

(No Model.)

2 Sheets—Sheet 1.

A. BARRETT.  
HYDRAULIC MOTOR.

No. 263,010.

Patented Aug. 22, 1882.

Fig. 1.

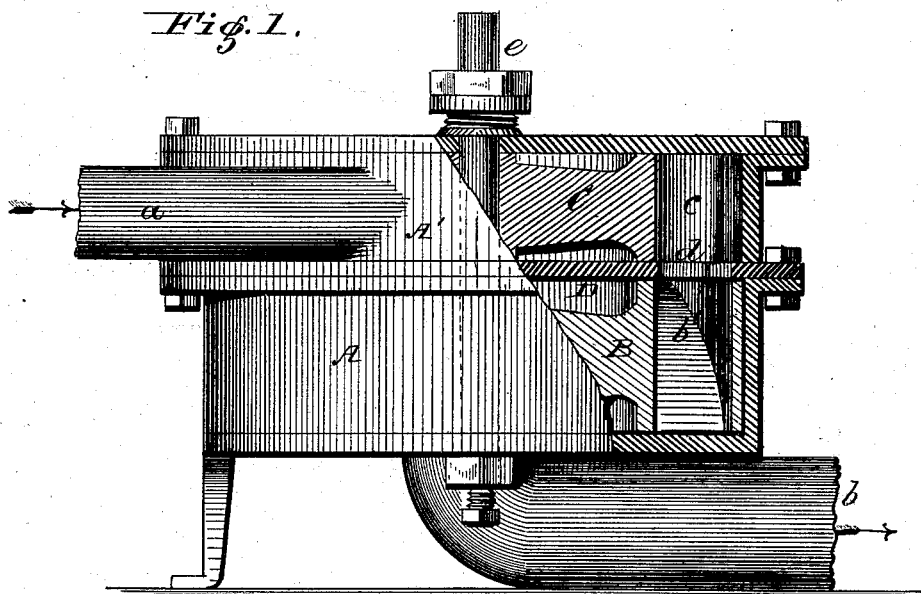
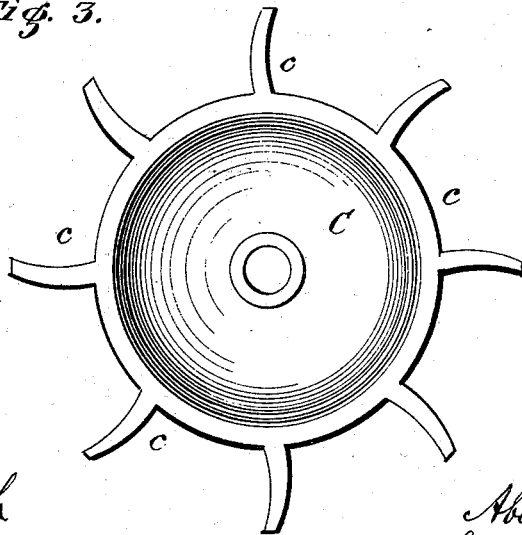


Fig. 3.



Witnesses  
*Fred. G. Dietrich*  
*A. H. Krause*

Inventor  
*Abel Barrett*  
per *Charles E. Burt*  
Atty.

(No Model.)

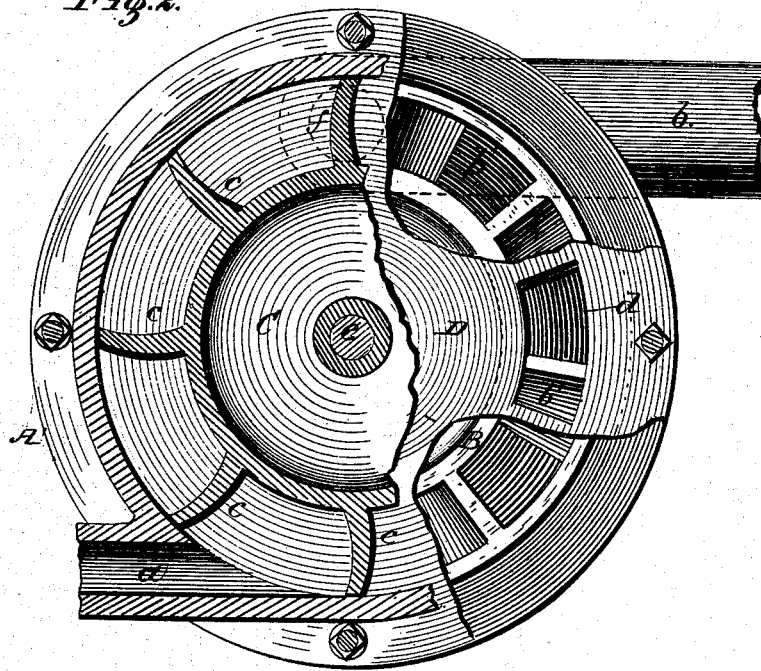
2 Sheets—Sheet 2.

A. BARRETT.  
HYDRAULIC MOTOR.

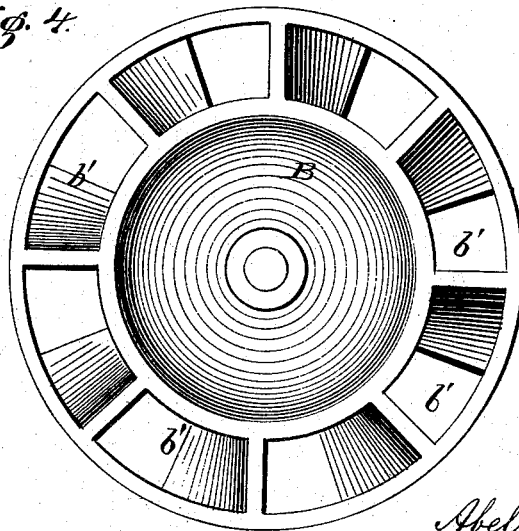
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*Fig. 2.*



*Fig. 4.*



Witnesses  
*Fred. G. Litch*  
*A. H. Krause*

*Inventor.*  
*Abel Barrett.*

*per. Charles E. Bull*  
*Atty*

# UNITED STATES PATENT OFFICE.

ABEL BARRETT, OF WOBURN, MASSACHUSETTS, ASSIGNOR OF ONE-HALF  
TO JAMES BUEL, OF SAME PLACE, AND CHARLES E. BUELL, OF NEW  
HAVEN, CONNECTICUT.

## HYDRAULIC MOTOR.

SPECIFICATION forming part of Letters Patent No. 263,010, dated August 22, 1882.

Application filed April 5, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, ABEL BARRETT, of Woburn, county of Middlesex, State of Massachusetts, have invented certain new and useful Improvements in Hydraulic Motors, of which the following is a specification.

Figure 1 is a side elevation of the motor with its case cut away in part to show its interior. Fig. 2 is a plan view of the same. Figs. 3 and 4 are plan views of the motor's upper and lower wheels, respectively.

My invention relates to the class of water-motors known as "rotary motors;" and it consists of two wheels arranged one above the other in a suitable case, with water-tight fitting heads. The wheels operate simultaneously in the same direction to rotate one and the same driving-shaft, all of which will be hereinafter fully described.

The object of my invention is to afford a double use of the velocity and pressure of a column of water in one and the same motor.

In Fig. 1, A represents the lower part of the containing-case, and A' the upper portion. B is the lower wheel, and C the upper wheel, contained in the case A and A', each wheel being rigidly attached to the shaft *e* and separated from each other by the partition D. This diaphragm or partition D between the wheels B and C fits water-tight against either wheel, except at a point which is cut away to allow the water which has served to turn the wheel C to pass upon the wheel B to again act to move that wheel till its force is expended, when it flows away at the duct *b*, which empties opposite the supply-pipe *a*, but below it.

Fig. 2 shows the blades *c c* of the wheel C, closely fitting the interior of the case A and

the aperture *d*, through which the water precipitates upon the bucket-shaped blades *b' b'* of the wheel B.

Fig. 3 shows in plan view the wheel C and blades *c c*.

Fig. 4 shows the wheel B and bucket-shaped blades *b' b'* in plan view.

Using the velocity and pressure of the water first upon the wheel C through a fourth of its revolution, and then again utilizing the same velocity and pressure upon the wheel B through a fourth of its revolution, as described, results in economy of water and a gain in power and smoothness of action, as compared with motors heretofore used.

What I claim is—

1. The combination, in a hydraulic motor, of two wheels, arranged one above the other, rigidly attached to the same shaft and propelled by the same moving column of water, with a fixed non-rotating diaphragm between said wheels, having apertures for directing the discharge of the upper wheel into the buckets of the lower wheel, substantially as described.

2. The combination of the wheel C, having the peripheral blades *c*, and the wheel B, arranged below said wheel C and having the buckets *b'*, with the casing A A', the common shaft *e*, to which both said wheels are secured, the rigid non-rotating partition D between the wheels, having the apertures *d* and the inlet and discharge ducts for the column of water, the whole arranged and operating substantially as described.

ABEL BARRETT.

Witnesses:

T. MARVIN PARKER,  
ALPHA E. THOMPSON.