

J. T. BALDWIN.
PROPELLER.

No. 473,374.

Patented Apr. 19, 1892.

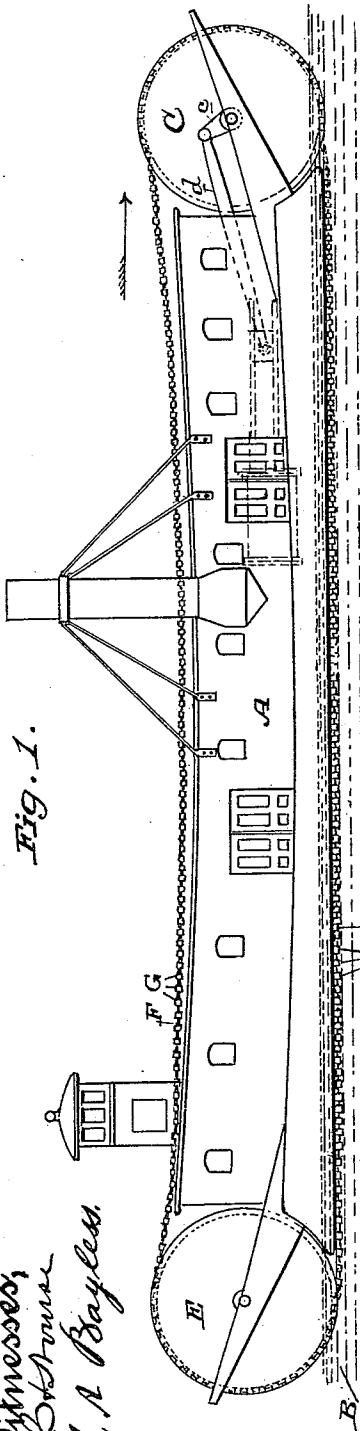
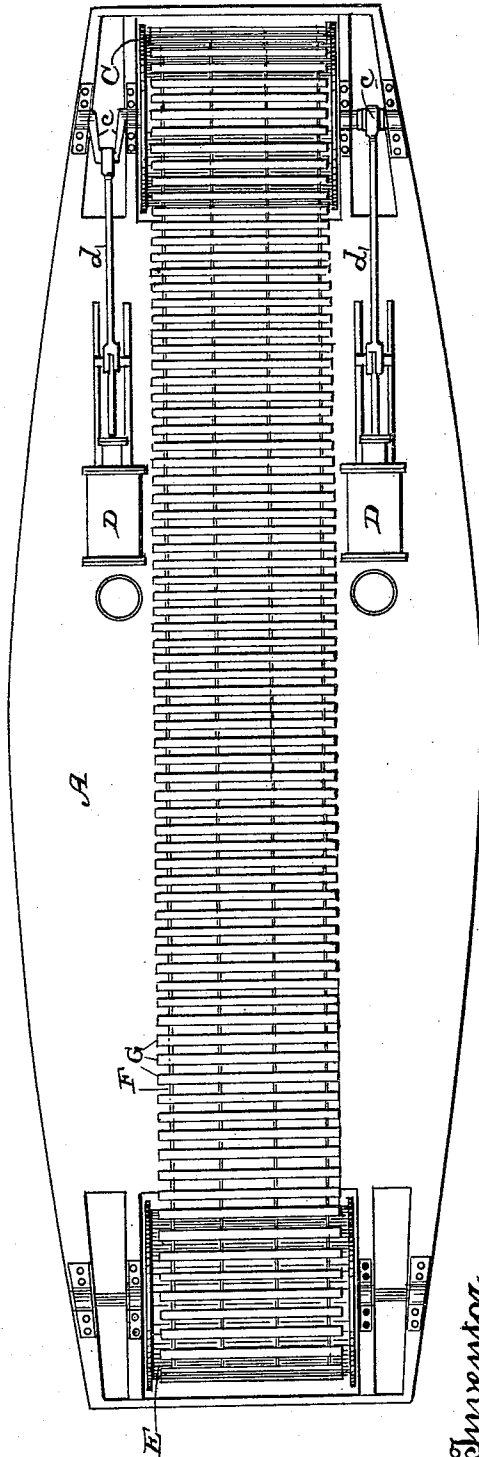


Fig. 1.

Witnesses,
G. A. Brown
J. A. Payless.

Fig. 2.



Inventor,
John T. Baldwin
By Dewey & Co., attys

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

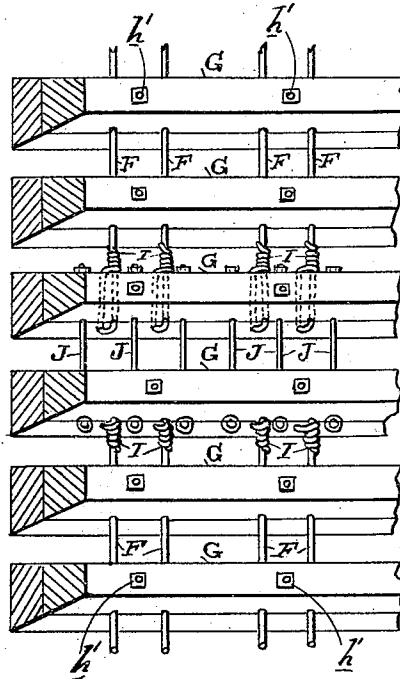
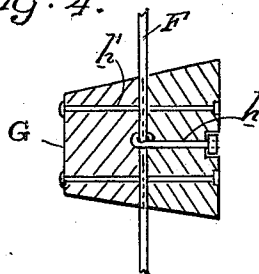


Fig. 4.



Witnesses,
B. Sturges
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UNITED STATES PATENT OFFICE.

JOHN T. BALDWIN, OF PETALUMA, CALIFORNIA.

PROPELLER.

SPECIFICATION forming part of Letters Patent No. 473,374, dated April 19, 1892.

Application filed July 25, 1891. Serial No. 400,758. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. BALDWIN, a citizen of the United States, residing at Petaluma, Sonoma county, State of California, have invented an Improvement in Propellers; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of propellers for vessels; and it consists in an endless belt mounted upon end drums at the bow and stern of the vessel, said belt extending and traveling longitudinally of the vessel under its bottom and carrying a series of paddles.

It also consists in certain novel details of construction and arrangement which will be hereinafter fully described, and specifically pointed out in the claims.

The object of my invention is to provide a simple and effective propeller, especially adapted for use with comparatively flat-bottomed vessels.

Particular advantages of my propeller will be hereinafter set forth in connection with the description thereof.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a side elevation of a vessel, showing my propeller. Fig. 2 is a top view of same. Fig. 3 is a perspective detail of the propeller. Fig. 4 is a cross-section of one of the paddles.

A represents a vessel, and B is the water in which it floats.

C is a drum at the bow of the vessel, suitably housed and protected. This drum is driven in any suitable manner, as by the side engines D, connecting-rods *d*, and cranks *c* of the drum-shaft. This is but one form of driving mechanism, and I do not confine myself to it, as many other forms may be used. At the stern of the vessel is another drum E, suitably mounted and protected. Over these drums passes and travels my endless-belt propeller. This is constructed of wires F or other suitable bands, belts, or cables, to which are secured the series of paddles G. This endless-paddle propeller extends longitudinally of the vessel and travels in the direction of the arrows—that is to say, forwardly over the forward drum C and under said drum—taking the water on a backward course, thence passing in the water under the longitudinal

center of the vessel to the rear drum, up and around which it passes over the top of the vessel to the point of beginning. This endless-paddle propeller may be made in various ways, the principle feature being its location in the middle length of the vessel from end to end thereof. I prefer, however, to make it, as here shown, of a number of parallel wires or cables, to which are secured transversely the paddles, each consisting of two parts grooved to the wires or cables and held thereto by hook-bolts *h* and by long rivets *h'*, as shown, so that said paddles are double ones, extending on each side of the wires. This construction enables them to be readily secured to the wires and easily removed for the purpose of substituting others when needed. The ends of the belt are joined by passing the ends of the wires through the end paddles and bringing them back and twisting said ends upon themselves, as shown at I, and further by joining the two end paddles by bolts J. This renders the entire belt an adjustable one, so that its length may be varied as may be desired. The belt is a wide one, extending pretty nearly the entire width of the hull of the vessel. The paddles are placed near together, being separated by a distance about equal to their width.

The propeller is specially adapted for flat or nearly straight bottomed vessels of uniform width of hull. The end drums, over which the propeller passes, are flanged and are housed, so as to be practically water-tight, and said drums are the full width of the vessel's hull. Their diameters should be about six times the draft of the loaded vessel. The endless-paddle propeller sweeps the whole bottom of the vessel and is kept in place by its own buoyancy and by suitable guides on each side of the vessel's bottom. The upper part of the propeller swings clear between the two end drums above the upper deck, and by being adjustable as to length its friction on the drums may be regulated to use the whole power of the engines.

Ordinary vessels when running in rivers at good speed are pushed by their propelling devices against the water, causing the latter to rise several hundred feet ahead of them, to fall nearly a foot abreast of them, and to pile up behind them in large waves, giving motion to a large weight of water constantly.

In the ocean the same effect is produced, though not so apparent, as is seen by the long widening side waves, the bulge in front, and the large waves behind, and the strong motion of the wake of the vessel requiring a good portion of the power to give motion to so much water.

By the use of my propeller the water is beaten down in front by the paddles as fast as the vessel comes to it. The paddles take a good grip on the water the whole length and width of the vessel and in the deepest and best place.

In practice at a moderate speed and in still water there is no forward or side motion and but little back motion in the wake, thus economizing power in a great degree and attaining higher speed.

I am aware of endless belts provided with paddles and mounted on each side of the vessel similarly to ordinary side paddle-wheels, differing only in being elongated or elliptical instead of circular; but this is not my invention, as the effect produced by these side propellers is not the same as that produced by my propeller, which beats down the water in front and avoids the necessity of the vessel pushing so much water in front of it, these advantages not being present with the side propellers referred to.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A propeller for vessels, consisting of drums at the bow and stern of the vessel, the series of endless parallel wires or cables passing over said drums and longitudinally under and above the vessel, the transverse paddles

formed of two parts bolted together and having the wires or cables passing through them, and the bolts *h*, passing into the paddle-sections and having hooked inner ends embracing the wires or cables, substantially as herein described.

2. A propeller consisting of drums at the bow and stern of the vessel, an endless belt located in the middle length of the vessel from end to end thereof and passing around the drum and above and below the vessel, said belt consisting of parallel wires or cables and the two-part paddle-sections, through the central portions of which the wires or cables pass, whereby the paddles extend each side thereof and form double paddles, and means for securing the paddle-sections, substantially as herein described.

3. A propeller for vessels, consisting of drums at the bow and stern of the vessel, the series of endless parallel wires or cables passing over said drums and longitudinally under and above the middle length of the vessel, and the transverse two-part paddles secured together and grooved at their meeting surfaces to receive the wires or cables, said wires or cables having their ends passed through the paddles and thence returned and twisted upon themselves, whereby an adjustable connection is formed, substantially as herein described.

In witness whereof I have hereunto set my hand.

JOHN T. BALDWIN.

Witnesses:

S. H. NOURSE,

J. A. BAYLESS.