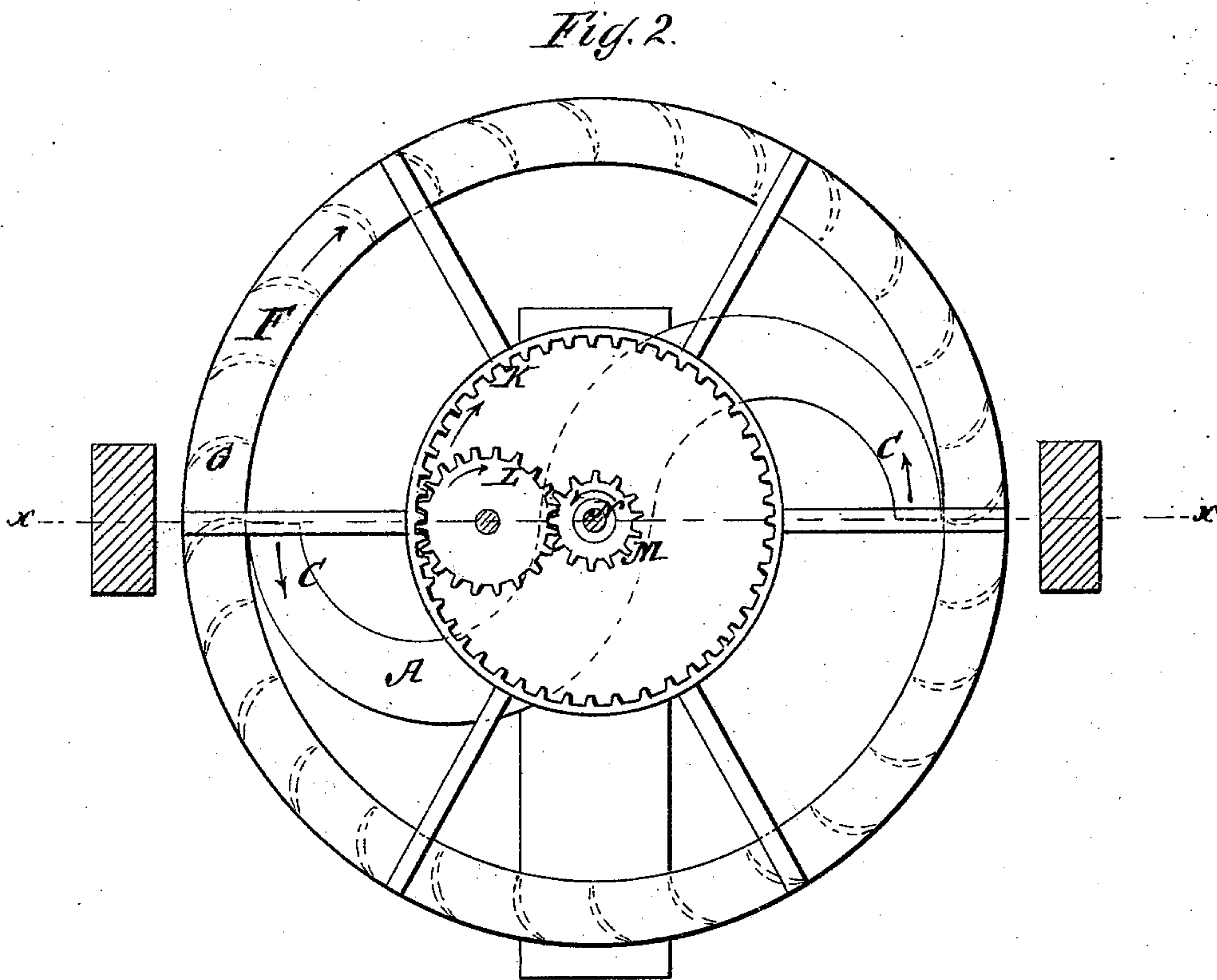
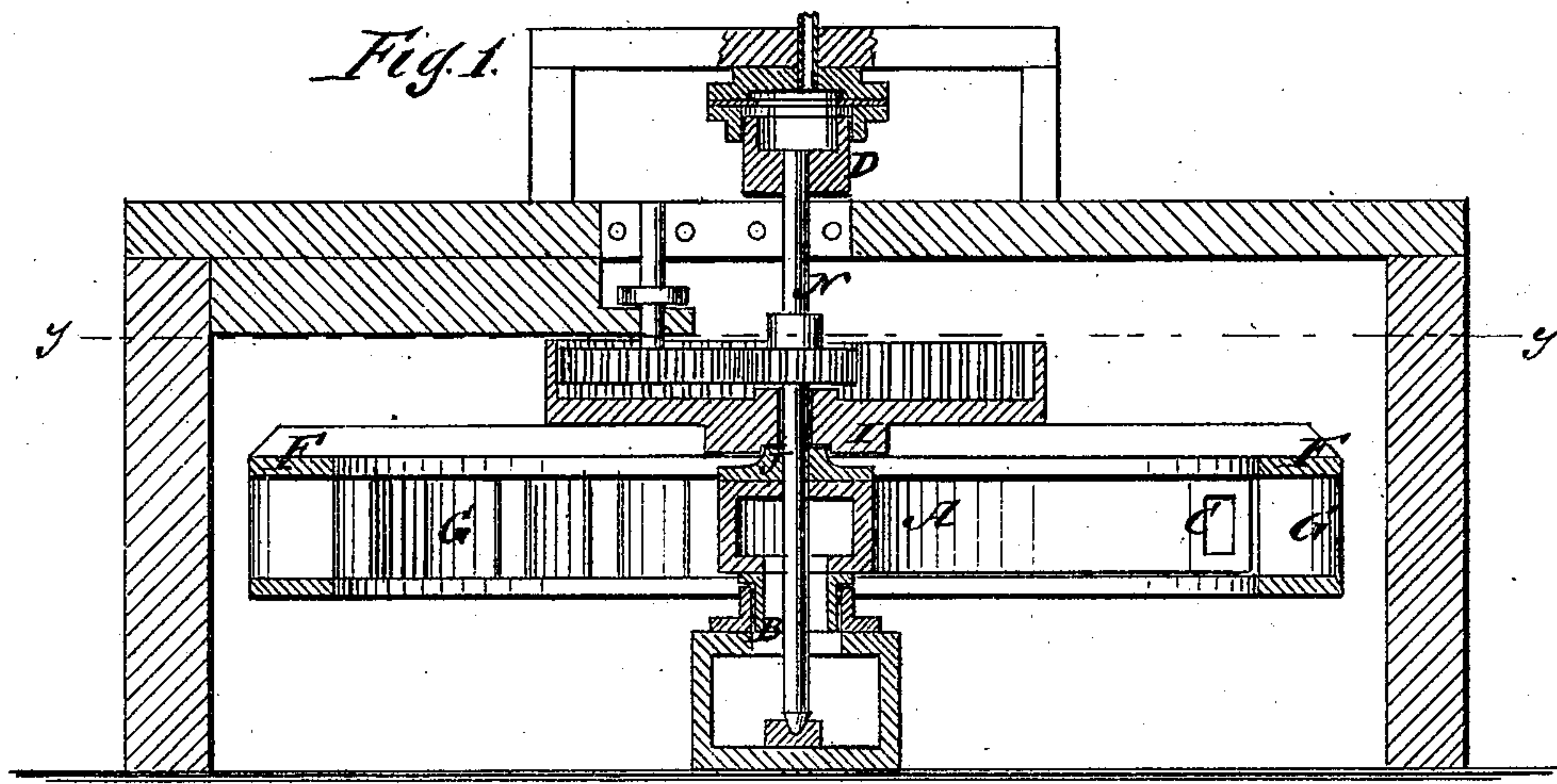


W. H. RECTOR & H. C. BLACK.

WATER-WHEEL.

No. 181,478.

Patented Aug. 22, 1876.



WITNESSES:

*E. W. Hoff*  
*John Bethals*

INVENTOR:

*W. H. Rector*  
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BY *Mumt Co*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

WILLIAM H. RECTOR AND HENRY C. BLACK, OF SANTA ROSA, CALIFORNIA.

## IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. **181,478**, dated August 22, 1876; application filed May 27, 1876.

### *To all whom it may concern:*

Be it known that we, WM. H. RECTOR and HENRY C. BLACK, of Santa Rosa, in the county of Sonoma and State of California, have invented a new and Improved Water-Wheel, of which the following is a specification:

Our invention consists of a reaction-wheel of the **S**-shaped type, receiving water from the under side, and having a water tank or chamber on the shaft, subject to downward pressure of water to counterbalance the upward pressure on the under side.

Figure 1 is a transverse sectional elevation of our improved combined wheel on the line  $x$  of Fig. 2, and Fig. 2 is a plan view.

A is the well-known **S**-shaped reaction-wheel, receiving the water at the center of the bottom B, and discharging it at the ends of the hollow arms C, on the shaft N of which we arrange a chamber, D, in which we apply water from the fore-bay by a pipe, E, or other means, to subject the shaft to downward pressure,

for balancing the upward pressure of water entering from below. The chamber will be packed water-tight to prevent leakage. F represents the wheel-rim, arranged outside of the wheel A, with buckets G to receive the jets discharging from A to utilize the power thereof.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The combination, with a reaction-wheel receiving water from the center of bottom, of a chamber, D, arranged on the shaft N, and receiving water from above, as shown and described, whereby the upward and downward pressures are counterbalanced, for the purpose specified.

WILLIAM HENRY RECTOR.

HENRY CLAY BLACK.

Witnesses:

GEORGE SEANOR,  
S. G. WILSON.