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TO ALL WHOM IT MAY CONCERN:

Be it known that I, ARTHUR C. DALE, (Photo Engraver), a citizen of the United States and a resident of New Orleans, in the County of Orleans and State of Louisiana have invented certain new and useful improvements in

B O A T H U L L S

of which the following is a specification:---

This invention relates to boats, and more particularly to an improved propulsion means therefor, together with an improved hull construction designed to insure uniform speed when traveling in a rough or smooth sea, the riding effect being such as to obviate racing propellers, to lessen the draft of the boat as well as to obtain greater speed for the power expended than is possible with other boats, and at a reduced cost and expense of upkeep.

A further object of the invention is to provide a boat structure of simple, durable, and economical form, together with a novel and simple propelling means in the

form of an endless device arranged with a series of blades or paddles together with means for driving the same and maintaining the operative blades or paddles at a uniform depth in the water, irrespective of whether the boat is riding in a rough or smooth sea.

Other and further objects of my invention will become readily apparent to persons skilled in the art, from a consideration of the following description taken in conjunction with the accompanying drawings, wherein

Figure 1 is a side elevation of my improved boat and propulsion means therefor.

Figure 2 is a front elevation.

Figure 3 is a fragmentary sectional elevation of the endless propeller device and showing one of the paddles or blades, and

Figure 4 is a plan view of the structure shown in Figure 3 completed.

Referring to the drawings, in detail, in which like reference characters designate corresponding parts throughout the several views, my improved boat is shown as comprising a duplex hull 10 comprising boat shaped pontoons or hull structures 11 of the usual tapered or pointed bow portions and the stern portions 13. The bottom portions of the hull are provided with spaced keels 14 medially of

the members 11 which are joined to complete the hull 10, thus providing an intermediate air space 15 at the bottom designed to lessen the draft and facilitate keeping the boat upright as well as to permit the same to weather a rough sea and ride the same properly. The bottom portions of the members 11 and the hull 10 are also provided with partitions or floor lines 16 producing air tight compartments or bilges 17 between the same and the bottom portion of the hull to further lessen the draft owing to the bouyant action thereof.

The boat may be used as a model for the construction of large sized steamers or small boats, as it is thought will be obvious and within the realm of the invention and the scope of the device to be hereinafter more fully described and claimed. However, as illustrated, the stern of the boat at each hull element is shown equipped with a rudder 18 arranged below the water line 19, being completely submerged to facilitate steering or guidance of the craft. Obviously, any suitable means may be arranged operating the rudders from within the hull so as to swing the same on their pivots or posts 20 in a manner well known in the art. At the bow, the same may be covered, as indicated at 21 and a suitable top 22 may be arranged over the open portion of the boat or hull in connection with closed panels of glass or other like material indicated at 23 located at the sides or entirely surrounding the same, including the front or bow and the back or stern portions. The steering wheel 24 having connection with the rudders 18 is preferably arranged centrally of the forward portion of the cabin at the bow, as is also a motor 25 which is disposed in the rear thereof so as to balance the boat and make the weight even on either side.

The propulsion means which is suitably operatively connected to the motor 25 to be driven thereby consists of a pair of transverse shafts 26 arranged horizontally at the bow and stern and journaled through the sides of the hull so that the ends thereof project. On these projecting ends I have arranged sprocket wheels or toothed disks 27 the teeth of which are designated at 28. An endless propeller is engaged around the aligned pairs of sprocket wheels at opposite sides of the boat or hull and each endless propeller consists of pivotally joined links of equal lengths, certain of the links preferably each alternate link 29 being in the form of a curved plate provided with a tooth aperture 30 preferably of rectangular form or outline to correspond with the shape of the teeth. These apertures are centrally arranged, and at each end the links or plates 29 are provided with means for pivotally connecting the same to links 31 also in the form of plates, as shown. Preferably the links 29 are provided with spaced apertured ears 32 at the ends thereof, designed to receive therebetween the apertured ears 33 located at the ends of the plates 31, the pivotal connection being completed through the medium of headed pintles or pivots 34, the ends of which may be upset for this purpose. In order that the links 31 may cooperate with the teeth 28, they are provided with sockets 35 at the inside, so as to engage or receive the teeth therein, the sockets being centrally positioned equi-distantly from the ends of the links as are the apertures 30, while the links or plates 31 are further provided with laterally projecting paddles 36 which extend at right angles or perpendicularly with respect to the curved plates or links 31 preferably over the sockets 35. The plates 31 are reinforced transversely at the sockets in order to add strength to the paddles or blades and permit the latter to be made of any suitable extension or width,

in order to give the proper propelling effect and power.

As will be observed, the alternate links are provided with the paddles or blades 36, in the preferred construction, but it is to be understood that any suitable number of intervening links 29 may be used, according to the power to be derived or generated, as well as the speed to be produced. It will be further seen that the lower lap of the endless drive member at each side is arranged to dip in the water irrespective of the condition of the water or sea, be it rough or smooth. This will result in a uniform speed while riding in a rough sea, and will also avoid racing propellers and the usual objections thereto.

In view of the foregoing, it is thought that the operation of the device will be readily understood and in view of the simplicity and practical value, that it will readily commend itself to those skilled in the art.

What is claimed is:

1. A boat comprising a hull, a motor arranged in the hull, a pair of transverse shafts horizontally journaled through the sidesof the hull adjacent the bow and stern, sprocket wheels carried by said shafts at the projecting ends thereof and endless propeller members engaged on said sprocket wheels, said endless propeller members comprising a plurality of pivoted plates, said plates being curved to conform to the sprocket wheels and alternate plates being provided with teeth receiving sockets and openings, the plates provided with the sockets being provided with outstanding blades over the sockets, and the endless propeller members extending substantially throughout the length of the hull.

2. A boat coomrising a hull, a motor arranged in the hull, a pair of transverse shafts horizontally journaled through the sides of the hull, sprocket wheels carried thereby, and endless propeller members engaged on said sprocket wheels, said endless propeller members comprising links in the form of concaved plates with the concaved sides inwardly, certain of said plates being apertured centrally and other of said plates being provided with sockets adapted to engage the teeth of the sprocket wheels in conjunction with said apertures alternately, and blades formed integral with said plates and projecting outwardly and laterally therefrom at right angles beyond the sides of the plates, the lower lap of each endless member being designed to operate in the water.

3. In a boat propulsion means, spaced drive members, means for operating the same, and endless propeller members engaged on said drive members and comprising alternate apertured and socketed plates, said sockets being located at the inside for engaging said drive members, said plates having interfitting apertured ears and pins connecting the same, and alternate plates provided with the sockets being provided with enlarged perpendicularly extending paddles tapering toward their free ends and having enlarged base portions.

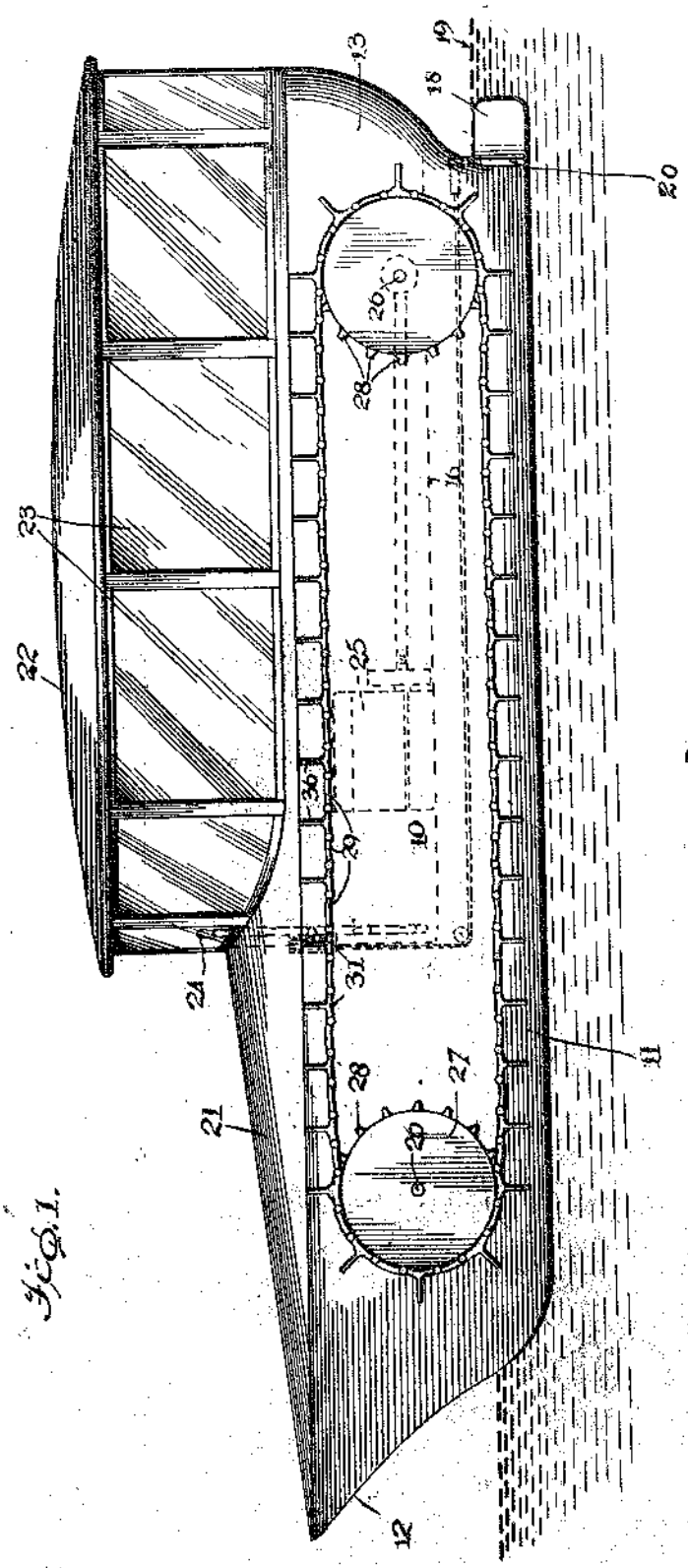

Fig. 1.

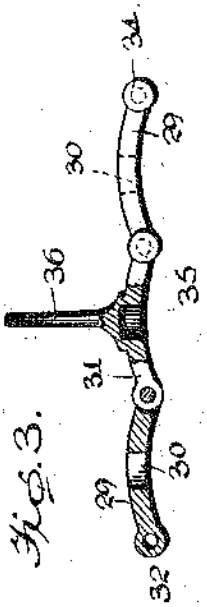

Fig. 3.

WITNESSES:

Thomas Leuhart.

Frank B. Gorman.

Certified to be the drawing referred to in the specification hereunto annexed.

NEW YORK N.Y. DEC 27, 1921

INVENTOR

ARTHUR C. DALE

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Fig. 2.

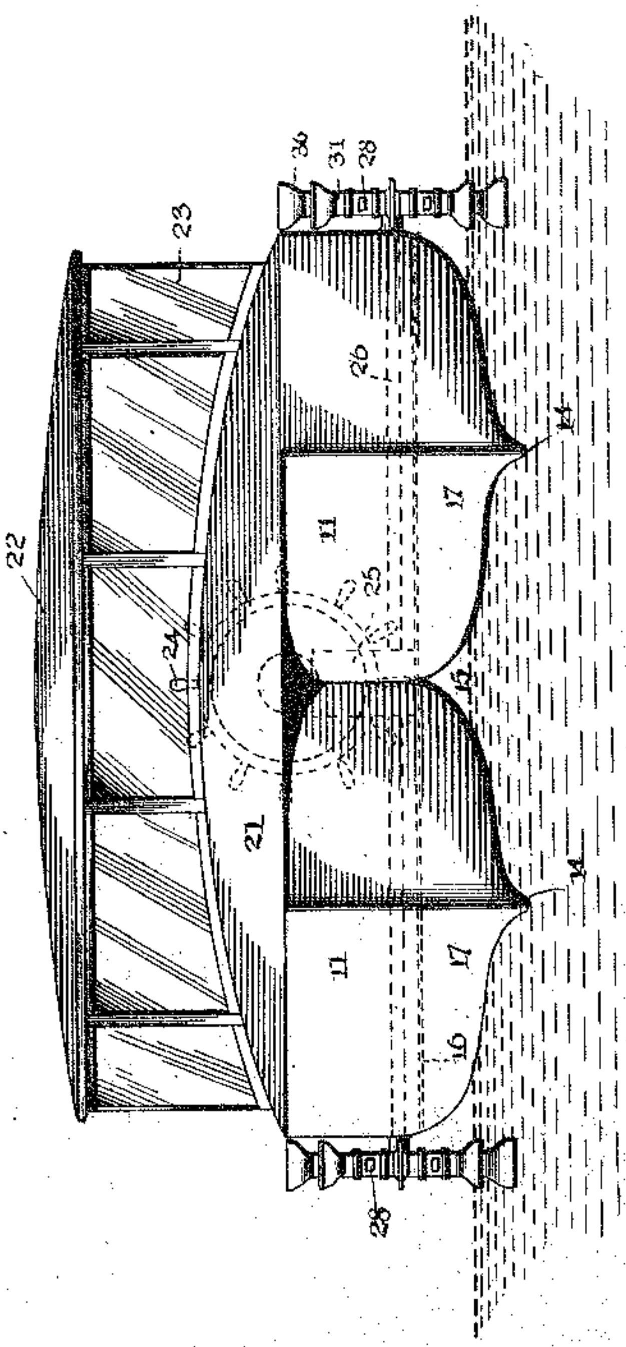
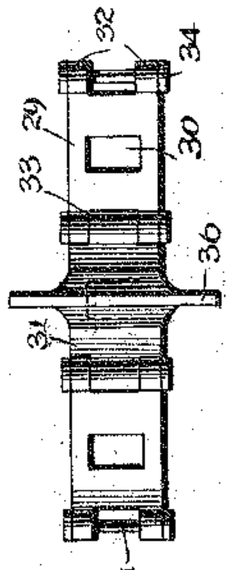


Fig. 4.



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NEW YORK NY. DEC 27, 1921

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