

N. CONNER.  
Water-Wheels.

No. 149,920.

Patented April 21, 1874.

Fig. 1.

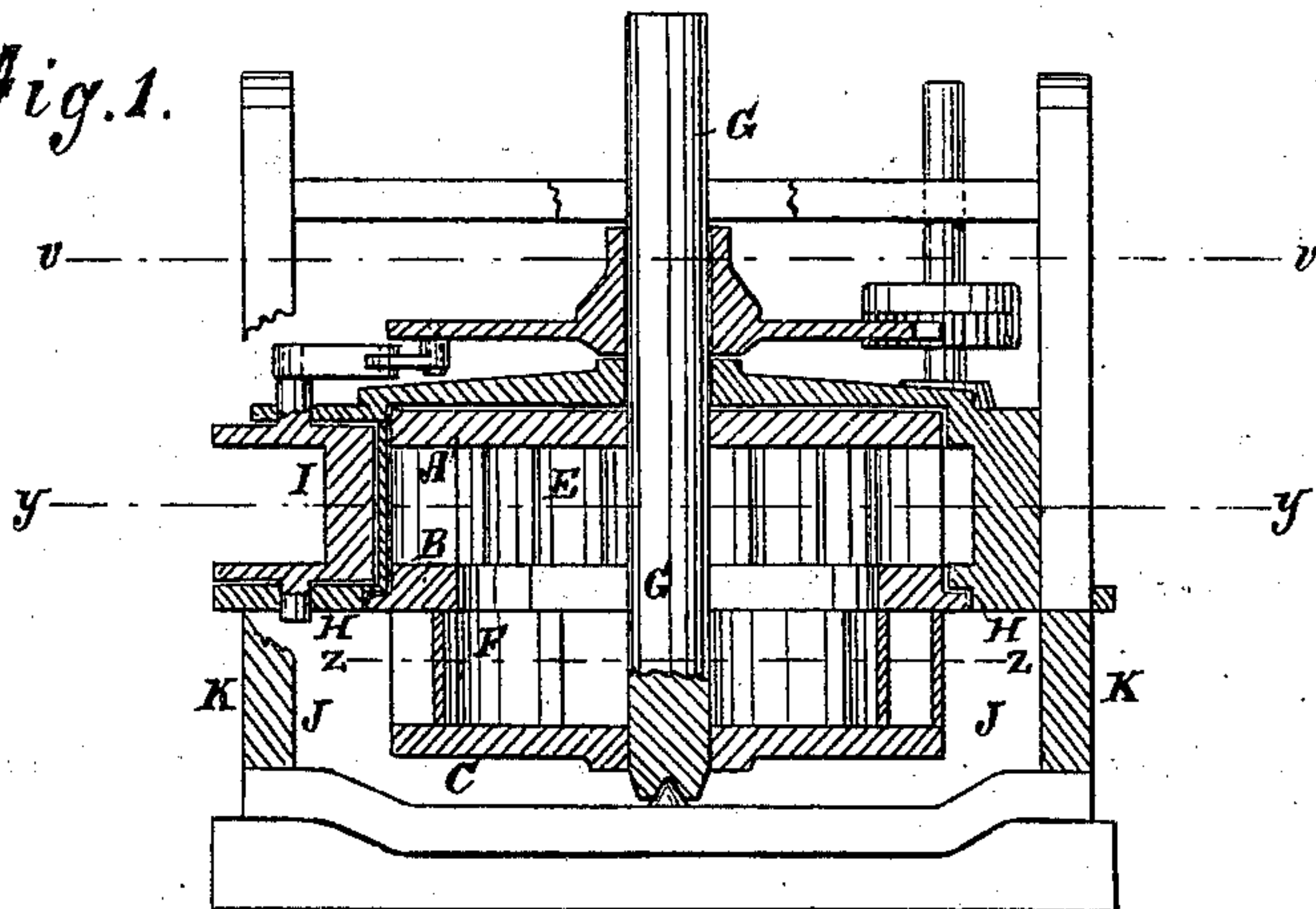


Fig. 2.

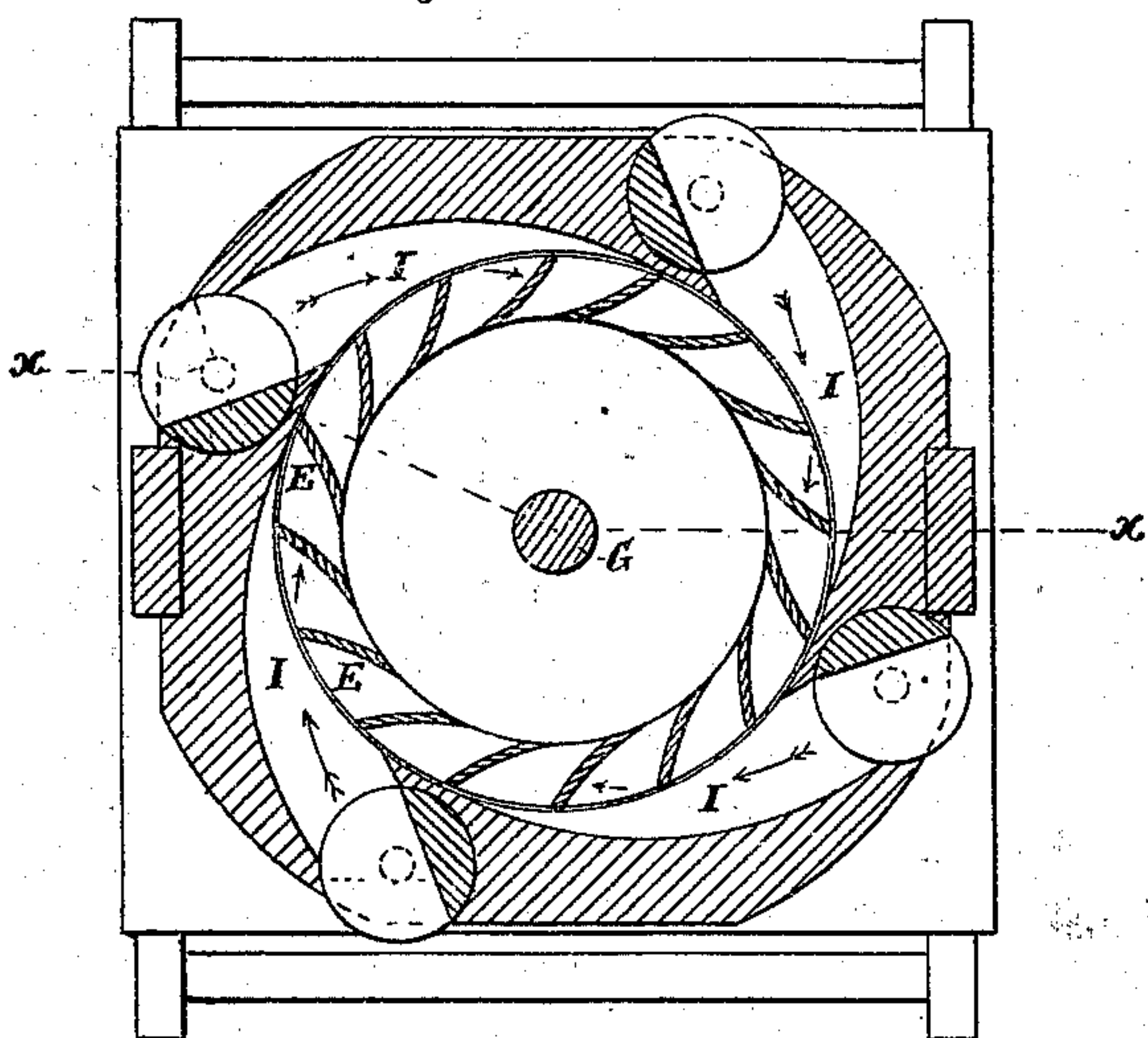


Fig. 3.

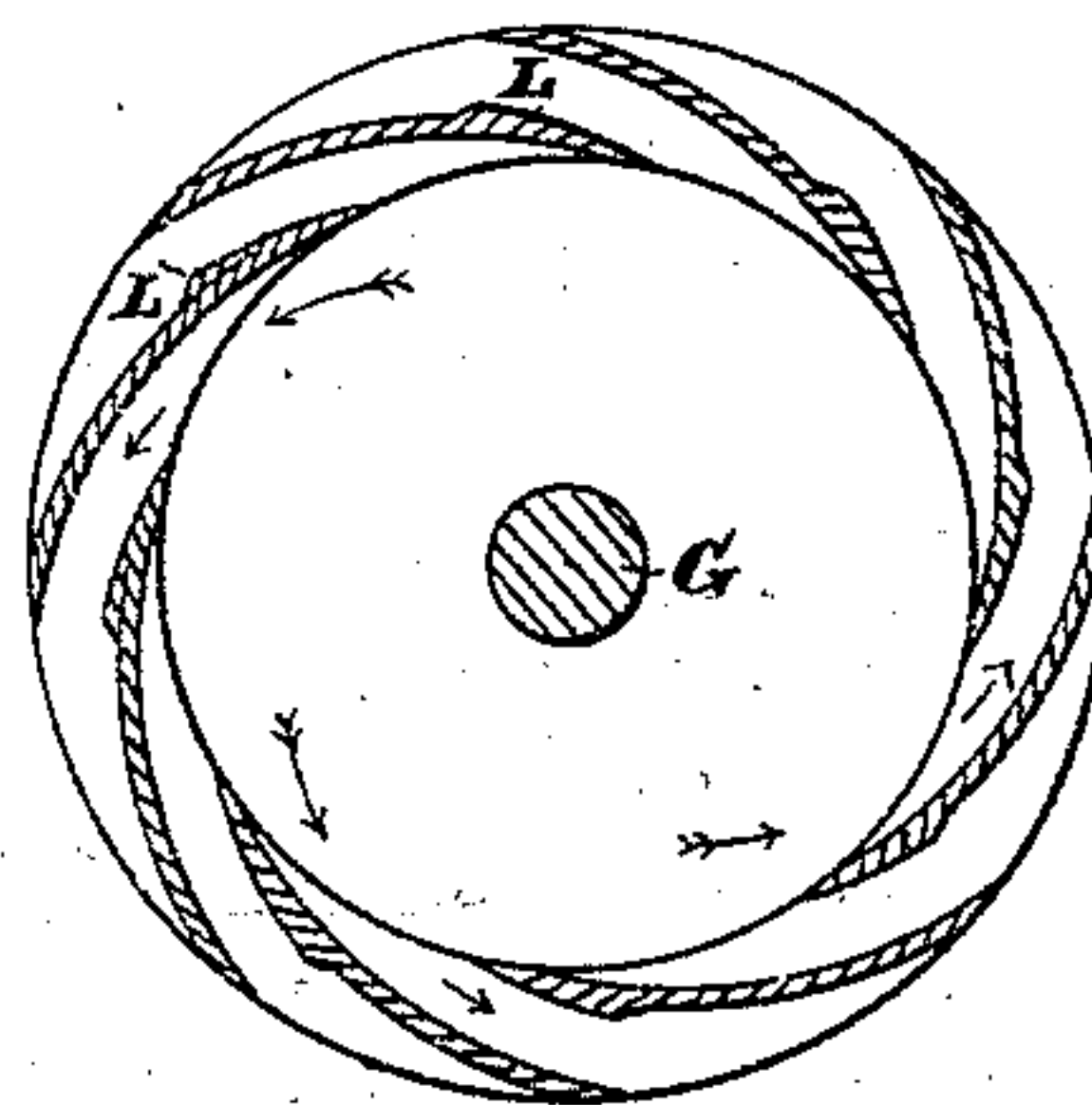
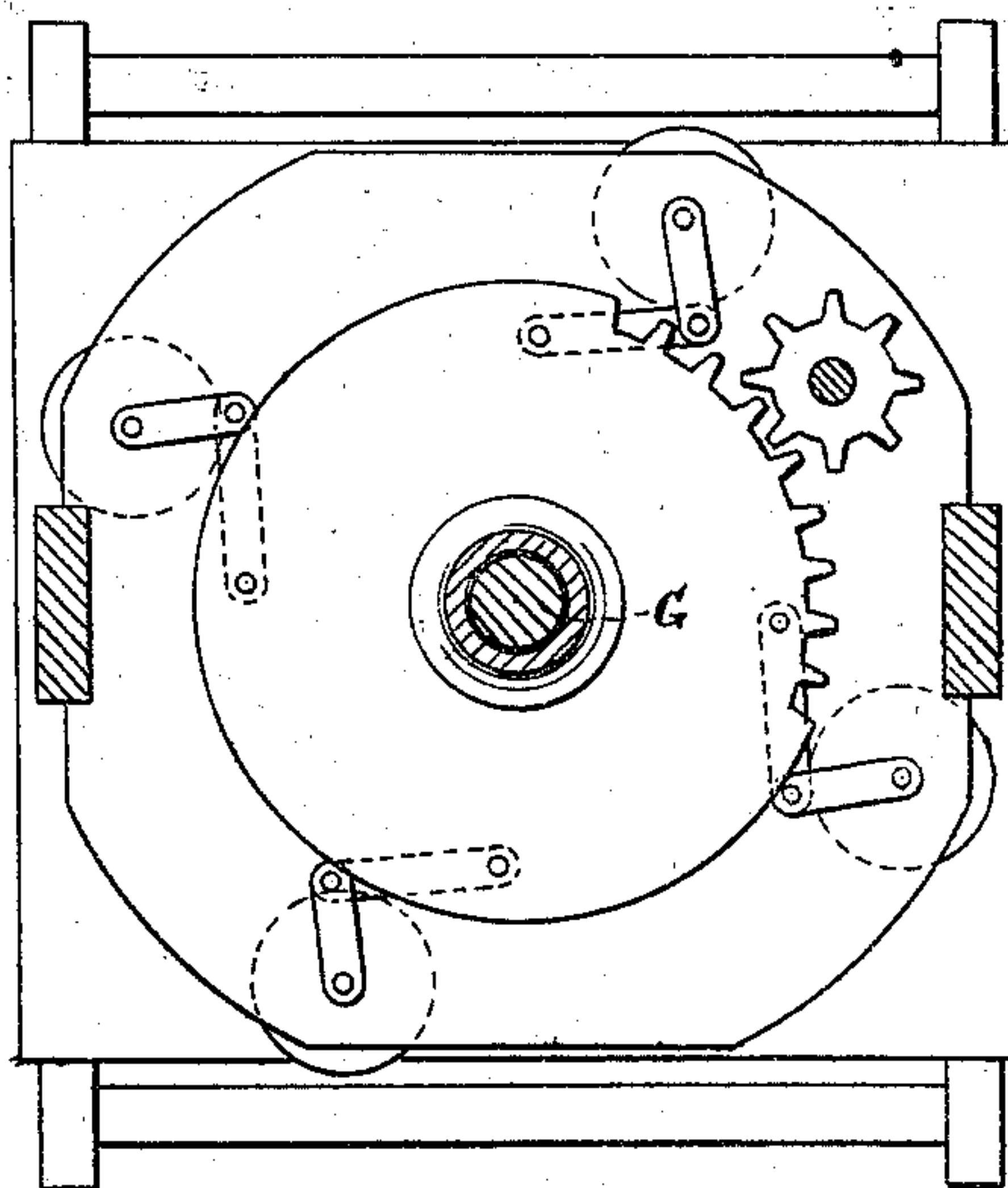


Fig. 4.



WITNESSES.

A. Bennekenhof.  
Schulz

INVENTOR.

N. Conner.

BY

M. M. M.

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

NELSON CONNER, OF JALAPA, INDIANA.

## IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. **149,920**, dated April 21, 1874; application filed March 28, 1874.

*To all whom it may concern:*

Be it known that I, NELSON CONNER, of Jalapa, in the county of Grant and State of Indiana, have invented a new and Improved Water-Wheel, of which the following is a specification:

My invention consists of a double wheel, comprising a horizontal wheel, receiving the water at the periphery and discharging it at the center for the upper portion, and another wheel below receiving the water at its center from the upper wheel and discharging it at the periphery, the two wheels being contained between top and bottom horizontal disks, and separated, the one from the other, by a flat annular rim a little wider than the depth of the buckets, and fitted at the outer edge with the bottom plate of the scroll-case, to form a joint to confine the water to the upper wheel as it enters from the chutes, and the buckets of the lower wheel being arranged to discharge the water in the contrary direction to that in which it is received on the upper buckets, and in a manner to receive the reactionary force, while the upper ones receive its direct action.

By the combination of the two wheels in this manner, an increase of thirty per cent. of power is gained over the power of the lower wheel alone with much less water, as proven by actual test.

Figure 1 is a transverse sectional elevation of the wheel, taken on the line *x x* of Fig. 2. Fig. 2 is a horizontal section on line *y y*, Fig. 1. Fig. 3 is a section on line *z z*, and Fig. 4 is a section on line *u u*.

Similar letters of reference indicate corresponding parts.

A is the upper disk; B, the dividing rim; C, the lower disk; E, the upper buckets. The disks are keyed fast to the shaft G, and the dividing rim is fitted at its outer edge with the inner edge of the lower plate H of the chutes, so as to confine the water to the upper buckets as it enters from the chutes I. Below the chutes, and in front of the lower buckets, a space, J, is provided by the part K of the case, for the discharge of the water as it escapes from the wheel. Both the upper and lower buckets take the force of the water mainly at the outer ends, so as to have the best effect on the wheel, the lower issues being contracted for that purpose by the thickened portion L of the buckets. The arrows in Fig. 2 show the direction of the water in the upper wheel, and those in Fig. 3 show the direction in the lower wheel.

It is essential that the upper wheel contain twice the number of buckets that the lower one does, no matter what the size of the wheel may be.

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

The disks A C, rim B, upper buckets E, lower buckets F, chute-plate H, and case K, all combined and arranged substantially as specified.

Witnesses: NELSON CONNER.

JOHN SNYDER,  
ISAAC HAMILTON.