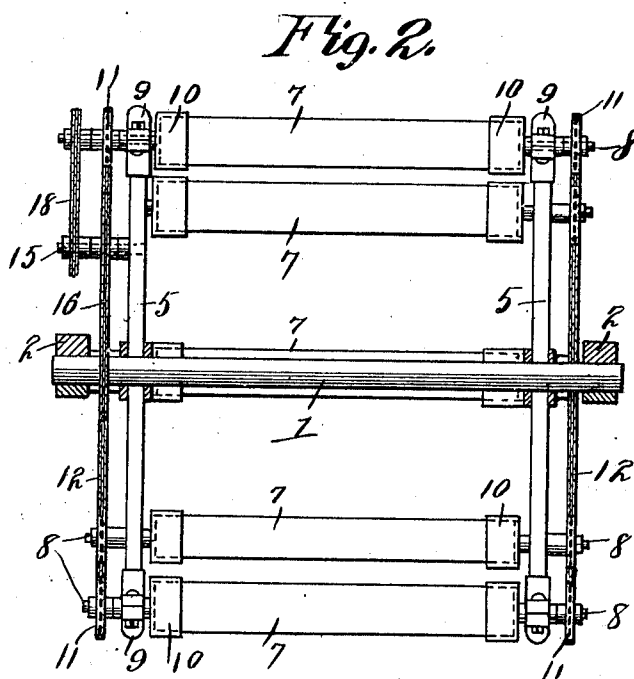
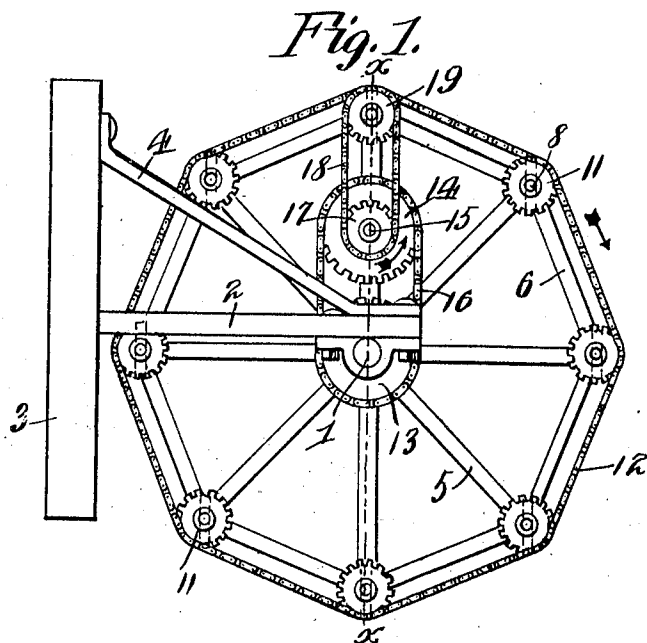


R. P. ROBINSON.
 WATER WHEEL.
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Patented May 3, 1910.



Witnesses
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ROY P. ROBINSON, OF BRILLIANT, OHIO.

WATER-WHEEL.

957,099.

Specification of Letters Patent.

Patented May 3, 1910.

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To all whom it may concern:

Be it known that I, ROY P. ROBINSON, a citizen of the United States, residing at Brilliant, in the county of Jefferson and State of Ohio, have invented new and useful Improvements in Water - Wheels, of which the following is a specification.

This invention appertains to propeller wheels of the variety embodying feathering blades or paddles which enter the water perpendicularly and leave the water in the same direction and which in their travel through the water present a maximum amount of surface with the result that a major amount of effective work is performed.

The invention provides novel mountings and connecting means between the series of feathering blades or paddles of water wheels of the type aforesaid so as to insure the paddles at all times maintaining a perpendicular position with the result that the water is not churned to any appreciable extent or large waves produced in the wake of a boat or other water craft.

It is to be understood that while the invention is particularly adapted for water wheels designed for the propulsion of water craft, nevertheless it may be advantageously adopted in the construction of motor wheels either for current power or for running streams.

The invention consists of the novel features, details of construction and combinations of parts which hereinafter will be more particularly set forth, illustrated in the accompanying drawings and pointed out in the appended claim.

Referring to the drawings: Figure 1 is an end view of a water wheel and mountings embodying the invention. Fig. 2 is a vertical central section thereof on the line $x-x$ of Fig. 1.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The wheel comprises an axle or shaft 1 which is mounted in suitable bearings. In the present instance beams 2 form supporting means for the shaft 1 and are firmly attached to uprights 3 and are strengthened by means of braces 4. The shaft 1 is horizontally arranged and is provided near each end with a support consisting of arms 5 and intermediate connecting bars 6, said arms 5 radiating from a hub or other support fast

to the shaft 1. The blades or paddles 7 are provided at their ends with journals 8 which are mounted in bearings 9 at the outer ends of the arms 5. The paddles or blades 7 may be of any material and usually consist of wooden strips or boards. The journals 8 are provided at their inner ends with sockets 10 which receive the end portions of the paddles and the outer ends of said journals are supplied with sprocket wheels 11. The sprocket wheels 11 are of uniform size and are connected to cause them to rotate in unison and at such relative speeds as to hold the paddles in perpendicular position at all stages of the revolution of the water wheel. While it is proposed to connect the sprocket wheels 11 in any convenient way, sprocket chains 12 are illustrated as the preferred form of connection, since the parts are prevented from slipping and the construction is of the simplest nature.

A gear wheel 13 is fast to the mounting of the water wheel and is relatively stationary. A sprocket wheel 14 equal in diameter to the gear wheel 13 is mounted upon an arm of the water wheel so as to rotate therewith and to have an independent rotary movement about its axis. A shaft or spindle 15 is secured to an arm or other convenient part of the water wheel and receives the sprocket wheel 14 which is loosely mounted thereon. A sprocket chain 16 connects the gear wheels 13 and 14. A sprocket wheel 17 concentric with the shaft or spindle 15 is mounted so as to rotate with the sprocket wheel 14 and may be connected thereto in any manner or formed therewith. A sprocket chain 18 connects the sprocket wheel 17 with a sprocket wheel 19 fast to one of the journals 8 so as to rotate therewith. The several sprocket wheels 11, 17 and 19 are of like diameter, hence, rotate at a uniform speed.

When the water wheel is in motion, the sprocket wheel 14 rotates therewith and by reason of its connection by means of the sprocket chain 16 with the gear wheel 13, the latter being stationary, the sprocket wheel 14 is caused to turn upon the shaft 15 at a like speed corresponding with the movement of the water wheel about its shaft 1. By reason of the connections, the sprocket wheel 14 is rotated in an opposite direction to the rotation of the water wheel as indicated by the arrows in Fig. 1.

It is to be understood that in proportioning and arranging the parts, the paddles 7

are set so as to occupy a vertical position which is maintained at all times during the operation of the wheel, hence, the paddles enter and leave the water perpendicularly and move through the water broad-side so as to offer a maximum amount of resisting surface whereby a major amount of effective work is performed. By having the paddles enter the water and leave the same in a perpendicular direction, they offer a minimum amount of resistance, hence, detract but very little from the primary force extended for driving the water wheel when the latter is used as a propeller.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made when desired as are within the scope of the claim appended hereto. It is also understood that the working parts may be connected in any manner to effect the results stated, although the means shown are preferred.

Having thus described the invention, what is claimed is—

In combination beams, a shaft mounted

upon said beams, supports secured to opposite end portions of the shaft to rotate therewith, journals mounted upon said supports near the outer edges thereof and in position so that the journals upon one support aline with the journals upon the other support, said journals having sockets at their inner ends, sprocket wheels secured to the outer ends of said journals, paddles having their end portions secured in the sockets of opposite journals, sprocket chains connecting the sprocket wheels of the two sets of journals, one of said journals having an extension, a sprocket wheel secured to said journal extension, a sprocket wheel concentric with said shaft and fastened to one of the said beams, a second sprocket wheel rotatably mounted upon one of the supports and of a diameter equal to the fixed sprocket wheel, a sprocket chain connecting the two sprocket wheels, a sprocket wheel fast to the sprocket wheel mounted upon said support and equal in diameter to the sprocket wheel mounted upon the aforesaid journal extension, and a sprocket chain connecting the sprocket wheels of the journal extension and the rotatable sprocket wheel mounted upon said support.

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

ROY P. ROBINSON.

Witnesses:

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W. R. FLEMING.