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C.W.Parker. *2 Sheets Sheet 1*
TURBINE.
PATENTED JUL 25 1871

Fig.1.

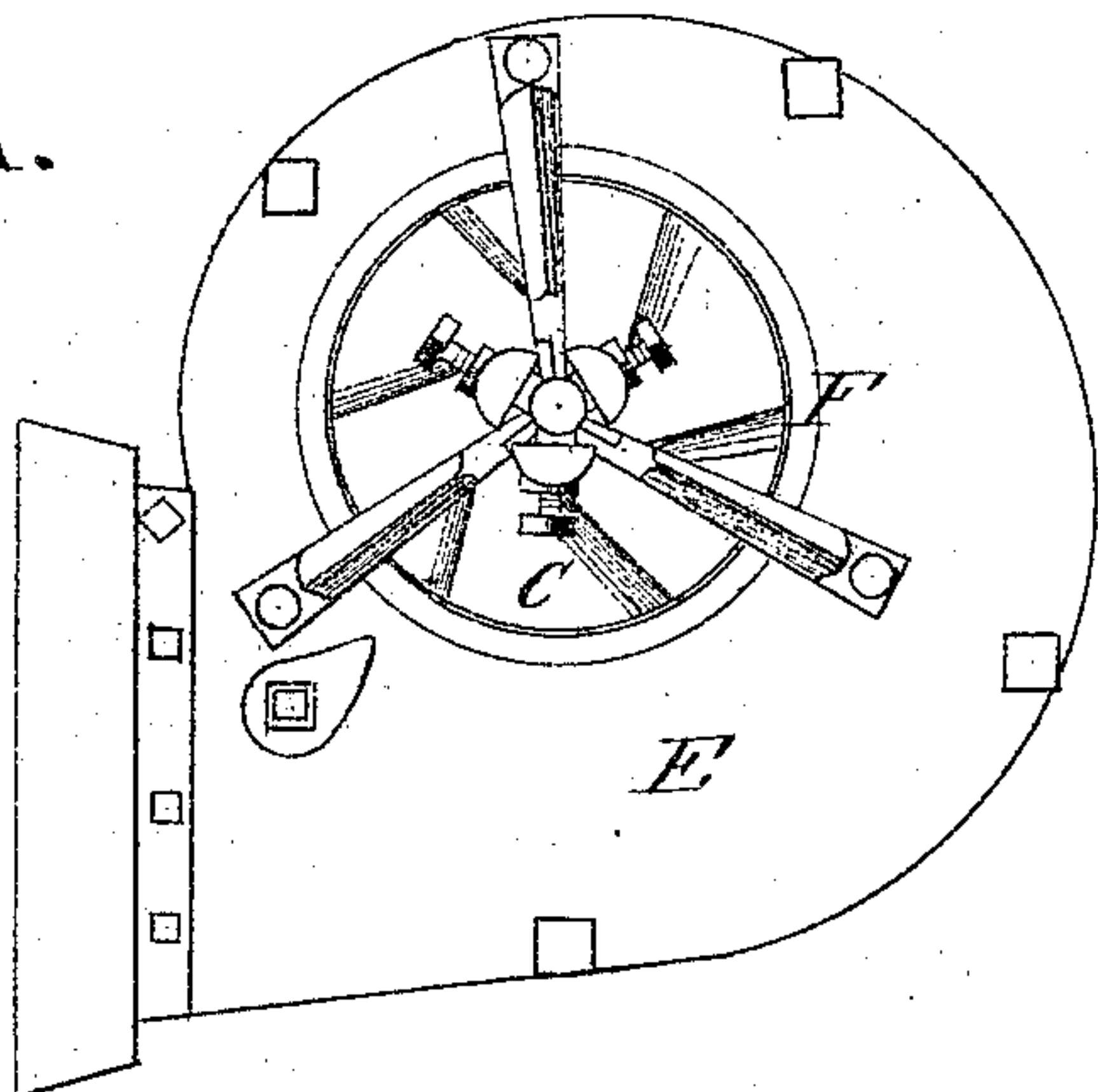
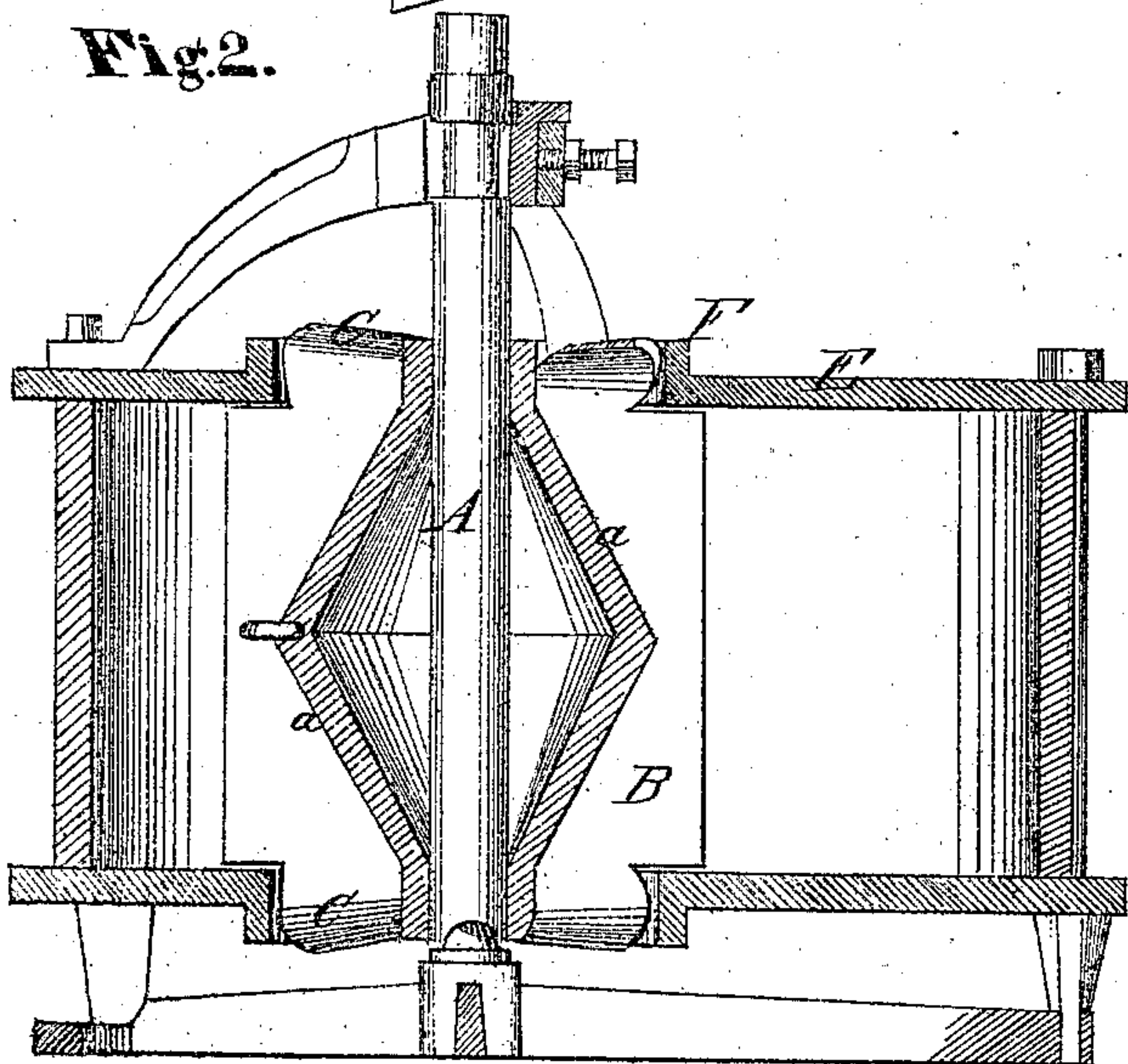


Fig.2.

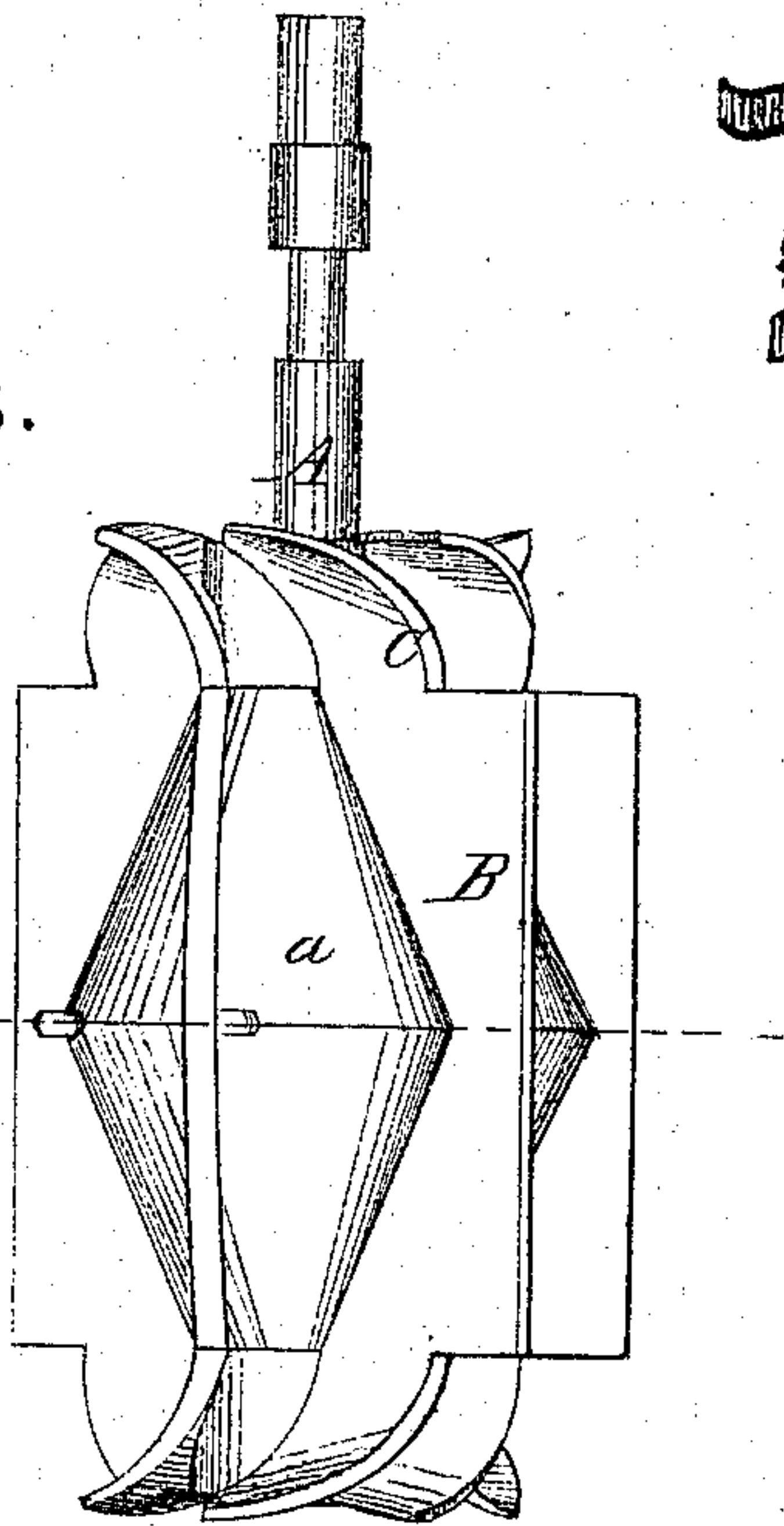


Witnesses.
Chas. Henryson
Villette Anderson

Inventor.
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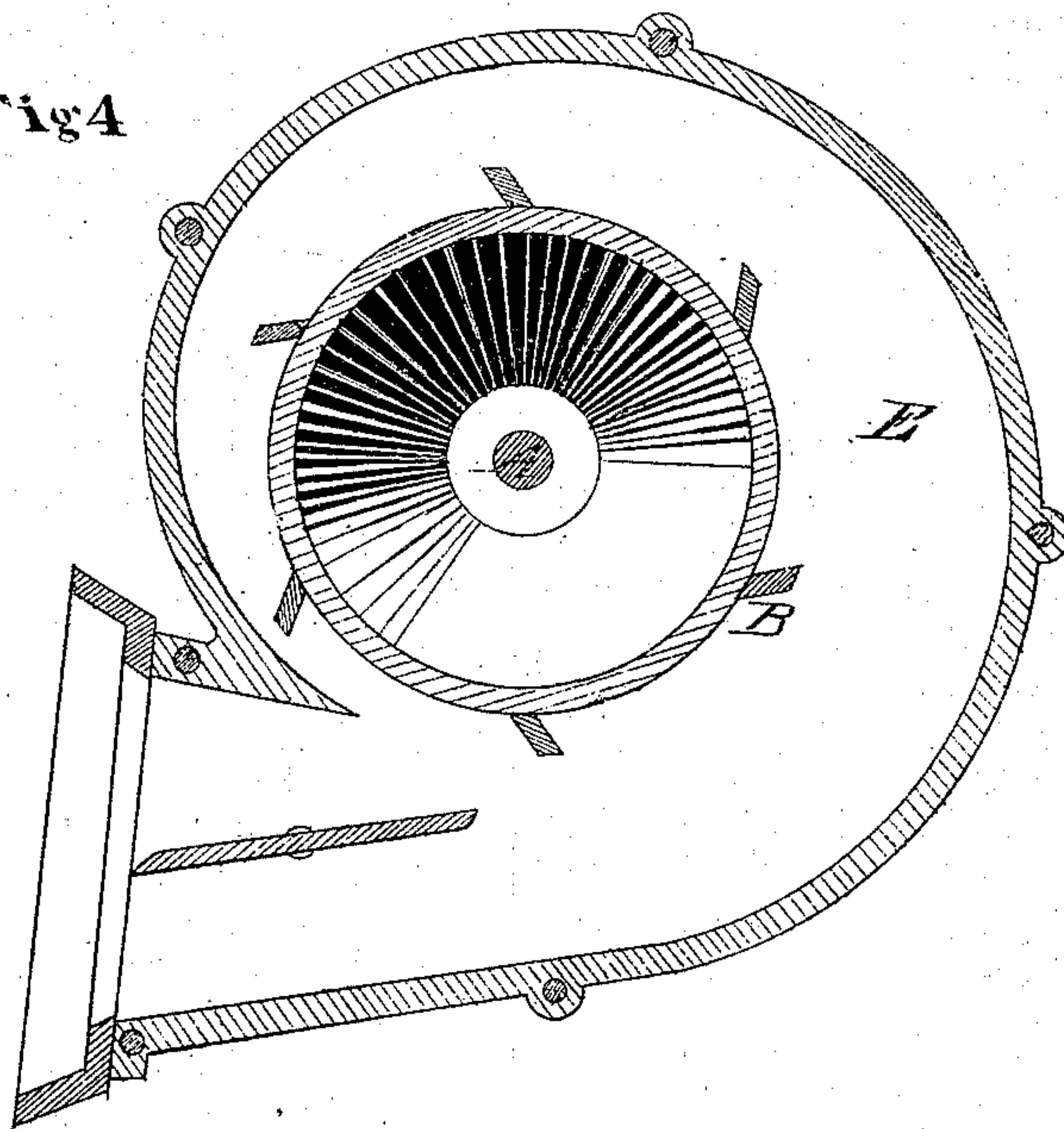
Fig 3.



C.W. PARKER ^{2 Sheets Sheet 2}

TURBINE.

Fig 4



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UNITED STATES PATENT OFFICE.

CHARLES WATKINS PARKER, OF GENESEE FORKS, PENNSYLVANIA.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. 117,451, dated July 25, 1871.

To all whom it may concern:

Be it known that I, CHARLES WATKINS PARKER, of Genesee Forks, in the county of Potter and State of Pennsylvania, have invented a new and valuable Improvement in Turbine Water-Wheels; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is an end view. Fig. 2 is a vertical section through the diameter of the wheel. Fig. 3 is a face view of the shaft and buckets detached from pen-stock. Fig. 4 is a vertical section across the shaft and pen-stock.

This invention has relation to turbine water-wheels; and it consists in the employment or use of a series of buckets which are placed longitudinally and eccentrically on the shaft, with inclined planes between them, in combination with a series of curved or spiral buckets at each end of the longitudinal buckets, the whole placed within a case or pen-stock and arranged as hereinafter set forth.

In the accompanying drawing, A represents the shaft; B C C, the buckets, the former being placed on the shaft longitudinally, with double-inclined planes *a a* between them, as clearly shown in Fig. 3, the inner ends of said planes being elevated and abutting against each other so as to form declivities from the center of the spaces between the buckets outward toward the curved buckets C. The plane B of each bucket is eccentrically placed on the shaft A, being usually tangent thereto, this arrangement being employed to increase the tapering water-way or length of the buckets. The latter have a curved or spiral position on the shaft A, the spaces between them gradually decreasing in width from

their inner to their outer ends. The width of the outlets at their outer ends is the same near the shaft A as at their outer extremities, a peculiar twist being given to the buckets in order to make their outer ends parallel with the ends of the pen-stock, or at right angles with the axis of the shaft A; consequently, the discharge is equal at all points of the openings, rendering the pressure of the water more equal than results from other arrangements, and limiting the area of the discharges in keeping with the capacity and form of the wheel. The whole is surrounded by a case or pen-stock, E, the curved buckets being encompassed by a projecting rim, F.

The water first acts upon the central buckets B by impact or direct action, and is deflected by the inclined planes toward the end buckets C C, upon which it acts by a reactive influence and escapes through the outlets between them.

It is obvious that the peculiar twist mentioned as being applied to these buckets presents a more considerable area of surface for this reactive influence of the water than any form hitherto devised, and consequently increases the percentage of power.

I claim as my invention—

The water-wheel herein described, having the plane bucket B tangentially placed with reference to the shaft A, the curved end buckets C C, and the intermediate inclined planes *a a* tapering from the central portion of the wheel each way toward the shaft, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

CHARLES WATKINS PARKER.

Witnesses:

A. H. PERRY,
ISAAC D. HARRIS.