

R. R. ROYER.  
Water-Wheel.

No. 160,958.

Patented March 16, 1875.

Fig. 1.

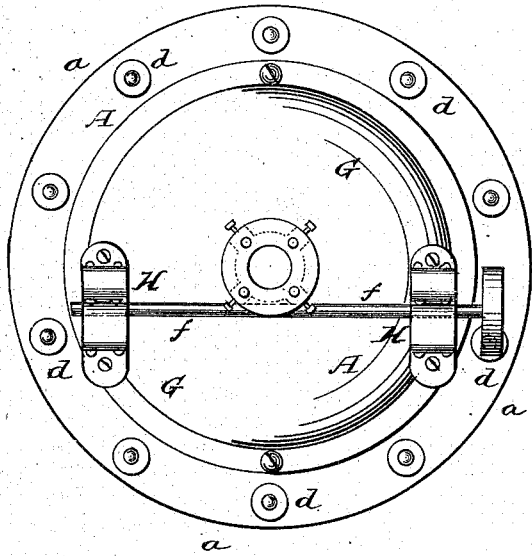


Fig. 2.

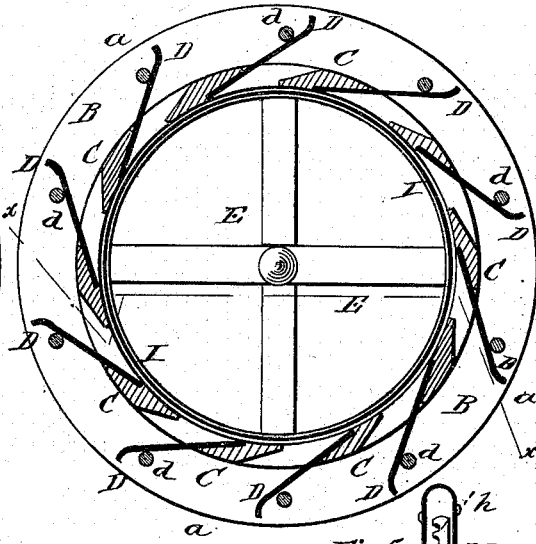


Fig. 4.

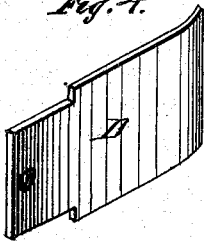


Fig. 3.

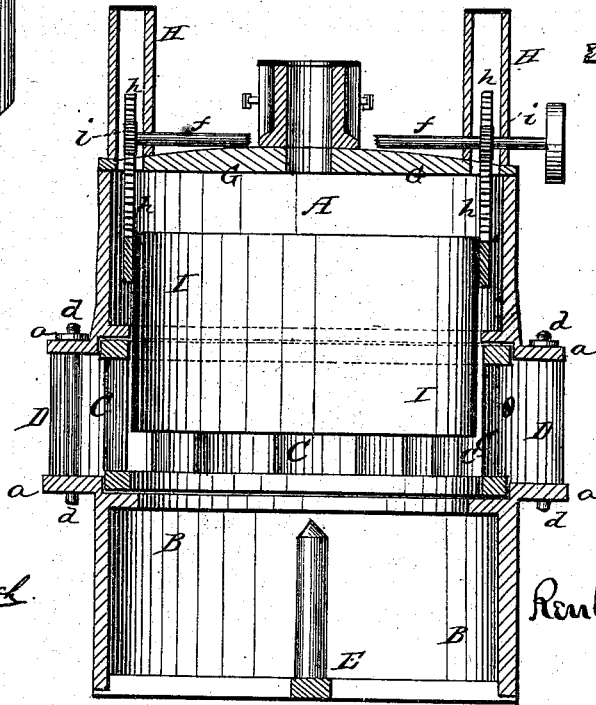
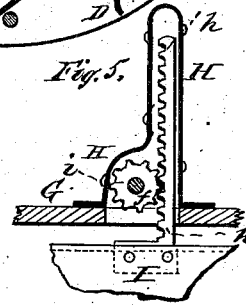


Fig. 5.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

REUBEN R. ROYER, OF EPHRATA, PENNSYLVANIA.

## IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. **160,958**, dated March 16, 1875; application filed February 9, 1875.

*To all whom it may concern:*

Be it known that I, REUBEN R. ROYER, of Ephrata, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements 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 which it pertains to make and use the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a water-wheel casing, whereby a reversible double-flumed chute is obtained, as will be hereinafter more fully set forth.

In the annexed drawing, Figure 1 is a top view. Fig. 2 is a horizontal section. Fig. 3 is a vertical section, and Figs. 4 and 5 are detail views, of a device embodying my invention.

My water-wheel casing is made of three principal parts—a top flume, A, a bottom flume, B, and a center curb, C. The flumes A and B are cast exactly alike, each having at one end a flange, *a*, extending around the same, and at the same end an interior flange, *b*. The middle part, chutes, or curb C is cast of two annular rings, with triangular connecting-pieces set at an angle, and without any guides. D D represent the guides, which are bolted to the chutes or curb C, as shown, forming waterways in a direct course on the wheels. The flumes A B are connected together by bolts *d*, through the exterior flanges *a a*, securing the chutes C, with guide D between them, forming a casing with two flumes, both alike, which may be adapted to any wheel running

either to the right or left, because both ends are alike. In the bottom flume the bridge-tree E is secured, and on the top flume the lid G is fastened. The casing may be reversed any time, to suit the action of the wheel. The curb C is constructed with its guides so that it suits both ways, to be put in between the two flumes. On the lid G are formed two housings, H H, in each of which work a rack-bar, *h*, and pinion *i*, the two pinions being secured on a shaft, *f*, running across the lid, and operated by a hand-wheel at one end. The lower ends of the rack-bars *h* are fastened to a ring-gate, I, which opens and closes between the wheel and chutes.

I am aware that a ring-gate is not new, and I do not, therefore, claim such as my invention.

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

1. A reversible-flumed casing for water-wheels, as herein set forth.

2. The combination of the chutes or curb C, with guides D D, and the flanged flumes A and B, made exactly alike, to form a reversible casing for water-wheels, as herein set forth.

3. The combination, with a water-wheel casing, of the lid G, housings H H, gate I, rack-bars *h h*, and shaft *f*, with pinions *i i*, all constructed substantially as and for the purposes herein set forth.

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

REUBEN R. ROYER.

Witnesses:

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S. S. VON NIEDA.