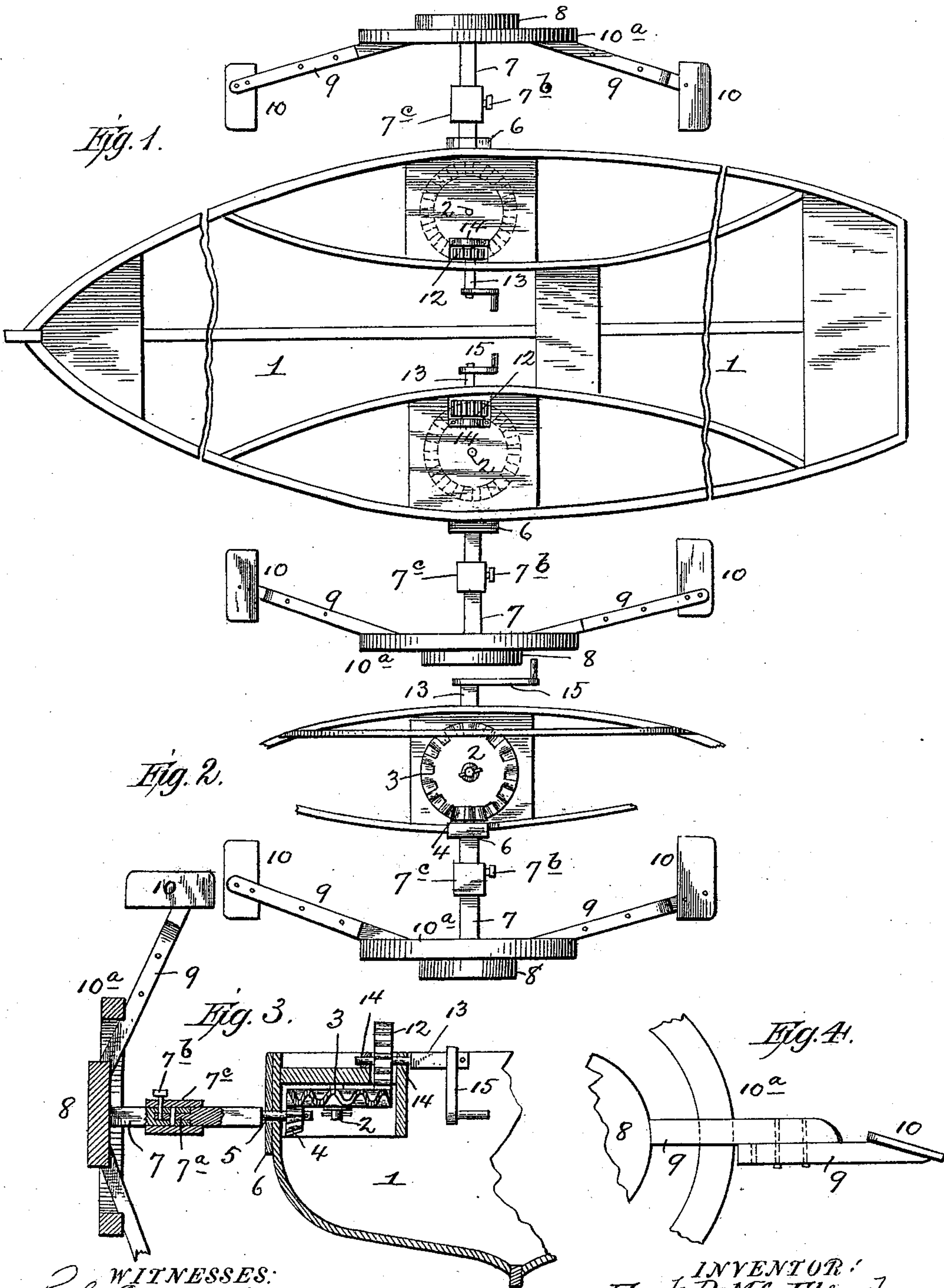


(No Model.)

F. P. McELFRESH.  
BOAT PROPELLER.

No. 518,072.

Patented Apr. 10, 1894.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

FRANK P. McELFRESH, OF KIMBALLTON, IOWA.

## BOAT-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 518,072, dated April 10, 1894.

Application filed July 17, 1893. Serial No. 480,726. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK P. McELFRESH, a citizen of the United States, and a resident of Kimballton, in the county of Shelby and State of Iowa, 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 boat propellers, and its object is to provide an improved construction of the same which shall possess superior advantages with respect to efficiency in use.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings: Figure 1 is a plan view of a boat with my improvements applied thereto. Fig. 2 is a detail bottom view. Fig. 3 is a detail sectional view. Fig. 4 is a detail view of one of the adjustable arms and its paddle.

In the said drawings, the reference numeral 1 designates the boat which may be of any ordinary construction. Journaled on a depending shaft 2, secured to the boat at each side thereof is a crown-wheel 3 which meshes with a pinion 4 on a shaft 5 journaled in bearings 6. Pivoted to the outer end of this shaft 5 is a shaft 7, the inner end of which is bifurcated and provided with a hole or aperture. In the bifurcated end of this shaft fits the reduced end 7<sup>a</sup> of shaft 5, which is formed with an aperture registering with the apertures in shaft 7. These shafts are connected together by a removable pin 7<sup>b</sup> which passes through an aperture in a slidable sleeve 7<sup>c</sup> embracing the ends of said shafts and also through apertures in said ends. The outer ends of shafts 7, are provided with hubs 8, to which are adjustably secured a series of inclined arms 9 provided with paddles 10,

which arms are braced and held in place by a ring 10<sup>a</sup>. Also meshing with the crown-wheel 3 is a pinion 12 on a shaft 13, journaled in bearings 14. This shaft is provided with a crank 15.

The operation will be readily understood: To propel the boat, the shaft 13 is rotated by means of the crank, which through the medium of the crown-wheel, pinion 4, and the shafts, rotates the hub 8 and paddles 10; the operation being similar to any ordinary paddle wheel. When the boat is not in use the pins 7<sup>b</sup>, are removed, the sleeves slipped outwardly so that the paddles can be turned up over the boat and secured so that they cannot be operated.

It will be noticed that the arms 9 are adjustable so that their length may be regulated, and the object of having them inclined inwardly is to prevent injury thereto by coming into contact with other objects.

Having thus described my invention, what I claim is—

1. The combination with a boat of the horizontal crown-wheels, the transverse shafts having a pinion engaging with said crown-wheels, the shafts pivoted to said transverse shafts, the hubs carried thereby, the inwardly inclined adjustable arms secured to said hubs and provided with paddles, the pinions meshing with said crown-wheels and their shafts and cranks; substantially as described.

2. The combination with a boat, of the rotatable shafts at each side thereof, and means for operating the same, the shafts pivoted thereto, the slidable sleeves, the removable pins for holding said sleeves in place, the hubs, the inwardly inclined arms having paddles and the brace ring; substantially as described.

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

FRANK P. McELFRESH.

Witnesses:

JOSEPH STILES,  
J. B. WHITNEY.