

(No Model.)

H. R. AUSTIN.
TURBINE WATER WHEEL.

No. 287,403.

Patented Oct. 30, 1883.

Fig. 1.

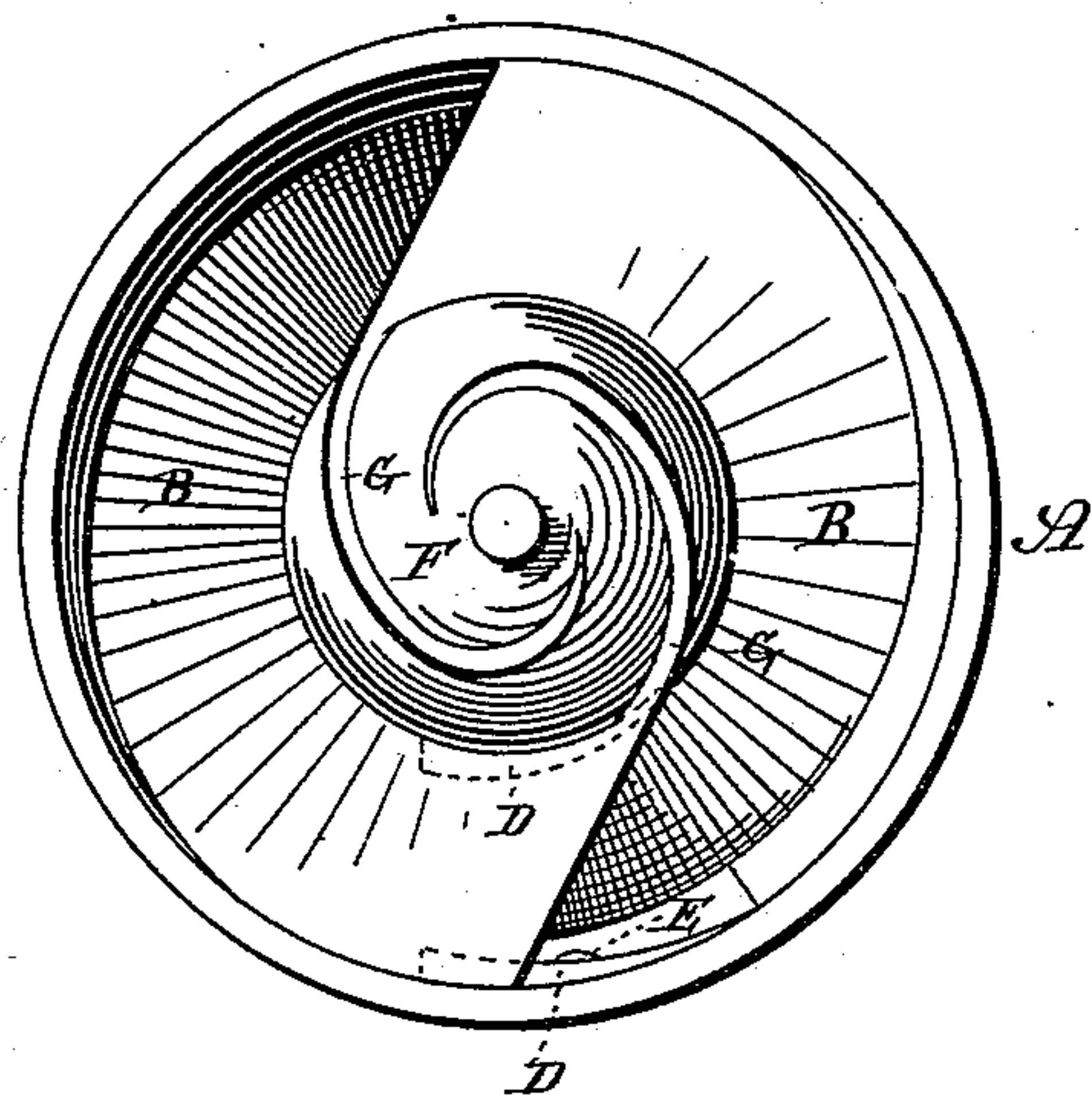
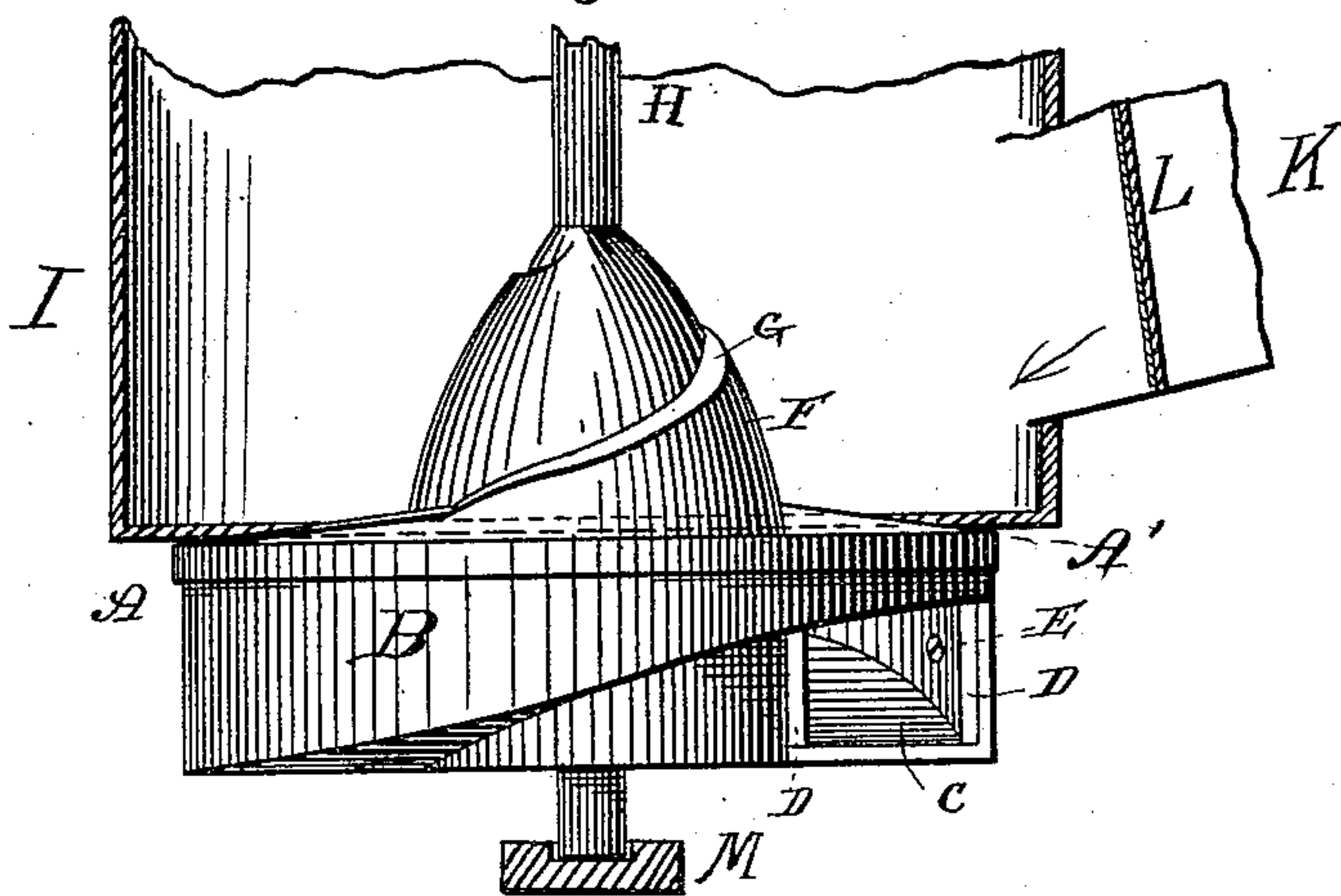


Fig. 2.



Witnesses:

J. W. Garner
W. S. D. Gaines

Inventor:

Henry R. Austin.

R. S. Ritchard
Attorney.

UNITED STATES PATENT OFFICE.

HENRY R. AUSTIN, OF NORWOOD, NEW YORK.

TURBINE WATER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 287,403, dated October 30, 1883.

Application filed October 9, 1882. (No model.)

To all whom it may concern:

Be it known that I, HENRY R. AUSTIN, of Norwood, in the county of St. Lawrence and State of New York, have invented certain new and useful Improvements in Turbine Water-Wheels; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My improvements relate to turbine wheels having a conical hub rising above the rim and buckets of the wheel; and they consist, chiefly, in two spiral grooves in the cone, for the purpose of directing the water in two currents upon the buckets, and thus giving the water a spiral motion before the same strikes the buckets; and, also, my improvements cover other features, which will be understood by the following description.

In the accompanying drawings, Figure 1 is a plan view of my improved water-wheel. Fig. 2 is a side view, showing the box or casing in section.

In the drawings, A represents my improved wheel, having two buckets, B, overlapping each other about four inches. The shaft rests on the ordinary step, M, and has a conical hub, F, attached thereto. This hub rises above the rim A' of the wheel, and has spiral grooves G therein, for the purpose of directing the water downward or outward toward the circumference of the wheel. These grooves G are deep enough to give the water a spiral motion as it descends to the buckets, so as to strike the latter with a greater force than would be the case with a cone not having such spiral grooves.

The wheel is to be placed in a box or casing, I, having a spout, K, provided with a gate, L. From this spout the water enters the casing above the rim A' of the wheel, and on a line of a tangent thereof, or between the conical hub and the casing, the hub diverting the flow outward from the center to the circumference, thus increasing the power or force of the water; also, the spout is steeply inclined downward, in order to increase the stroke or momentum of water upon the wheel or bucket. The grooves G, in a full-sized wheel, are several inches in depth, and they direct the water upon the highest parts of the buckets B, thus adding power to the wheel.

The discharge-openings from the buckets B are diminished in size, when desired, by means of a wedge-shaped block, D, which is made removable and fitted to the side of the hub. By this means the speed of the wheel and the use of water are diminished when desired.

Having thus described my invention, what I claim is—

1. The described turbine wheel, having the elevated conical hub F, provided with spiral grooves G, buckets B, and the removable block D, substantially as and for the purposes set forth.

2. In combination with the wheel A, having buckets B and conical hub F, the removable block D, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

HENRY R. AUSTIN.

Witnesses:

G. W. CHANDLER,
W. N. CHANDLER.