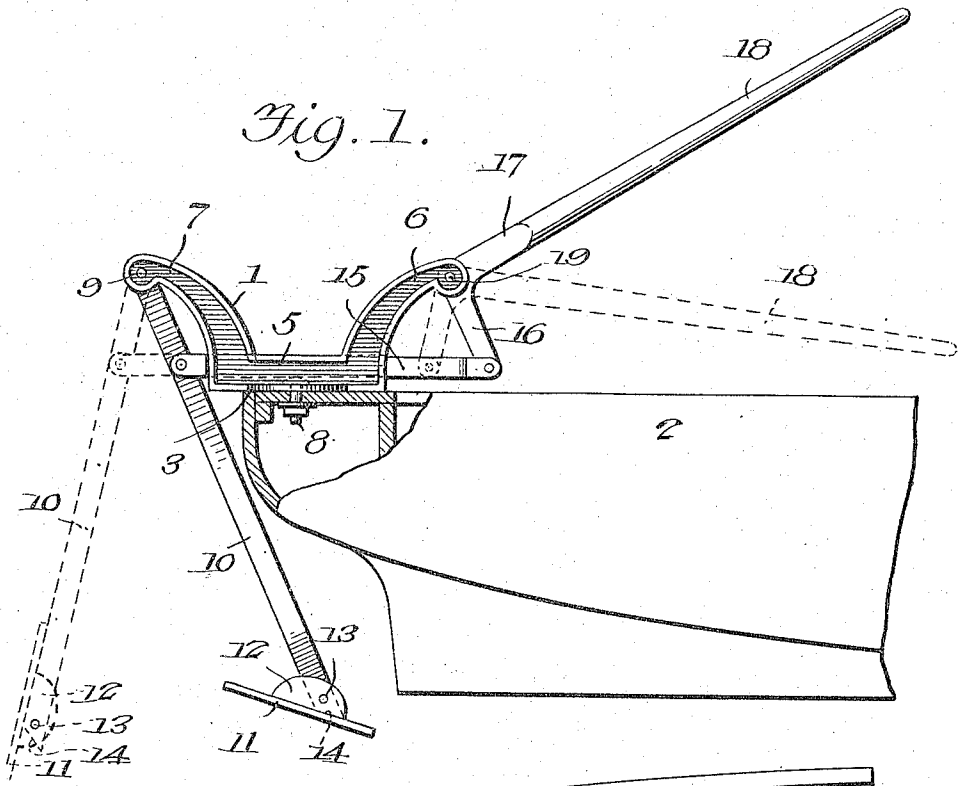


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PROPELLER FOR BOATS.

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PROPELLER FOR BOATS.

1,197,239.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, DAVID H. SINCLAIR, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented new and useful Improvements in Propellers for Boats, of which the following is a specification.

This invention relates to a novel and improved propeller for boats, and its primary object is to provide a propeller which may be applied to any ordinary form of row boat or other small boat, for propelling the same through the water.

A further object of the invention is to provide a propeller which may be manually operated to furnish proper propulsive power, and which embodies a propeller blade mounted to swing in an arc in a general direction longitudinally of the boat, and which is adapted on its return motion to fold or close to a non-resisting position, so as to establish a feathering action.

A still further object of the invention is to provide a propelling device, which, if desired, may also be employed as a rudder.

The invention consists of the features of construction, combination and arrangement of parts herein fully described and claimed, reference being had to the accompanying drawing in which:—

Figure 1 is a side elevation, partly in section of the stern portion of a boat, showing the application of the invention. Fig. 2 is a top plan view of the same. Fig. 3 is a detail view showing in modified form the propeller blade.

In carrying my invention into practice, I provide a supporting bracket 1 of convenient size to rest upon the gunwale at the stern of any suitable form of small boat 2, such as a row boat, which bracket comprises a base plate 3, preferably having a central portion 4 of circular form, and spaced parallel cheek plates 5 rising from said base plate, the said cheek plates being provided with forwardly and rearwardly extending arms 6 and 7. One or more bolts or other suitable fastenings 8 pass through the base plate and secure the bracket to the boat 2. If desired, a single bolt may be employed at the center of the circular portion of the base plate, which may serve as a pivot on which the bracket may swing from side to side to change the position of the propelling

device and adapt it to serve as a rudder, as hereinafter described.

Pivotaly mounted at its upper end upon a pin 9 extending between the arms 7 is a longitudinally swinging arm or lever 10, which is movable within a prescribed arc substantially in line with the longitudinal center of the boat. This swinging arm or lever 10 carries at its lower end a propeller 11, the said propeller being in the form of a flat blade or plate having rearwardly extending flanges 12 disposed on opposite sides of the lower end of the lever 10 and pivotally connected therewith by a pin or bolt 13, the lower end of the lever 10 being formed to provide an inclined bearing or abutment surface 14.

At a point below its upper end the lever 10 is coupled by a reciprocating connecting rod or bar 15, which is movable through the guide space or channel between the plates 5 and is pivotally connected at its forward end with the short arm 16 of a bell crank operating lever 17, having a comparatively long operating arm 18, said lever being pivoted at the angle of intersection of its arms with and upon a pivot pin 19 extending between the bracket arms 6. By this mode of mounting the levers and connecting rod it will be seen that they move in guiding connection with and between the plates and arms of the bracket 1 and hence are held from lateral or sidewise motion on their pivots, thus eliminating a large amount of the wear and tear which would otherwise be caused by the tendency of the parts, especially when loose, to wobble on their pivotal connections.

The power arm or operating arm of the lever 19 may be of any suitable length, and it may be operated by one or more of the occupants of the craft, said arm being oscillated or vibrated up and down, by which a back and forth oscillatory motion will be imparted to the arm 16, thus reciprocating the rod 15 and swinging the lever 10 back and forth, as will be readily understood. It will be evident that the flanges 12 guide the propeller blade 15 in its swinging movements and hold it from lateral motion, and that when the lever arm 18 is depressed the lever 10 will be swung rearwardly on its working motion, while on the upward movement of the arm 18 the lever 10 will be swung forwardly on its inactive or re-

turn motion. When the blade 11 is at the limit of its return motion, it is swung downwardly and forwardly to an extent limited by the abutment 14 under the water pressure, but as the arm 10 swings rearwardly the pressure of the water on the rear face of the blade forces it upwardly and forwardly to a folded or closed position in which it bears against and is backed or braced by the arm 10, so that it will give a direct propelling effect against the surface of the water until it reaches the limit of its working motion, as shown in dotted lines in Fig. 1. On the return motion of the lever 10 and blade 11, the latter is swung rearwardly and downwardly on its pivotal connection to an open and substantially non-resisting position, in which it travels edgewise through the water, thus avoiding undue resistance to its return motion and enabling a person to operate the propeller with full force and for long periods without undue fatigue.

It will be evident from the foregoing description that by vibrating or oscillating the lever 18 in a vertical plane a rapid and powerful back and forth motion may be imparted to the propeller, so as to force the boat with considerable speed through the water, and it will be evident that, if desired, the propeller may be adapted to serve as the additional function of a rudder by swinging the device laterally in either direction on the bolt 8 as a fulcrum and thus disposing the propeller to either exert a resistance at one side of the craft or to set up a propeller action at an angle to give the desired steering motion.

While the form of propeller shown in Figs. 1 and 2 is preferred, a modified structure may be employed in some cases, and such a modified structure is shown in Fig. 3, wherein the propeller blade 11' is illustrated as being vertically divided and consisting of sections 11^a and 11^b provided at their adjacent edges with knuckles 20 engaging a pintle pin 21 disposed within a recessed portion of the lever arm 10. With this construction the hinged sections of the propeller blade are adapted on the working motion to lie in longitudinal or edgewise alinement with each other, and to form a

broad abutment or propelling surface but on the return motion of the lever 10 the pressure of the water causes the blade sections 11^a and 11^b to unfold rearwardly until substantially in parallel relation, thus producing a feathering action which diminishes its resistance on its return stroke.

I claim:—

1. A propeller for boats comprising a bracket composed of spaced plates and forwardly and rearwardly extending arms, an operating lever pivotally connected with the forwardly extending arms, a swinging lever arm pivotally connected with the rear bracket arms, a feathering propeller blade carried by the swinging lever arm, and a connecting rod coupling the said operating lever to the lever arm and slidably movable between the spaced plates of the bracket.

2. A propeller for boats comprising a base plate pivotally mounted to swing at an angle to the keel line of the body, a bracket carried by said base plate and composed of spaced side plates and forwardly and rearwardly extending arms, a bell crank operating lever pivotally connected with the forwardly extending arms, a swinging lever arm pivotally connected with the rear bracket arms, a feathering propeller blade carried by the swinging lever arm, and a connecting rod coupling the bell crank operating lever to the lever arm and slidably movable between the spaced side plates of the bracket.

3. A propeller for boats comprising a bracket composed of spaced plates and forwardly and rearwardly extending arms, a bell crank operating lever pivotally connected with the forwardly extending arms, a swinging lever arm pivotally connected with the rear bracket arms, a pivoted folding propeller blade carried by the swinging lever arm, and a connecting rod coupling the bell crank operating lever to the lever arm and slidably movable between the spaced plates of the bracket.

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

DAVID H. SINCLAIR.

Witnesses:

JOHN COOK,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."