N. Bowker,

Water Wheel

No. 52,021. Patented Jan. 16, 1866.

Fig: 1

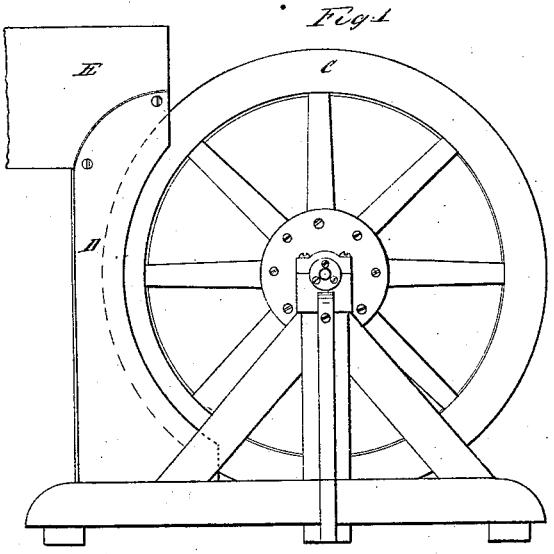


Fig: 2

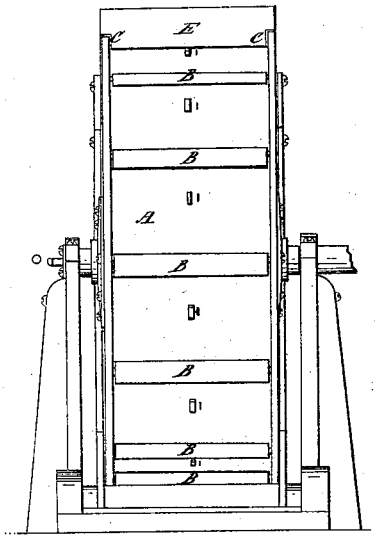


Fig: 3

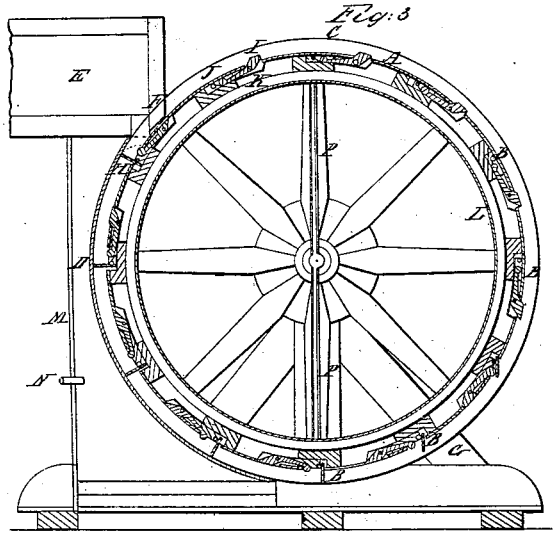
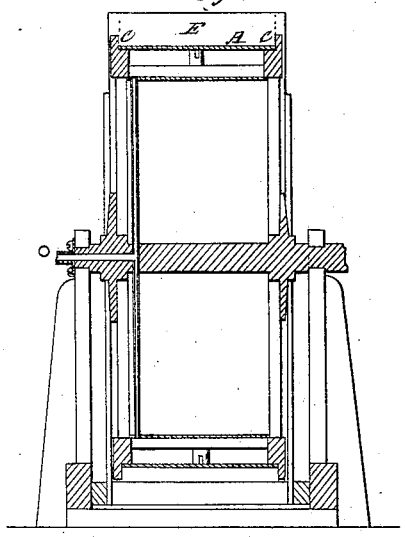


Fig: 4



Witnesses:
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O. P. Hatfield

Inventor:
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UNITED STATES PATENT OFFICE.

NELSON BOWKER, OF NEW YORK, N. Y.

IMPROVEMENT IN WATER-WHEELS.

Specification forming part of Letters Patent No. **52,021**, dated January 16, 1866.

To all whom it may concern:

Be it known that I, NELSON BOWKER, of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Water-Wheels; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side elevation. Fig. 2 is an end elevation. Fig. 3 is a longitudinal section, and Fig. 4 is a transverse section.

I construct the frame of the wheel of timber, in a good substantial manner, as shown, and cover the periphery A with boards, neatly, and as near air-tight as possible, leaving openings for the bucket-boards B at regular intervals, as shown. I raise the sides C of the wheel above said periphery a distance equal to the projection of the bucket-boards, and construct the breast D on a curve corresponding with that of the said sides C. I extend the flume E out to the boarded periphery of the wheel, and fit it nearly tight thereto, as at F, Fig. 3. The bucket-boards B are hinged at the ends to the timber-frame C, the hinges being placed at one side of the boards, as shown by the black points. The opening for the discharge of the water from the flume at F, Fig. 3, is closed with an ordinary valve, upon the opening of which the water is thrown into the space between the periphery of the wheel and the breast, and, being caught by the bucket-boards, exerts the whole force of its weight upon the wheel and causes it to revolve. As the bucket-boards come up out of the water at G, Fig. 3, the hinge allows them to hang vertically, and when they reach the top of the wheel they are closed into the space allowed for them in the periphery of the wheel; but after they pass the point F, Fig. 3, the water throws them open in their proper effective position, as at H, Fig. 3. But in order that the water may get a proper purchase, to insure their being thrown open immediately after they have passed the point F, Fig. 3, I have devised the levers J I, Fig. 3, and applied one to each bucket-board. Said lever having its fulcrum at K, and the end I projecting beyond the periphery of the wheel, it is evident that when said projecting end strikes the edge F of the flume the end J will be thrown out, and thereby throw out the bucket-board H.

In order to prevent the water from freezing in winter, I construct a warm-air chamber within the periphery of the wheel, and also another within the breast, by providing a boarded lining to each, as at L and M, Fig. 3, and introduce warm air into said chambers by pipes at N and O, the aperture at O, Fig. 4, extending through the axle of the wheel and through two of its spokes, P P, Fig. 3, to the periphery, as shown. In some cases I propose to construct the inclosing portions of said warm-air chambers of metal instead of wood.

I claim—

1. The bucket-boards B, in combination with the levers J I.

2. Supplying the chambers in the wheel and breast with heat, substantially as and for the purpose described.

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Witnesses:

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