B. Holly.

Water Wheel.

No. 13,172. Patented July 3, 1855.

Fig: 1

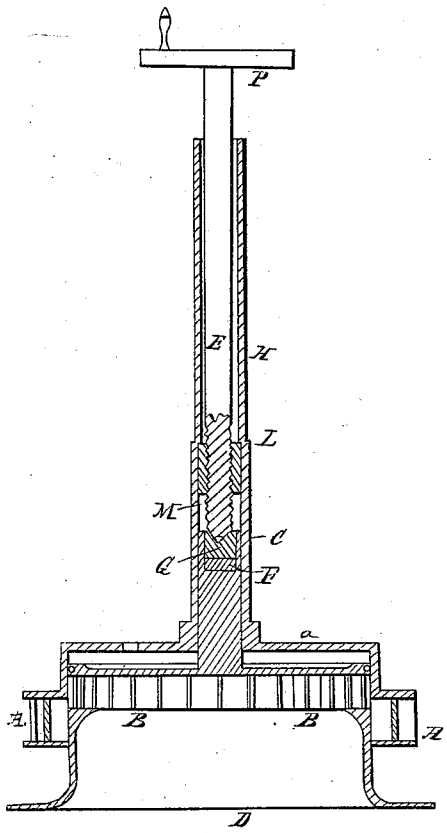
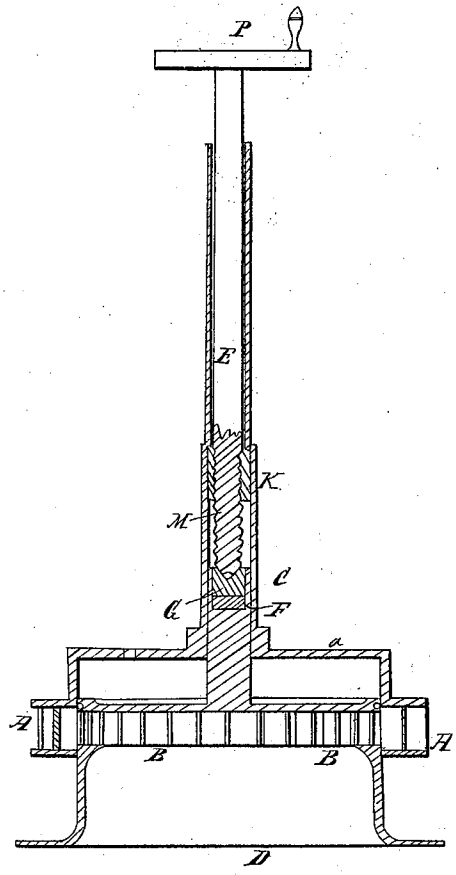


Fig: 2.



N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

BIRDSILL HOLLY, OF SENECA FALLS, NEW YORK.

METHOD OF REGULATING ISSUE-APERTURES AND OF SUSPENDING TURBINE WHEELS.

Specification forming part of Letters Patent No. **13,172**, dated July 3, 1855.

To all whom it may concern:

Be it known that I, BIRDSILL HOLLY, of Seneca Falls, in the county of Seneca and State of New York, have invented an Improvement in Water-Wheels; and I do hereby declare that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known, and of the usual manner of making, modifying, and using the same, reference being had to the accompanying drawings, of which—

Figure 1 represents a vertical section through the arrangement and showing the wheel A below the chutes, thus stopping the motion of the wheel; Fig. 2, a vertical section with the wheel raised in a line with the chutes B B.

My invention consists in a mode of opening and closing and regulating the extent of the issues of a turbine water-wheel, which is hung upon a pivot-bearing above the wheel, by which the whole operation is greatly simplified and by which I obtain a very efficient wheel.

I use any of those forms of turbine wheels in which the buckets are in a tub or disk exterior to the stationary chutes, irrespectively of the form of the buckets and chutes.

The wheel A, which revolves exterior to the series of chutes B B, &c., is hung from above upon a pivot-bearing *c* in the following manner: The chute-disk B B, being fixed and bolted down to the orifice of the flume D, has fixed to its center a vertical stem E, bearing in its top a cylindrical cavity or cup, into which are inserted a block of steel F and a steel step G. The step G is loose, so as to be turned in its cup. From the disk *a* of the wheel A there arises a hollow cylindrical stem or driving-shaft H, which has a cylindrical bore varying in size. The larger portion of the bore surrounds the stem E of the fixed disk and contains at its upper part a nut K, which bears against the shoulder at L, formed by the diminution in the size of the cylindrical bore at that point. Through this nut passes the screw M, attached to the regulating-stem N, and the lower part of this screw is properly pointed and rounded to form the pivot-bearing upon the step G. The regulating-stem carries at its top the hand-wheel P, and it will be readily seen from the drawings that as this wheel is turned the action of the screw and nut raises or lowers the wheel A, and thus regulates the extent of the issues.

What I claim as my improvement is—

The mode herein described of opening and closing the issues and regulating their extent, in combination with the mode of hanging the revolving wheel, as herein set forth.

BIRDSILL HOLLY.

Witnesses:

GEO. W. MEAD,

C. J. MCKEE.