

H. H. Cummings,

Scroll for Water Wheels.

No. 97610.

Patented Dec. 7. 1869.

Fig. 1.

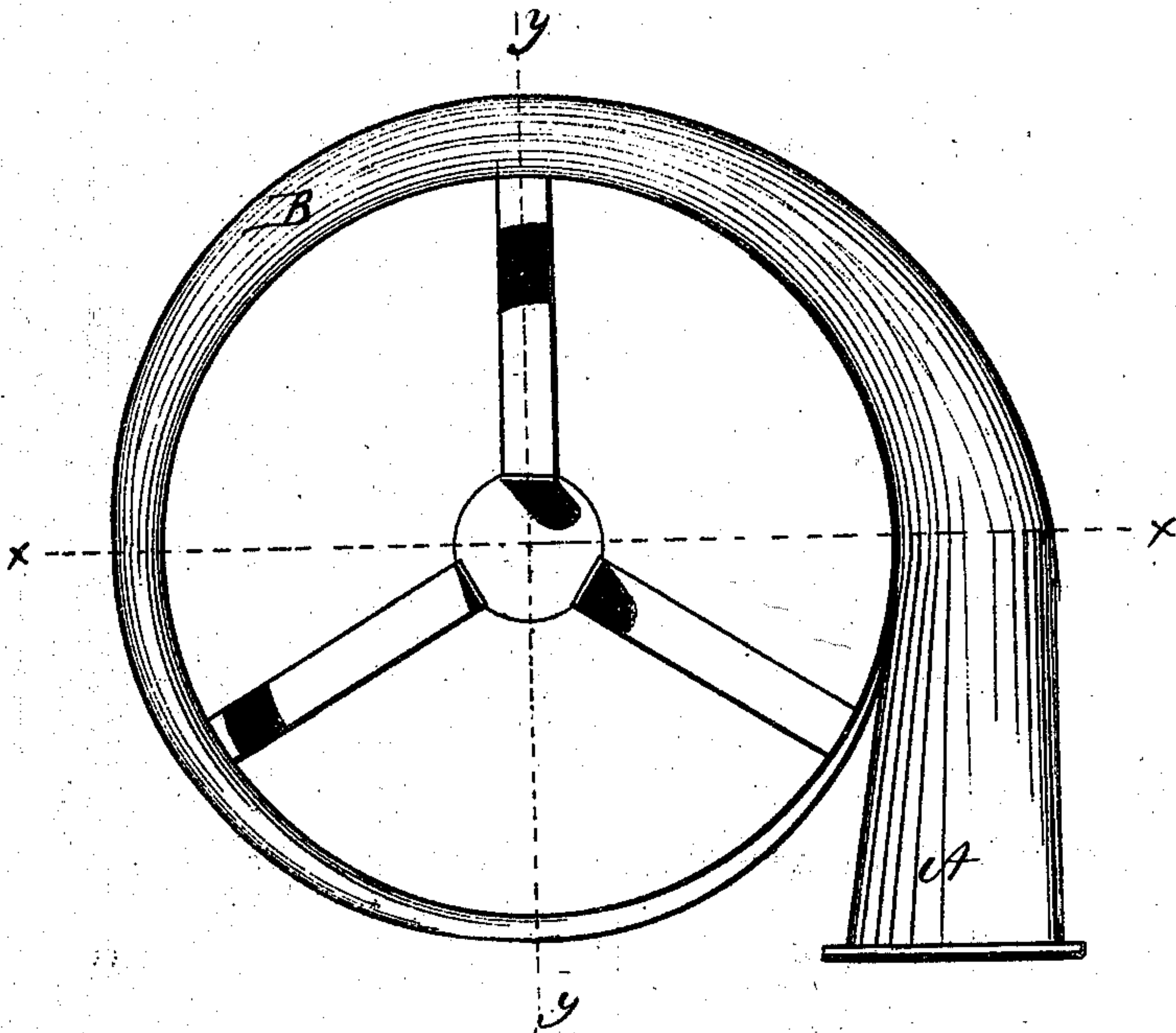
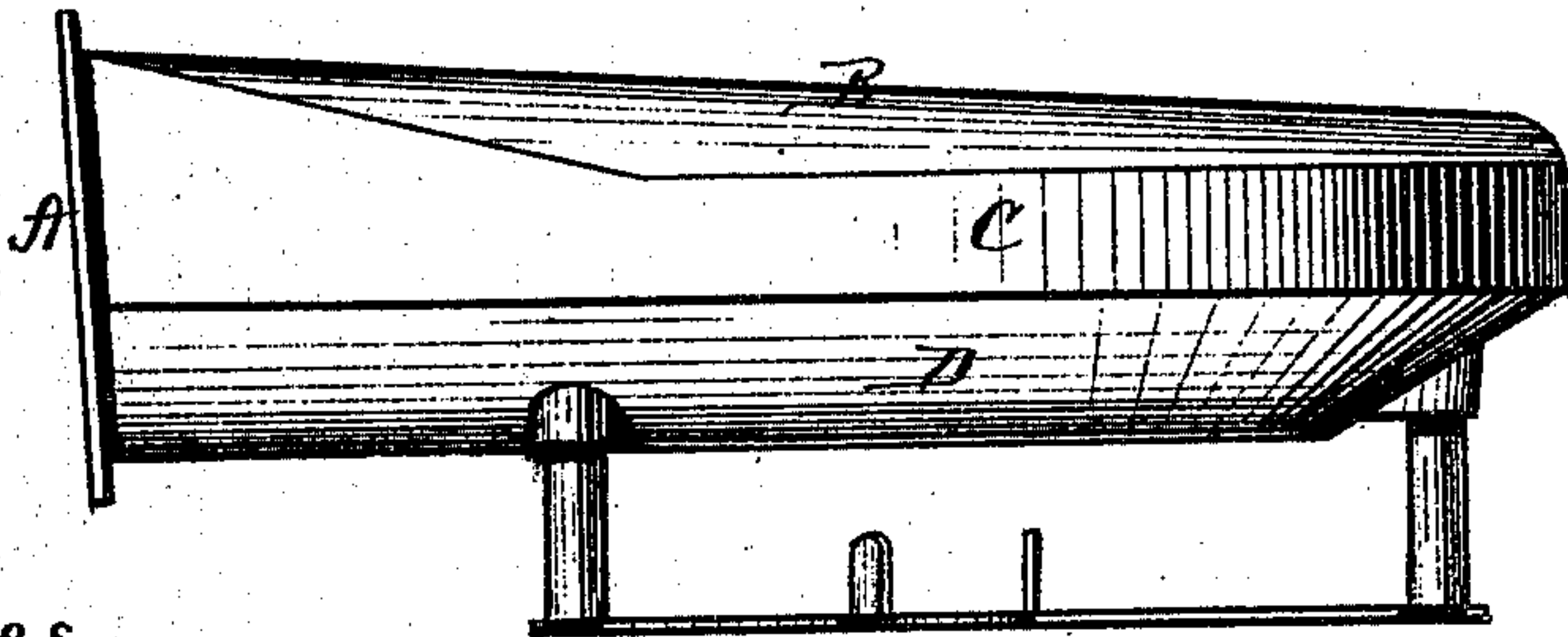


Fig 2.



Witnesses
F. A. Lehmann
C. L. Over

Inventor
H. H. Cummings
per
Alexander Thayer
Atty.

H. H. Cummings,

2 Sheets, Sheet 2.

Scroll for Water Wheels.

No. 97,610.

Patented Dec. 7, 1869.

Fig. 3.

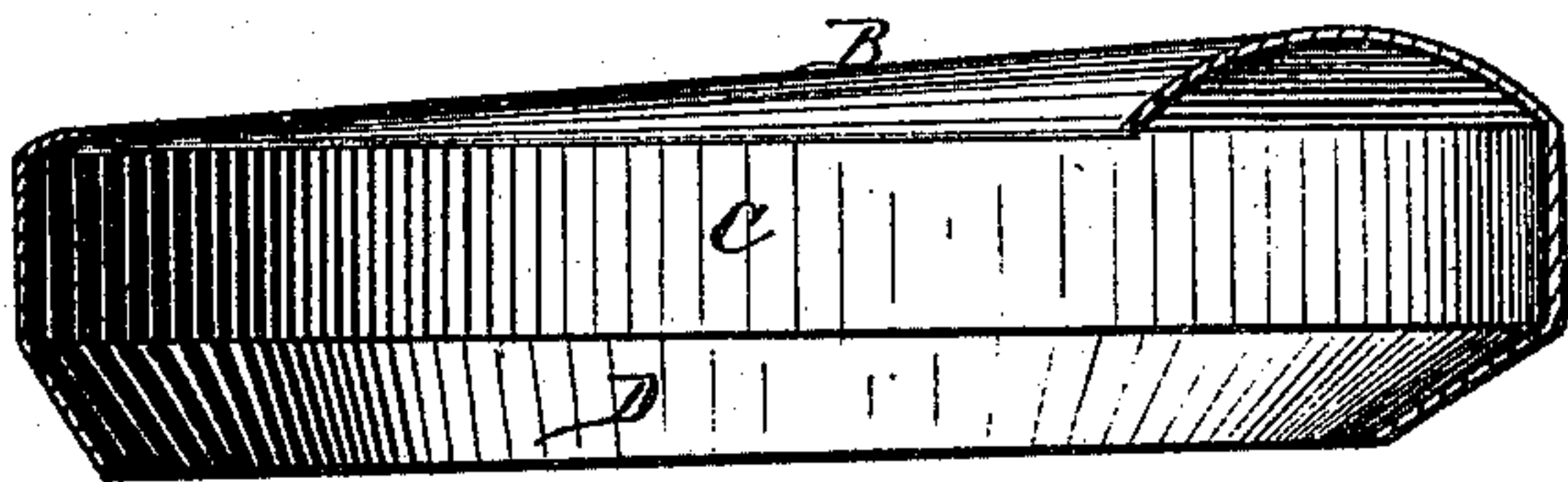
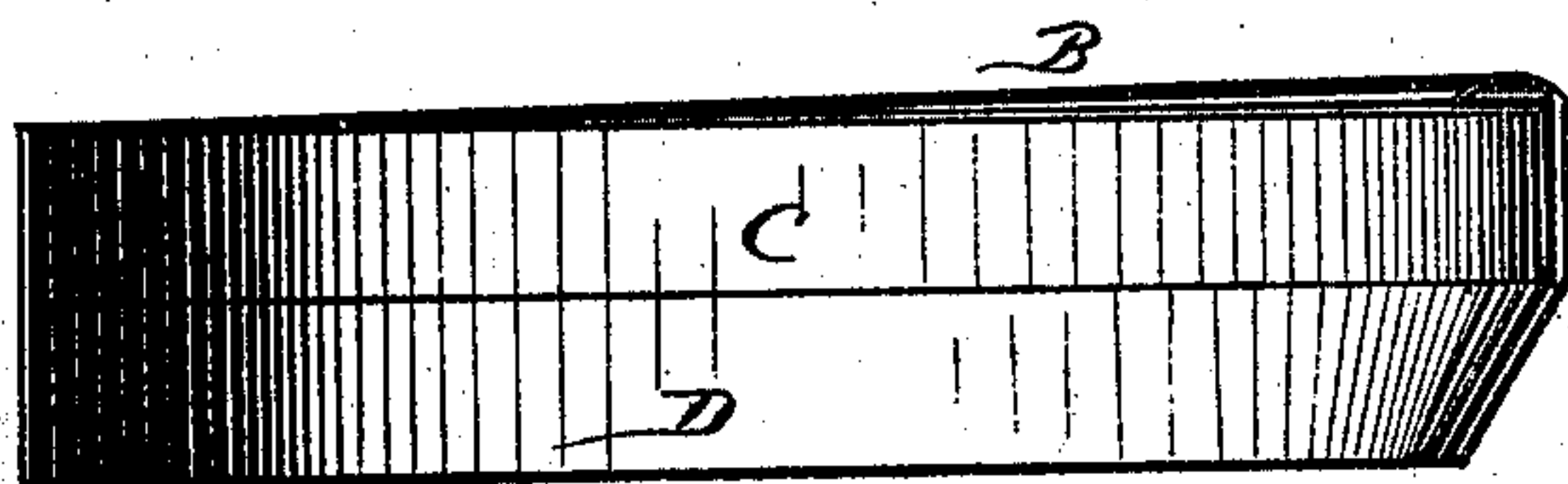


Fig. 4.



Witnesses

J. Lehmann
C. L. Ewert

Inventor.

H. H. Cummings
per Alexander Murray
Atty.

United States Patent Office.

HOMER H. CUMMINGS, OF ENFIELD, NEW HAMPSHIRE.

Letters Patent No. 97,610, dated December 7, 1869.

IMPROVEMENT IN WATER-WHEEL SCROLL-CHUTES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HOMER H. CUMMINGS, of Enfield, in the county of Grafton, and in the State of New Hampshire, have invented certain new and useful Improvements in Scrolls for Water-Wheels; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction of a "scroll for water-wheels;" and in order to enable others skilled in the art to which my invention appertains, to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a plan view, and

Figure 2, a side view.

Figure 3 is a vertical section, through line *x x*, fig. 1, and

Figure 4 is a vertical section, through line *y y*, fig. 1.

The relative positions of a water-wheel and the scroll-curb are too well known to need any explanation; hence, I will only mention the peculiar construction and formation of the curb.

The inlet A, into the scroll, is so constructed, at the point where the water strikes the first bucket, as to contain a quantity of water equalling or exceeding five-eighths of the whole amount used, above the middle of the buckets, which continues around three-fourths of the circumference of the curb, or more.

The top B of the scroll is semi-oval, and graduates

down to a flat top during the last quarter of the curb, and its back, C, is slightly bevelled, by which means the water is brought down to its work.

The bottom D is bevelled, and graduates in such a manner that the angle it forms with the back is gradually increased and the width of the bottom gradually lessened, so that at the fourth quarter, or rather, the last portion of the fourth quarter, the bottom becomes perpendicular, thus holding the water upon a natural angle while running around a curvature, thereby causing less friction and giving more power, and at the same time holding the water in a solid body, and speedily repairing the breakage of the water broken by the buckets, or from any other cause.

The bevelled bottom also gives less impediment to the power of the water-wheel while running in back water.

The bottom D may, in addition to its being bevelled, also be concave or depressed inwardly, which depression will also gradually decrease, until, as above stated, the bottom becomes perpendicular.

Having thus fully described my invention,

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

A scroll-curb for water-wheels, having a graduating semi-oval top, and a graduating bevel or slightly concave bottom, substantially as shown and described.

In testimony that I claim the foregoing, I have hereunto set my hand, this 18th day of August, 1869.

HOMER H. CUMMINGS.

Witnesses:

WARREN C. CLOUGH,
G. W. CONANT.