

F. VOIGT.
WATER-WHEEL.

No. 170,499.

Patented Nov. 30, 1875.

Fig. 1.

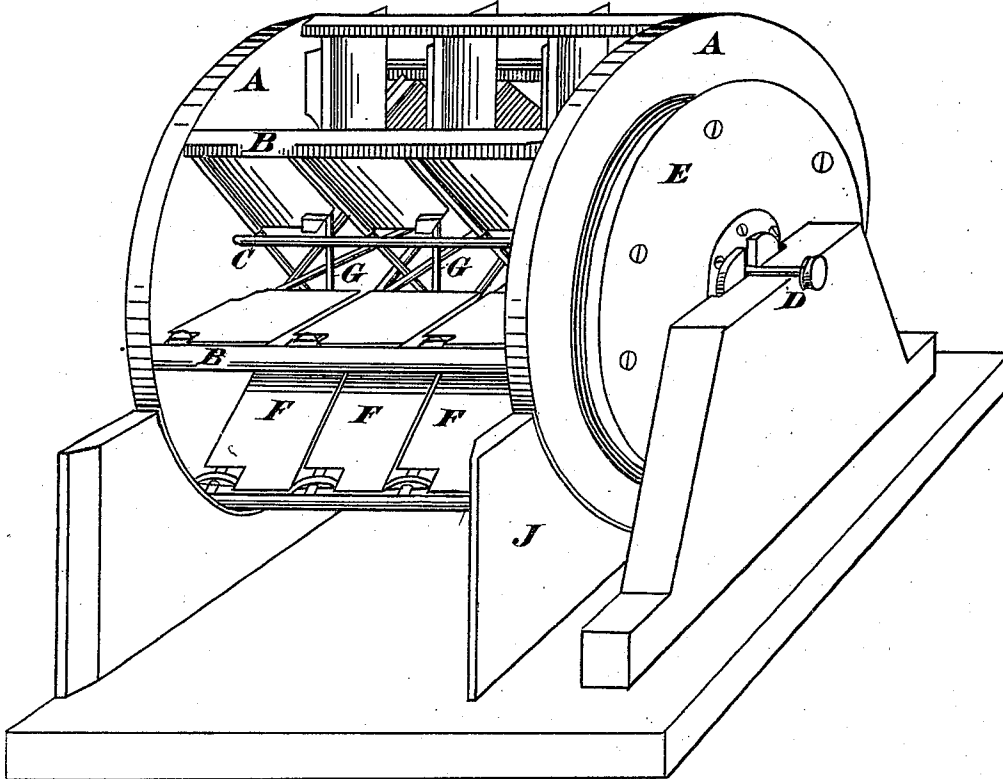
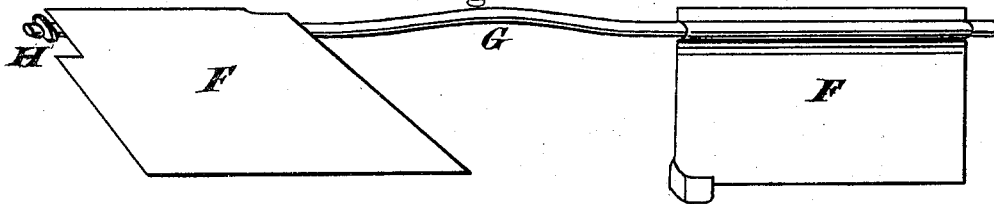


Fig. 2.



WITNESSES.

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IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. **170,499**, dated November 30, 1875; application filed November 6, 1875.

To all whom it may concern:

Be it known that I, FERDINAND VOIGT, of the city of Jeffersonville, in the county of Clark and State of Indiana, have invented a certain new and useful Improvement in Water-Wheels; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view, showing the general arrangement of the buckets in the wheel. Fig. 2 is a view of one of the buckets, showing their peculiar construction.

This my invention relates to a new and useful improvement in current water-wheels, consisting, more especially, in the use of hinged or oscillating buckets made of iron, in suitable forms, and secured firmly at right angles to the ends of round bars of iron extending across the entire wheel, the ends of which bars are made to work in bearings on the cross-pieces at the verge of the wheel, and thereby constitutes the shafts or hinge-bars, to which the buckets are attached, and by which they are hung in the wheel, and kept in position to be acted on by the water at each revolution of the wheel.

The object of this my invention is to provide a wheel that is easily constructed, durable in use, and one that will yield a greater amount of power with a given volume of water under a given head than any other wheel of the same size now in use, particularly when used as a current or submerged current-wheel, and for all situations where the supply of water is limited, or the head is low from the impracticability of building dams, or where dams are not permitted; but where there is an abundance of water, with a strong current, this my invention will be found very valuable, from the fact that it is susceptible of being used either as a current-wheel on the surface of the stream, or as a submerged current-wheel under the water, with nearly the same results; but it may also be used with advantage as an undershot wheel, with

either high or low heads; but when used especially as a submerged wheel it will be found to possess many advantages over the undershot wheel on account of the peculiar construction and operation of the buckets, which are turned down by the action of the water as the wheel revolves, and thereby presents a bucket-surface of nearly one-half the diameter of the wheel to be acted on by the water without any counteracting resistance above, except the thickness of the buckets and their shafts, while the ordinary undershot wheel is seldom provided with buckets more than about twelve or fifteen inches wide, and therefore cannot yield the same amount of power with so limited a bucket-surface.

This my invention will be found more fully illustrated in detail in the drawings, in which—

A A is the wheel, and B B B are the cross-bars at the verge, on which the bucket-shaft bearings are made to rest, all of which are made of wood, and in form as shown in the drawing, but may be made of any suitable material. C C C are bolts or bars inserted in the sides of the wheel between the heads, parallel with the shaft, immediately under the inner end of the buckets, so as to answer as a rest for the end of the buckets, and also as a brace to strengthen the wheel. D is the main shaft, which may be made of any suitable material. E is a pulley or sheave at the end of the wheel for transmitting motion by means of a chain or otherwise when used as a submerged wheel. F F F are the oscillating buckets or wings, all of which are made of sheet-iron, and in form as shown in the drawings, and secured firmly at right angles to the ends of round bars or shafts extending across the wheel. G G G are these bars or shafts, to which the buckets are attached, the journals of which work in bearings H H H on the cross-pieces B B at the verge of the wheel, and constitute the hinge pins or bars of the buckets, on which they oscillate with each revolution of the wheel. J is the frame on which the wheel rests, but constitutes nothing new or novel.

Having thus fully described the nature and object of this my invention, therefore

What I claim as new, and desire to secure by Letters Patent, is—

The oscillating buckets F F F, with their shafts G G G, as above described, in combination with the bearings H H H, in which they work, and the cross-pieces B B B and bars C C C, on which the buckets rest, when

arranged, constructed, and operated substantially as and for the purpose hereinbefore set forth.

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Witnesses:

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