

(No Model.)

J. A. WALKER.  
WATER MOTOR.

(Application filed Jan. 13, 1898.)



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# UNITED STATES PATENT OFFICE.

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## WATER-MOTOR.

SPECIFICATION forming part of Letters Patent No. 616,278, dated December 20, 1898.

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*To all whom it may concern:*

Be it known that I, JOSEPH A. WALKER, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Water-Motors; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates more especially to water-motors employing cables in their construction; and it consists in the novel construction and combination of parts, such as will be first fully described and then specifically pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a water-motor, showing the cable-carrying wheels and my improved cable applied thereto. Fig. 2 is a detail side view of a portion of the blade-carrying endless cable with a portion of the wire strands broken away to show the rubber core.

Similar letters of reference indicate corresponding parts in both figures.

Referring to the drawings, A represents a water-motor, in which *a a* are the separate side floats and *a'* the sluiceway between the floats.

B B are separate cable-carrying wheels at each end and near one of the side floats of the water-motor, each wheel being suitably mounted upon a shaft *b* in sliding journal-boxes *b<sup>2</sup>* upon the standards *b<sup>3</sup> b<sup>3</sup>* on each float.

The wheels B B are arranged in pairs on the separate shafts at each end of the floats, so as to carry separate endless cables, the wheels B B as shown upon one side of the motor, however, being sufficient to illustrate the invention.

The energizing force of the water is obtained in my invention through the medium of a flexible blade-carrying cable C, which is constructed as follows: I first prepare the core *c* of the cable from sheets of pure rubber of suitable length to form the core to the

cable, which rubber is rolled from one longitudinal edge portion and closely folded or united, so as to form a convoluted body or core, around which core the wire forming the covering to the cable is twisted in a series of strands. The core may be formed of vulcanized india-rubber. The pure rubber, however, is better adapted to resist the effects of the cold temperature. When the sheet of rubber is thicker than ordinary, the core may be formed by a single fold. I thus obtain a flexible or pliable cable impervious to water and which will resist the action of heat and cold to disintegrate the rubber. It will be observed that this core, being composed of sheets of folded rubber, will remain pliable, and thus the friction and a large per cent. of the power to operate the cable are saved. Furthermore, the core will not grow hard and brittle from the effects of the cold and break under the strain applied to the cable, as is the case with molded rubber.

With my improved cable the motor may be operated at all seasons of the year without danger of becoming rigid when enveloped in ice.

My invention also adds to the life of the cable and adapts it for various uses. In its application to the water-motor one end of the cable is extended over one wheel B at one end of the floats and the other end over the other wheel B at the other end of the floats and the two ends connected together in the usual manner, said wheels B B being each grooved circumferentially to receive the cable. The blades D are connected with the separate cables in the usual manner. The wheels B B are each notched at *b<sup>x</sup>* to receive the blade-clamping plates *d*, which may be employed or not, as the exigency requires. The power is conveyed from the wheels B B when the blades D are in the sluice *a'* to the speed-pulleys F through the cable E, and thence to the dynamo or generator of electricity G through cable H.

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

1. A flexible cable the core of which is



composed of a sheet of rubber in a convoluted body.

2. In a water-motor comprising side floats having an intermediate sluice, the combination with power-conveying wheels at each  
5 end of said floats extending within said sluice of a flexible cable extending over the respec-

tive power-conveying wheels said cable having a core composed of convoluted sheets of rubber.

JOSEPH A. WALKER.

Witnesses:

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