

(No Model.)

2 Sheets—Sheet 1.

J. J. DECKER.
WATER WHEEL.

No. 494,127.

Patented Mar. 28, 1893.

Fig. 1.

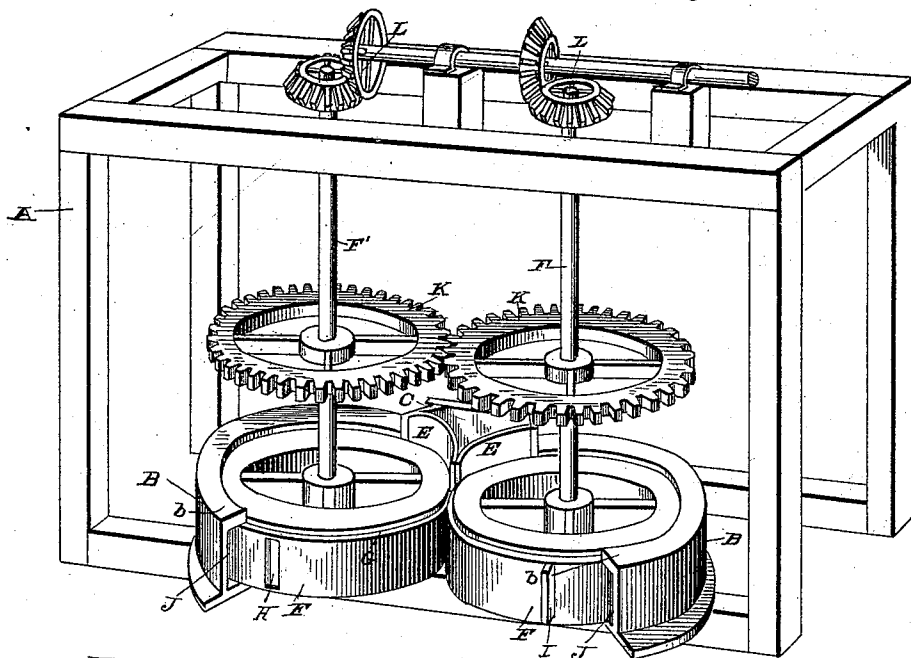
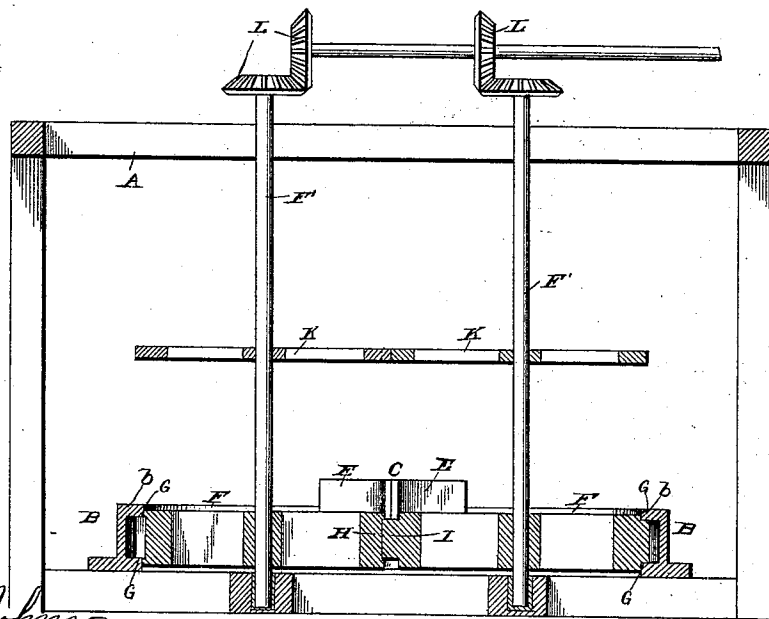


Fig. 2.



Witnesses

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2 Sheets—Sheet 2.

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Fig. 3

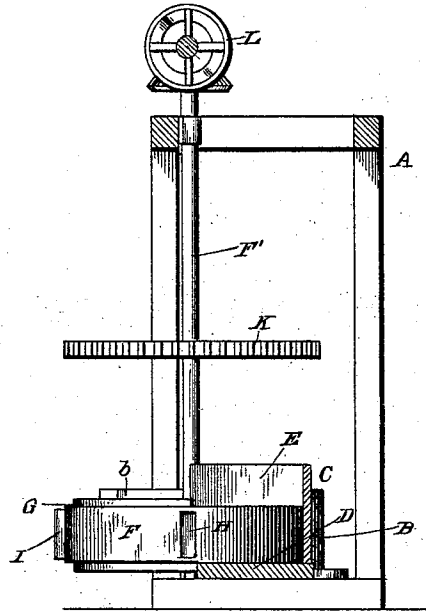


Fig. 4.

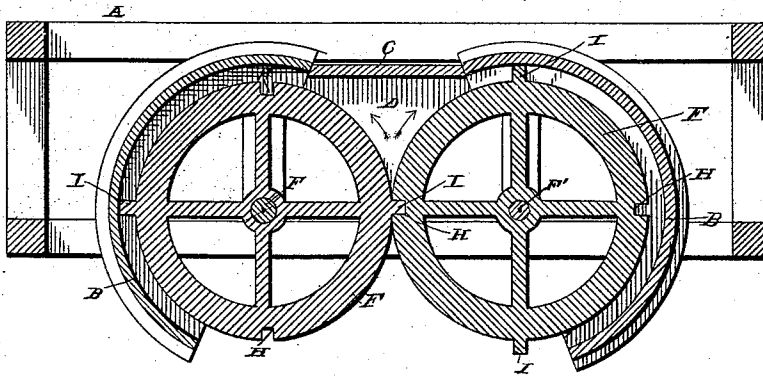
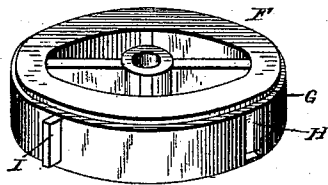


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN J. DECKER, OF LIVINGSTON MANOR, NEW YORK.

WATER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 494,127, dated March 28, 1893.

Application filed July 16, 1892. Serial No. 440,228. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. DECKER, a citizen of the United States, residing at Livingston Manor, in the county of Sullivan and State of New York, have invented a new and useful Water-Wheel, of which the following is a specification.

This invention relates to water wheels; and it has for its object to provide an improved construction of water wheels in connection with particular appurtenances thereof which combine to form an improved hydraulic motor which utilizes the head of water to its fullest extent whether such head of water be great or small.

To this end the main and primary object of this invention is to simplify the construction of water wheels and motors of the type herein described and to render their operation more steady and accurate.

With these and many other objects in view which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a perspective view of a hydraulic motor constructed in accordance with this invention. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a vertical transverse sectional view. Fig. 4 is a horizontal sectional view through the wheels and wheel casings. Fig. 5 is a detail in perspective of one of the water wheels.

Referring to the accompanying drawings;—A represents a suitable frame upon the base of which is secured the opposite semi-circular or segmental wheel casings B. The said semi-circular or segmental wheel casings B are provided with the short inwardly extending flanges *b* and are connected at their nearest ends by the triangular water inlet box C provided with a triangular base D and the upper angular curved sides E corresponding to the base D and arranged above the same so that the water wheels F may move between such base and said sides. The said water wheels F are mounted upon the vertical shafts F' and are provided with the upper and lower encircling annular shoulders G upon the outer edges of the same which shoulders receive the

inner corners of the inwardly projecting flanges *b* of the wheel casings, the upper edges of the triangular base D of the box C and the lower edges of the upper sides E of the same box, so that a water tight joint is formed between the wheels and their respective casings and the single central receiving box into which they project and revolve. The wheels F are adapted to revolve in opposite directions to each other under the impulse of the water and are each provided with a series of alternate pockets H and projecting buckets I, the projecting buckets of one wheel being so disposed as to enter the pockets of the adjacent wheel, said wheels meeting each other at their central point at one side of the water box C feeding the water into the wheel casings between said wheels. The registering buckets and pockets provide means whereby both water wheels are compelled to move with the same rapidity and so that there can be no unevenness of pressure upon either of the wheels. The water being carried from a suitable source of supply into the box C enters into the connected ends of the casings B between the said wheels and being guided by the semicircular or segmental casings around the wheels strikes the nearest buckets and imparts motion to both wheels simultaneously, the water finding escape through the open ends J of said casings which extend but partly around the edges of the wheels which they inclose. It will also be seen that the water finds purchase to a certain extent in the pockets of the wheels which thereby provide further means for assisting in turning the water wheels. The vertical shafts F' are journaled in suitable bearings in the frame A and carry at suitable points above the wheels mounted upon the same the meshing cog wheels K which provide means for holding the water wheels in proper relation with each other so that the buckets and pockets will register as described. To the upper ends of said shafts are secured the beveled gears L, from which motion may be communicated to any suitable machinery desired to be moved by the water wheels.

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

1. The combination of semi-circular or segmental wheel casings connected to a common

inlet at their adjacent ends and terminating at their other ends in separate discharge openings J, said wheel casings being provided with short inwardly extending flanges, and the oppositely moving water wheels having their edges projecting slightly within and overlapped by the flanges of said casings and provided with a series of intermeshing or registering buckets and pockets, the buckets receiving the impact of water from the common inlet and relieving themselves therefrom at the discharges J, substantially as set forth.

2. In a hydraulic motor, semi-circular or segmental wheel casings meeting at one end in a common inlet and provided with short inwardly extending flanges, and the oppositely moving water wheels touching each other between their shafts and provided with upper and lower encircling annular shoulders fitting the edges of said inwardly projecting flanges, and a series of intermeshing buckets and pockets moving in said casings, substantially as set forth.

3. In a hydraulic motor, semi-circular or segmental wheel casings, a triangular water inlet box connecting the nearest ends of said casings, and oppositely moving water wheels touching each other near their shafts and hav-

ing their edges moving in said casings and water box, said wheels being provided with a series of intermeshing buckets and pockets moving in said casings, substantially as set forth.

4. In a hydraulic motor, semi-circular or segmental wheel casings, having inwardly projecting flanges, a triangular water inlet box connecting the nearest ends of said casings, the vertical wheel shafts, the meshing cog wheels mounted upon said shafts, and oppositely moving water wheels touching each other between said shafts and provided with upper and lower encircling annular shoulders fitting the edges of said inwardly projecting flanges and said water box, and a series of intermeshing buckets and pockets moving in said water box and said wheel casings which partly inclose the same, substantially as set forth.

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

J. J. DECKER.

Witnesses:

CATHARINE H. BRODHEAD,
ABRAM BRODHEAD.