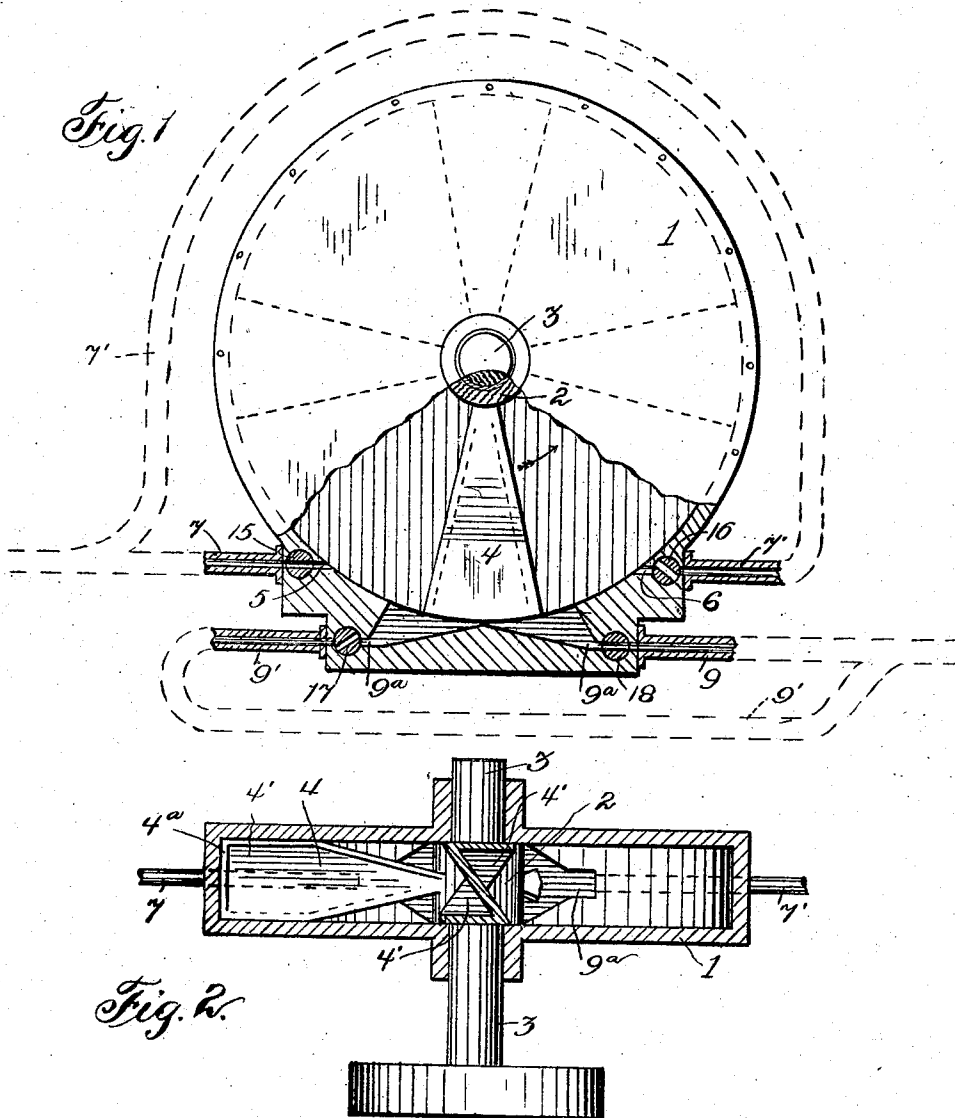


No. 858,635.

PATENTED JULY 2, 1907.

E. J. ST. CROIX.  
REVERSIBLE MOTOR.  
APPLICATION FILED APR. 3, 1906.



Inventor

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Witnesses

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# UNITED STATES PATENT OFFICE.

EDWARD J. ST. CROIX, OF SEATTLE, WASHINGTON.

## REVERSIBLE MOTOR.

No. 858,635.

Specification of Letters Patent.

Patented July 2, 1907.

Application filed April 3, 1906. Serial No. 309,702.

*To all whom it may concern:*

Be it known that I, EDWARD J. ST. CROIX, a citizen of the United States of America, and a resident of the city of Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Reversible Motors, of which the following is a specification.

My invention has for its primary object the provision of a motor of the fluid operated type which will be efficient in operation, and which can be quickly and easily reversed, when desired.

With the above and other objects in view, to be referred to in the following description, the invention consists of the construction, arrangement and combinations of parts hereinafter described and succinctly defined in the appended claims.

In the accompanying drawing, in which like numerals of reference indicate like parts throughout the several views: Figure 1 is a side view, parts being broken away, of a motor constructed in accordance with my invention. Fig. 2 is a top view, with the casing and wheel in section.

Referring to the drawing, 1 indicates the casing and 2 the wheel which is mounted therein for rotation on a shaft, as 3. Wheel 2 consists of a suitable hub to which radial blades or arms 4 are rigidly secured. These blades or arms gradually increase in width from their inner ends and are approximately Z-shaped in cross section so as to provide recesses or impact portions 4', one being provided on each side or face of the respective blades or floats, thereby adapting the same to be acted upon, in an efficient manner, by the water or other fluid when the latter is directed against either of their sides or faces. The outer ends of the recesses or impact portions 4' are closed by end flanges 4<sup>a</sup> of the blades.

Reference numerals 5 and 6 indicate ingress or intake

openings formed in the casing at opposite sides of the wheel 2 and in proximity to the lower portion thereof and communication is established between these openings and a suitable source of supply (not shown), from which the fluid flows under pressure, through the medium of pipes 7, 7'.

Reference numerals 9, 9' indicate the discharge pipes leading from discharge ports 9<sup>a</sup> of the casing. Suitable valves 15 and 16 are provided in the inlet ports 5 and 6 and suitable valves 17 and 18 are provided in the outlet ports 9<sup>a</sup>—9<sup>a</sup>.

In operation, valve 15 is opened, and valve 16 closed, whereby a stream of water is directed against one of the impact portions 4' of the wheel, to drive the same forward. Valve 17 is closed and the utilized water is discharged through open valve 18. To reverse the direction of rotation of the wheel, inlet valve 15 is closed and inlet valve 16 opened permitting the water to be directed against the opposite impact portion 4' of the wheel, and outlet valve 18 being closed, the discharge will be through outlet valve 17.

A motor constructed in accordance with my invention is simple, the several parts thereof can be readily disassembled for purposes of transportation and is comparatively inexpensive to manufacture.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States of America, is:—

In a fluid motor, a blade for the wheel thereof, said blade being approximately Z-shaped, thereby providing opposite recesses or impact portions on its opposite sides or faces.

Signed at Seattle, Washington this 28 day of March 1906.

EDWARD J. ST. CROIX.

Witnesses:

G. G. ENGLAND,  
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