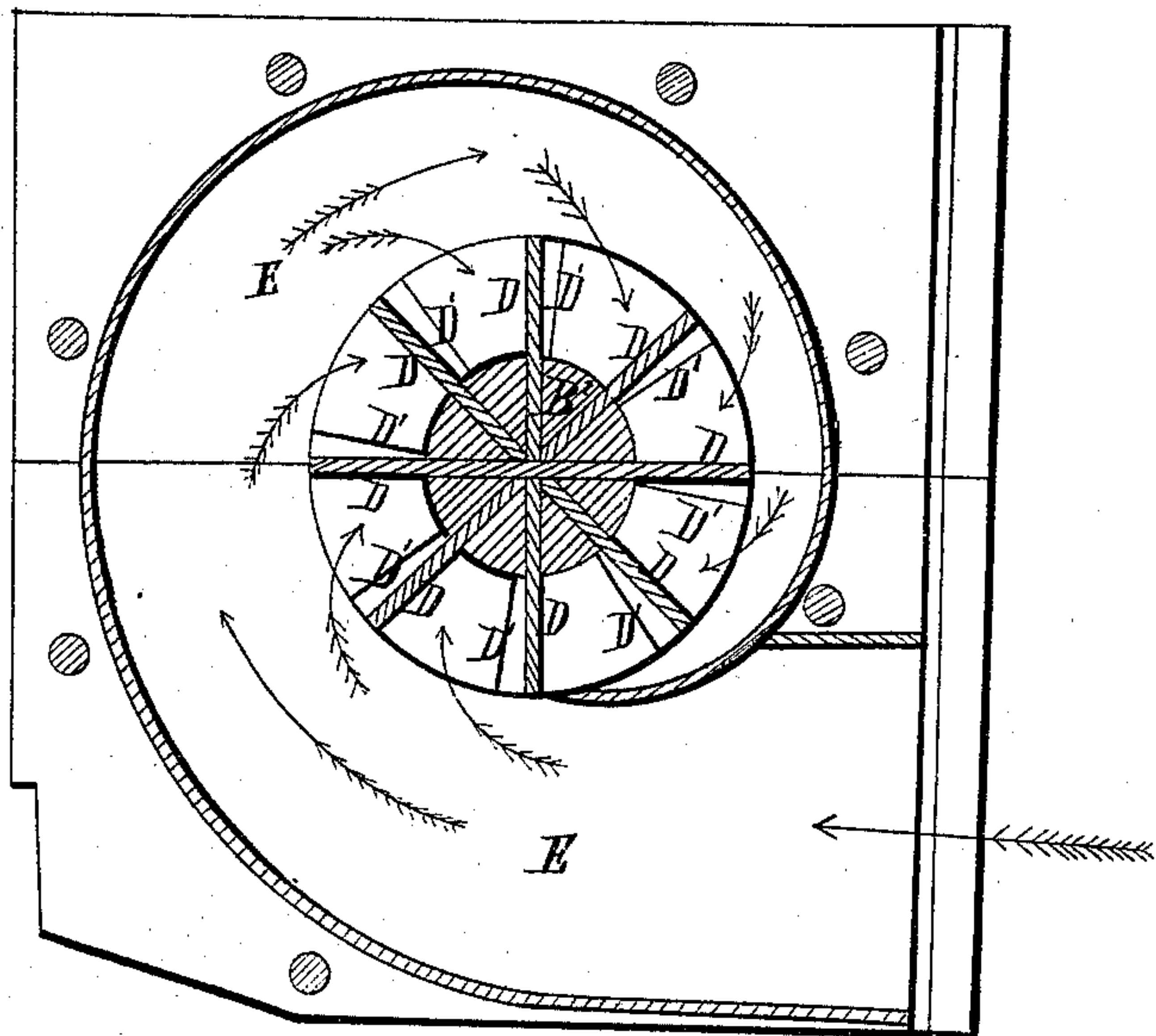
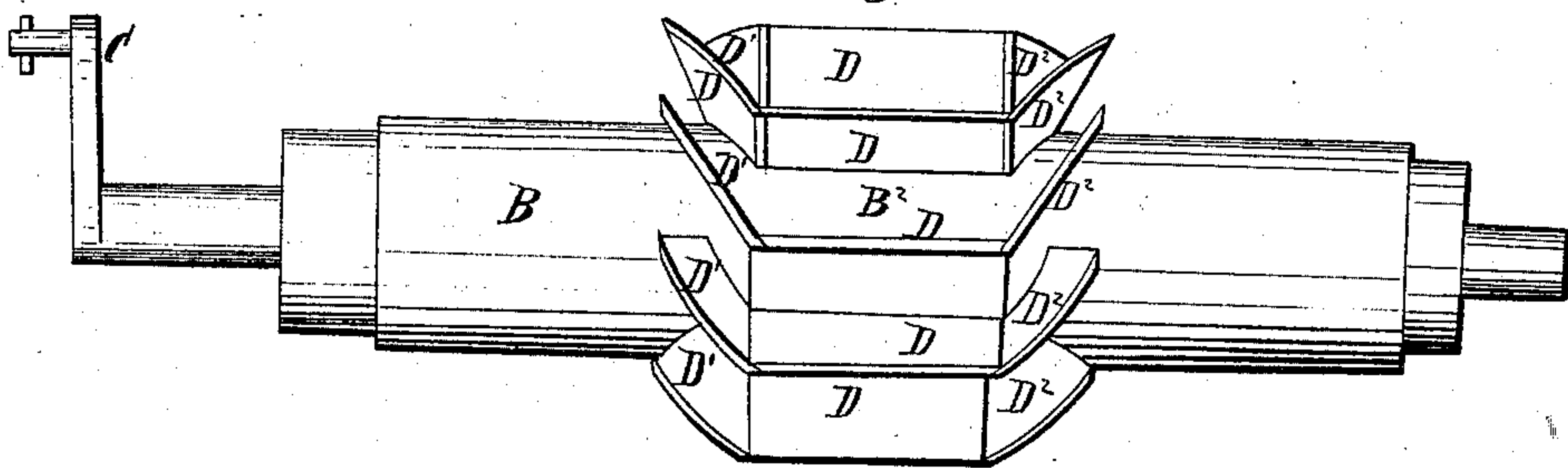


*E. B. Lansing,*  
*Water Wheel,*  
*No. 2,726,* *Patented July 16, 1842.*

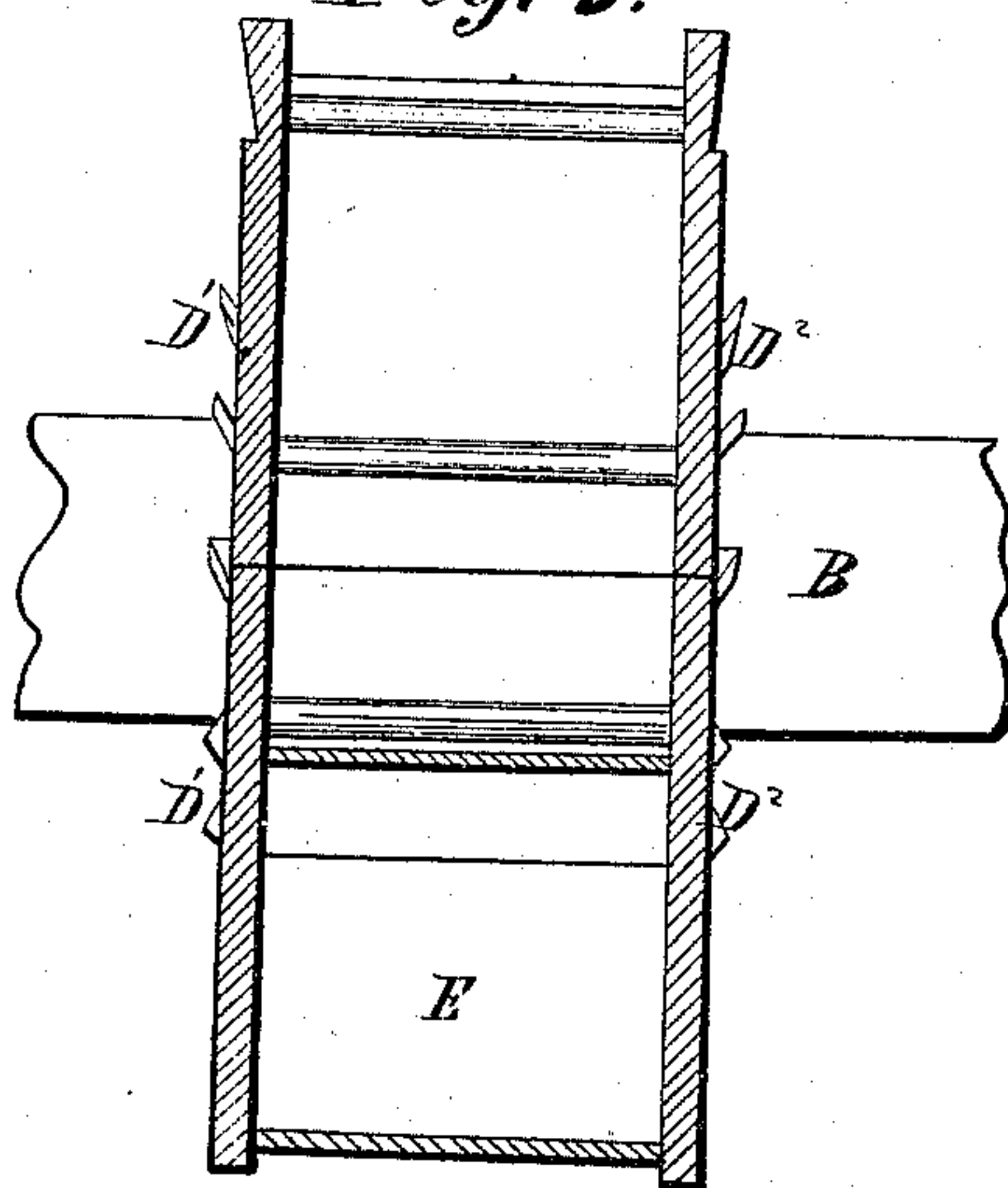
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



# UNITED STATES PATENT OFFICE.

ELI B. LANSING, OF WHEELING, INDIANA.

## IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. 2,726, dated July 16, 1842.

*To all whom it may concern:*

Be it known that I, ELI B. LANSING, of Wheeling, in the county of Delaware and State of Indiana, have invented a new and useful Improvement in Water-Wheels, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a vertical section through the center of the wheel and scroll-case. Fig. 2 is a longitudinal view of the wheel detached from the case. Fig. 3 is a transverse section at the line  $x x$  of Fig. 1.

The bulk-head A, shaft B, and crank C are made in the usual or in any convenient manner. The shaft may be placed in a horizontal or a vertical position.

The improvement is principally in the manner of constructing the buckets in combination with a scroll or spiral case surrounding them for condensing the water and causing it to act by percussion and reaction.

The wheel is made in the following manner: The core  $B^2$ , which is a part of the shaft, is cylindrical, of any convenient diameter. The buckets D are each made of three planes—a middle plane D and two inclined end planes  $D' D^2$ . The middle plane D is parallel with the axis of the shaft and radiates from the circumference of the core, and is of any required length and breadth. The two end planes  $D' D^2$  are arranged at the ends of the radiating plane, at an angle therewith of about one hundred and thirty-five degrees, each end plane inclining in an opposite direction to the other or upward toward either end of the shaft, or standing at an angle of about forty-five degrees with a plane passing through the center of the shaft, lapping over every preceding bucket about one and one-half inch, contracted at the outlet and widened at the verge. When the wheel is placed in a vertical position, the scroll-case E sur-

rounding the same commences at the bottom thereof and winds entirely around the wheel or buckets in a spiral or scroll form, gradually increasing the length of the radial lines until the scroll reaches a point perpendicularly below the commencement of the scroll, from which point the case is made horizontal and continued a sufficient length to form one side of a tangential case, the other sides being formed with straight planes, which tangential case is the mouth of the scroll-case and which is opened or closed from the flume, communicating therewith in the usual manner by a vertical sliding gate. The width of the scroll should be equal to the length of the buckets and closed at both ends by scroll ends, causing the water to be forced toward the center of the wheel and to escape to the right and left through two sets of inclined issues. The water is admitted to the scroll at the mouth thereof from the flume by raising the gate. It passes round in the scroll-case to the buckets of the wheel in the direction of the arrows, and acts upon the radial portions D of the buckets by percussion and on the inclined ends  $D' D^2$  of the buckets by reaction in escaping from the ends of the wheel, causing the wheel to turn vertically in a contrary direction from that at which the water escapes and in the same direction at which it first strikes the middle of the buckets. The wheel may be made to turn horizontally on the same principle as the vertical wheel.

What I claim as my invention, and which I desire to secure by Letters Patent, is—

Constructing the radial buckets D with inclined plane ends  $D' D^2$ , diverging in contrary directions, in combination with the spiral or scroll case E, as herein specified and described.

ELI B. LANSING.

Witnesses:

WM. P. ELLIOT,  
EDMOND MAHER.