

# D. H. Parsons, Water Wheel.

N<sup>o</sup> 3,172.

Patented July 12, 1843.

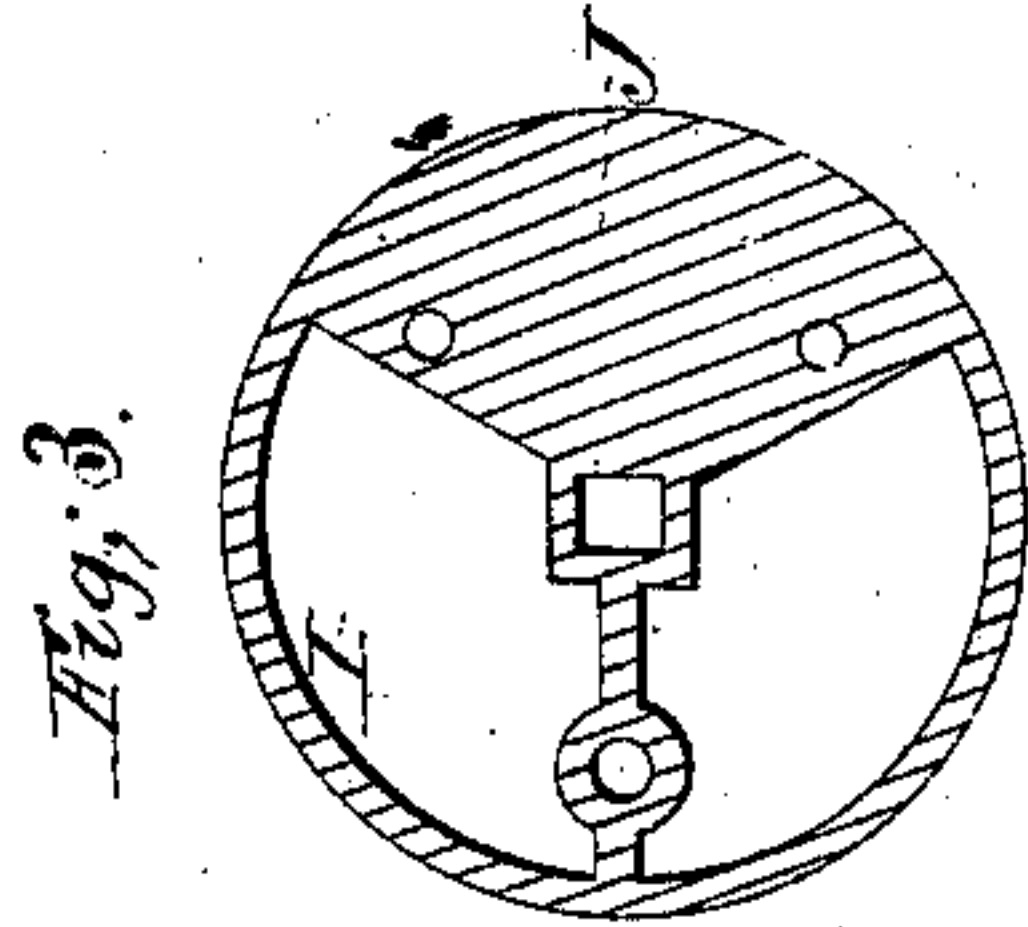


Fig. 2.

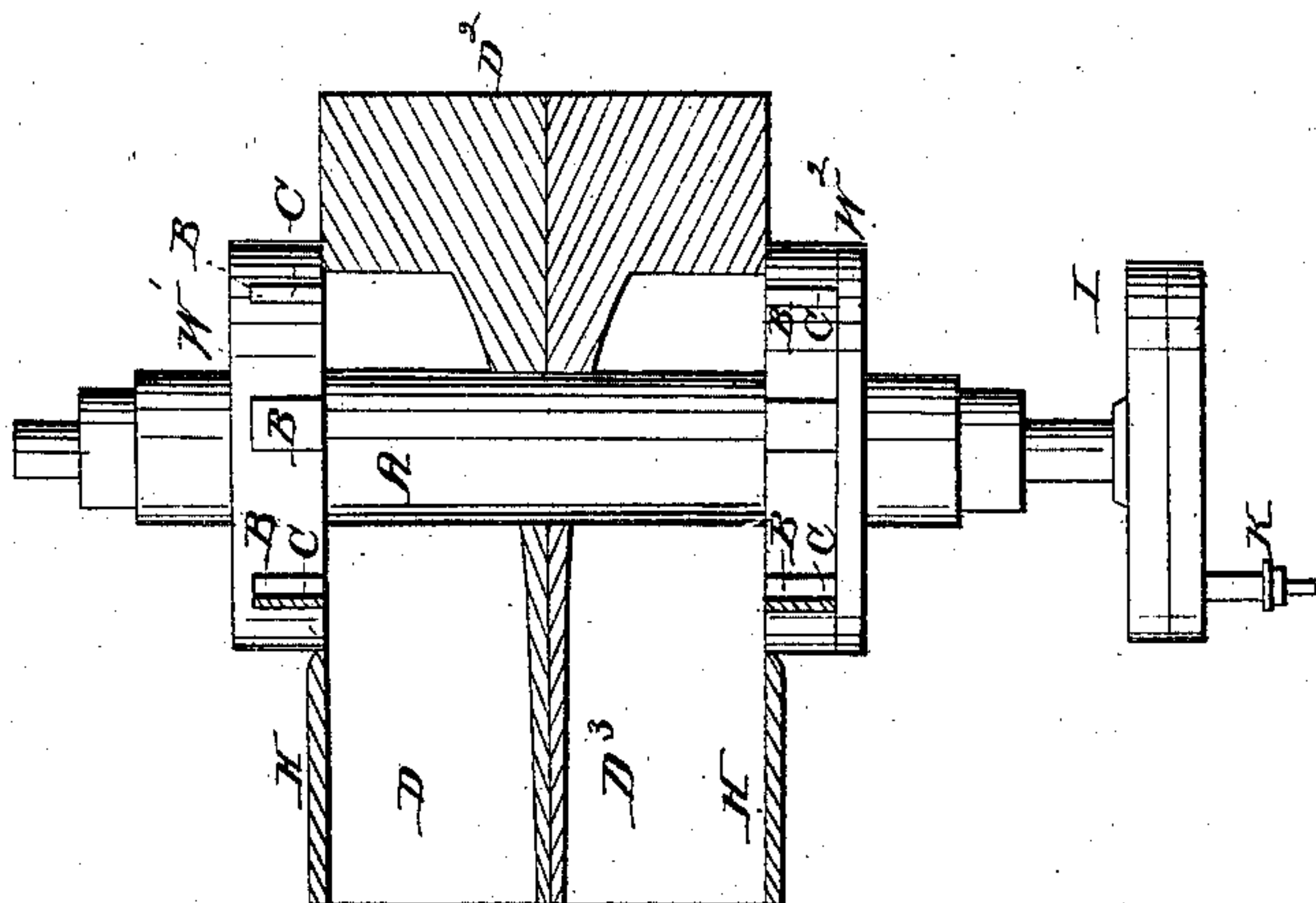
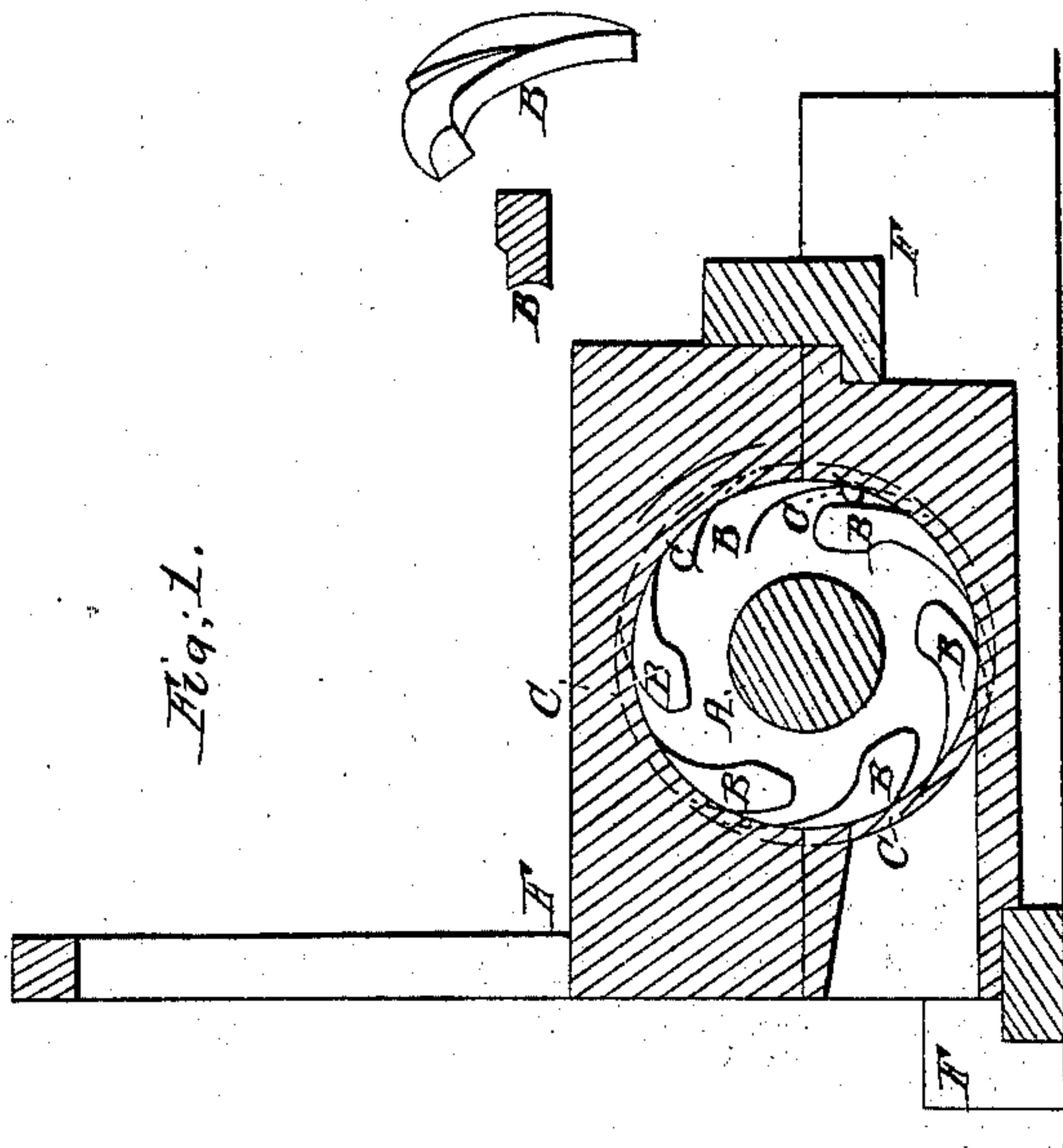


Fig. 1.





# UNITED STATES PATENT OFFICE.

DANIEL H. PARSONS, OF CHESTER, OHIO.

## WATER-WHEEL.

Specification of Letters Patent No. 3,172, dated July 12, 1843.

*To all whom it may concern:*

Be it known that I, DANIEL H. PARSONS, of Chester, Meigs county, State of Ohio, have invented a new and useful Improvement in Reaction Water-Wheels, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a vertical section. Fig. 2 is a horizontal section. Fig. 3 is a section of the counter balance.

This reaction water wheel  $w'$  has a horizontal axle A of rotation and curved buckets B or vanes of a spiral wedge shape lapping each other about one fourth its length forming tapering pins  $c$  between the large and small ends of each part of the buckets, for the escape of the water—the water having free entrance to the space within the wheel, and spouting out at the orifices or openings  $c$  between the curved vanes or buckets, impels the wheel around in a backward direction (as indicated by the arrow) by its reaction against the vanes, in issuing with velocity from within the wheel—the latter turning in a contrary direction to that of the escape of the water.

The wheel formed as above described is placed over the circular opening in the side of the feeding cistern D—said opening being a little less in diameter than the wheel.

The feeding cistern D is made of a block of wood  $D^2$  in two parts with semi-circular cavities in each part corresponding with the semidiameter of the shaft of the wheel which is to turn therein, and put together so as to embrace the shaft A and are held firmly by dowel pins or other suitable fastenings—having the cavity therein for the water scalloped of a gradually tapering form. The blocks when put together are held securely by the frame F and suitable wedges and other fastenings.

On the opposite end of the shaft is a similarly shaped wheel  $W^2$  but placed in a reversed position—that is to say with the entrance to the buckets toward those of the wheel just described having a feeding cistern  $D^3$ , or water box of the same size and shape as the one above described placed between it and said second wheel  $w^2$  properly

secured together by pins or other suitable fastenings—with spiral wedge shaped buckets, scalloped on the inner edges and on the concave surfaces in a similar manner to the buckets above described.

The penstock for conducting the water to the feeding cisterns is made in the usual manner.

In using the before described wheel to move the saw gate of a saw mill a counter balance fly wheel I is put on the aforesaid shaft. It is made circular in two parts and put together and properly secured by screw bolts countersunk. Each part is made hollow except about one third which is left solid as at J forming the counterbalance. The aperture in the center is square to admit the square part of the shaft. The wrist K to which the pitman rod is attached is in the outer face of the aforesaid wheel.

The buckets B of this wheel as before mentioned are of a spiral or curved wedge shape. They are also scalloped or hollowed on the face or edge toward the center of the feed cistern and also scalloped on the concave part resembling a bent or curved wedge forming a vane shaped like the cam of a cheese press said cam having a concave and convex side and placed or arranged with its edge on or against the inner face of a circular block, plate, or wheel, so as to cause about one half of the length of each bucket to coincide or be even with the circumference of the wheel and also to lap or reach over each succeeding bucket about one-fourth or one-third its length.

The before described cavity scalloped out of the block in which the feeding cistern is formed is reduced in size at the face next the wheel to correspond in size with said wheel by means of an adjustable board H near the concave edge of which the periphery of the wheel turns—said board being brought near the wheel to make a close joint for preventing the escape of the water.

In arranging the buckets as before described the small end of each bucket overhangs or laps the succeeding bucket with a space between them gradually tapering off the requisite size and proportion to vent the water to the greatest advantage.



What I claim as my invention and which I desire to secure by Letters Patent is—

1. The manner of forming the buckets as described.
- 5 2. The construction and application of the counterbalance as described; that is to say, by inclosing it within an outside case so as

to present a smooth outside surface to the action of the water when used in combination with reaction water wheels.

DANIEL H. PARSONS.

Witnesses:

EDMUND MAHER,  
W. THOMPSON.