No. 665,543. Patented Jan. 8, 1901.

W. McMEANS.

PROPELLER.

(Application filed Apr. 26, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

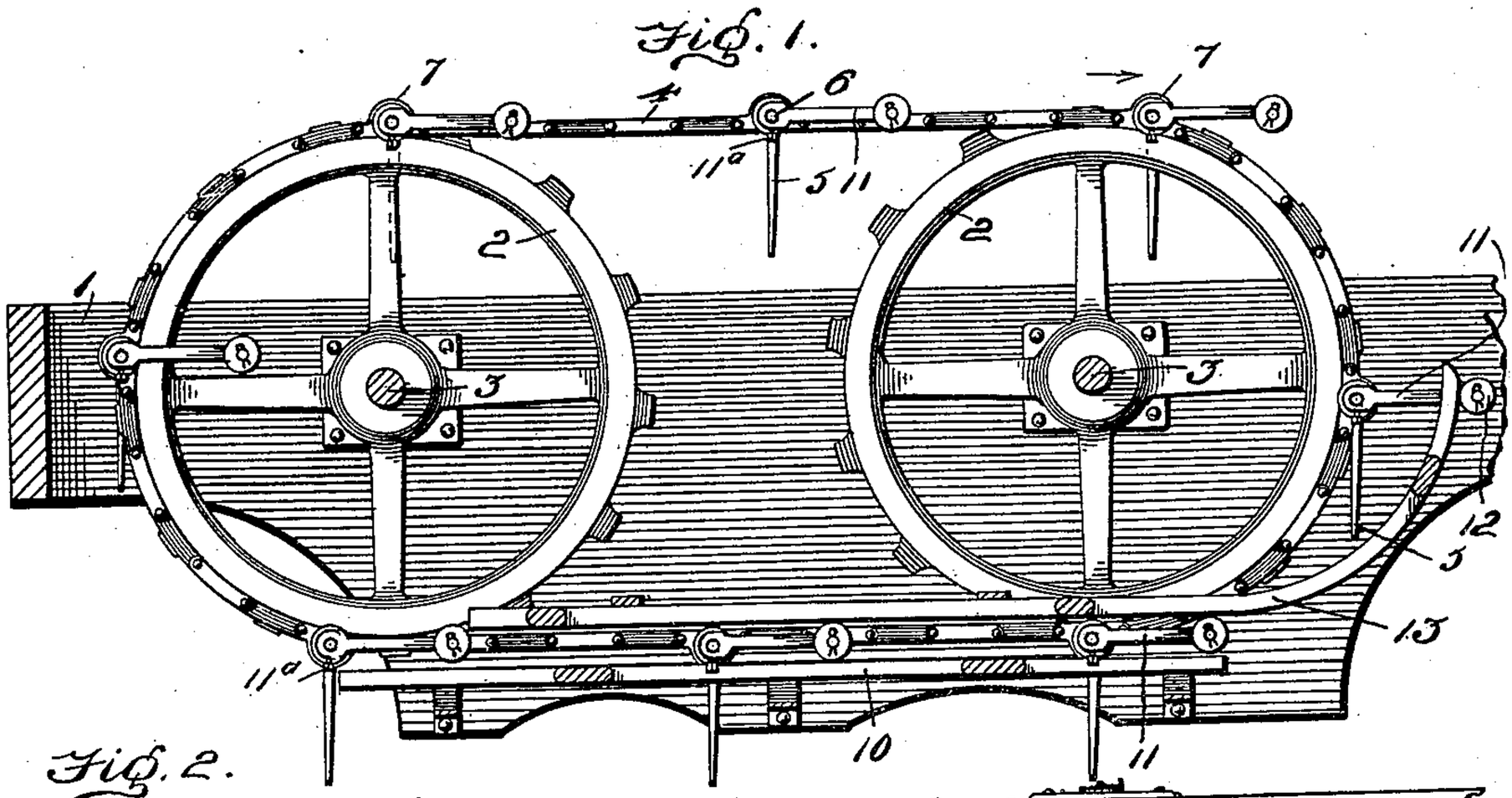

Fig. 2.

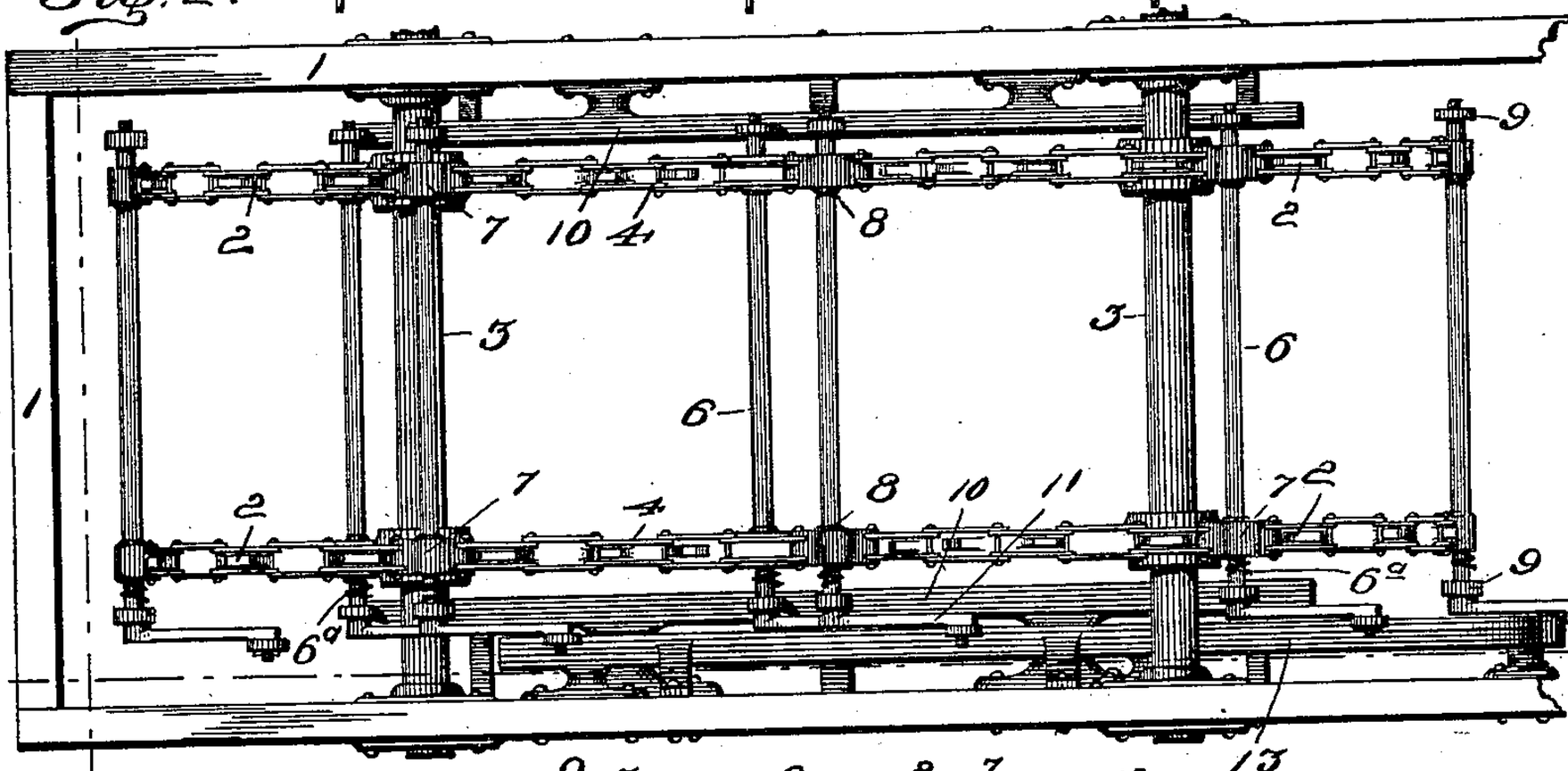

Fig. 4.

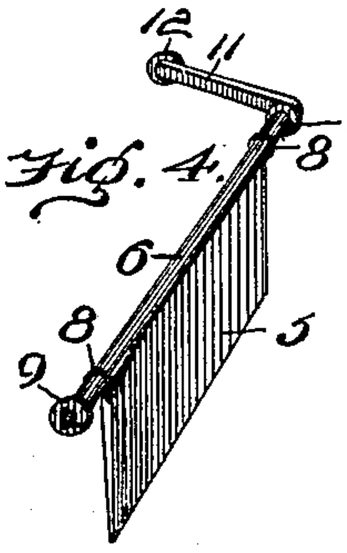

Fig. 3.

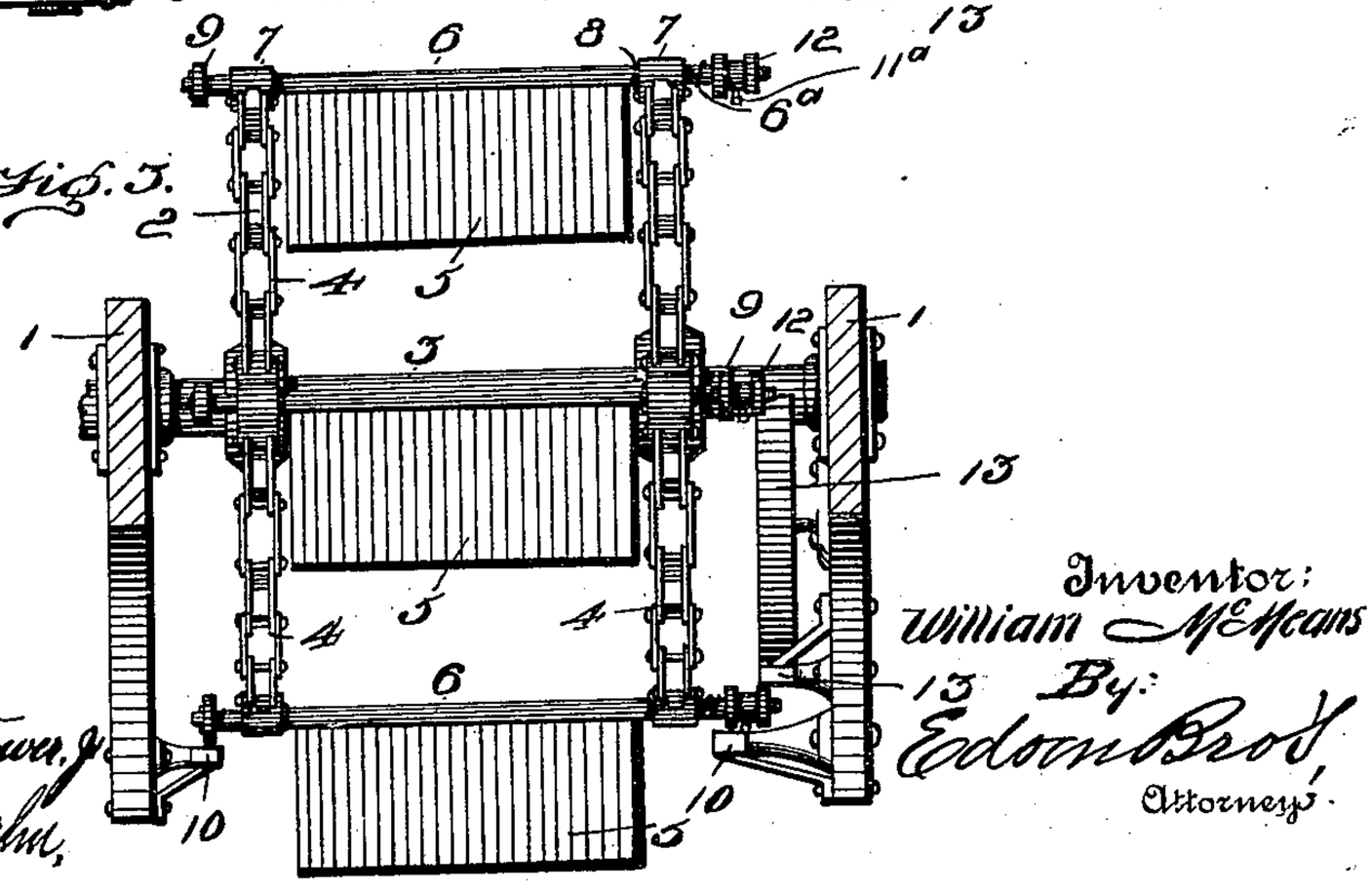

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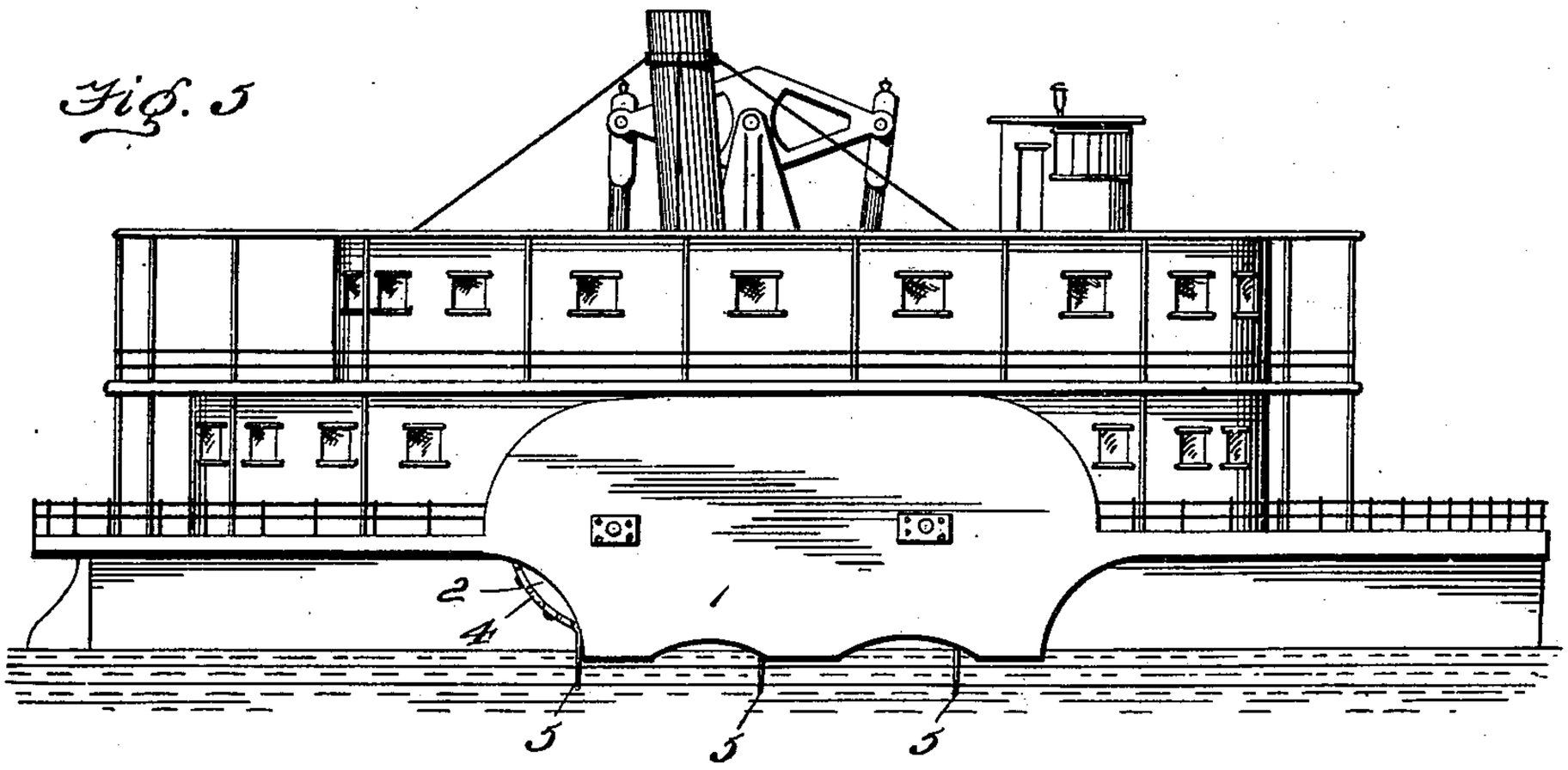
Fig. 3



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UNITED STATES PATENT OFFICE.

WILLIAM McMEANS, OF WASHINGTON, DISTRICT OF COLUMBIA.

PROPELLER.

SPECIFICATION forming part of Letters Patent No. 665,543, dated January 8, 1901.

Application filed April 26, 1900. Serial No. 14,458. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM McMEANS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Propellers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to propellers for marine and other purposes, having special reference to the class of endless-chain propellers. It has for its objects to cause the blades to maintain a position at all times at right angles or perpendicular to the line of movement or travel, said blades therefore entering and leaving the water, as when applied for marine purposes, with the minimum friction or resistance and presenting the maximum propelling area or surface thereto, and to provide for the effective retention of the blades in their operative or working position.

To these ends my invention consists of the combination of certain parts, including their construction and arrangement, substantially as hereinafter more fully disclosed, and specifically pointed out by the claims.

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a longitudinal section. Fig. 2 is a plan view. Fig. 3 is a transverse section. Fig. 4 is a detached perspective view of a blade or propeller. Fig. 5 is a view showing my propeller as applied for the propulsion of a steamboat.

Latitude is allowed herein as to details, as they may be changed or varied as occasion may require without departing from the spirit of my invention and the same yet remain intact and be protected.

In carrying out my invention I mount or support in a suitable frame 1, properly spaced or disposed apart, what may be termed "sprocket" or "rag" wheels 2 2, with their shafts or axles 3 suitably journaled in said frame and either of which is driven by being properly geared up to the engine or motor shaft, and thus actuating the propeller. These wheels are encompassed by endless chain belts 4, with their links adapted to receive or engage the teeth or cogs of said wheels and carrying propeller-blades 5, integral or in one with transverse rods or bars 6 and feathering or tapering toward their free or outer edges, thus cutting or entering the water, as when applied for marine purposes, with reduced resistance. The rods or bars 6 are extended laterally or endwise to provide for their attachment to said chain belts, preferably by passing said bars or rods through and enabling them to turn or pivot and the blades to maintain a perpendicular position at all times in eye or apertured castings 7, sandwiched between or interconnected with the links of said chain belts at suitable intervals apart. Said rods or bars are preferably cast or formed close up to the lateral edges of the blades or propellers 5 with collars or shoulders 8, adapted to oppose the inner edges of the eye-castings 7 to prevent endwise or lateral displacement of the rods, consequently preventing or guarding against like movement or displacement of the blades or propellers. The rods or bars 6 are also provided at their outer ends with freely-turning rolls or bearings 9 to reduce frictional contact where they travel or bear upon a way or track 10, suitably secured or bracketed to the inner sides of the frame 1 for that purpose. The rods or bars 6 are also provided each at one end with a crank or arm 11, normally at an angle to the plane of the blades or propellers, with a freely-turning roll or bearing 12 thereon, adapted to travel, during the descent of the blades and their passage through the water, in contact with a guide or guard 13, suitably secured or bracketed to the frame. The angle of said arms may be varied as occasion may require by the use of set-screws 11^a, adapted to hold said arms to said rods or bars, as readily seen.

The guide or guard 13 is suitably curved at its normally forward end upward above the point of submergence to effect the retention of the blades or propellers in perpendicular position as against the action of the water as said blades enter the water and during initial submergence. The guide or guard 13 is extended below its curved forward end portion horizontally a suitable distance rearward to retain or hold the arms or cranks down, in turn holding the blades or propellers perpendicularly as against the resistance or pres-

sure of the water, thus providing for the effective retention of the blades or propellers in their operative or working position. If desired, the guide or guard 13 may also be curved at its rear end. Around or upon the rods or bars 6 may be applied suitable springs 6^a, each with one end connected or secured to the rod and the other end secured to, say, the eye or apertured casting 7 to prevent any unnecessary oscillation or swinging of the propellers or blades as the arms of said rods rise out of contact or engagement with the guide or guard.

In Fig. 5, as before intimated, I have shown my invention utilized in connection with the propulsion of a steamboat.

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

1. In a device of the character described, the combination of endless belts, their encompassed wheels, pivotally-suspended blades or propellers with their pivoting or suspending rods engaging eye or apertured castings interconnected with the links of said belts, and springs arranged upon said bars or rods, and secured to said rods or bars and castings, respectively, substantially as set forth.

2. In a propeller of the character described, the combination of endless belts carrying pivotally-suspended propeller-blades, wheels encompassed by said belts, and a guide or guard, the propeller-blade suspending or pivoting rods or bars having adjustable cranks or arms adapted to engage said guide or guard, substantially as set forth.

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

WILLIAM McMEANS.

Witnesses:
W. PERRY HAHN,
MARGARETTA JACKSON.