J. B. Reyman,

Water Wheel.

No. 111,381. Patented Jan. 31. 1871.

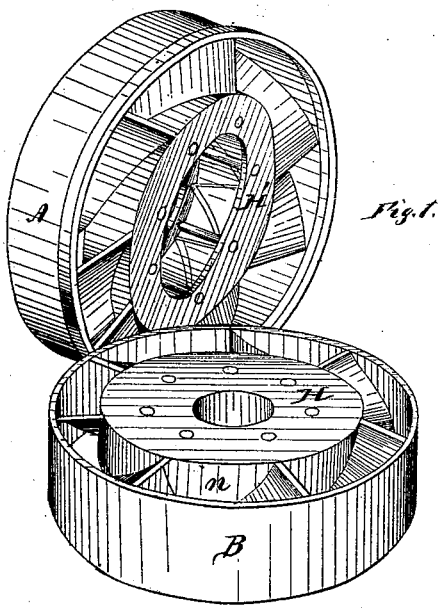
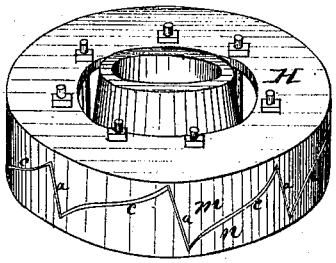


Fig. 1.

Fig. 2.



Witnesses.

Wm. M. Heeg.

Geo. McGoy.

Inventor.

J. B. Reyman.

United States Patent Office.

JACOB B. REYMAN, OF SPRINGFIELD, MISSOURI, ASSIGNOR OF ONE-HALF HIS RIGHT TO DONALD W. CAMPBELL, OF SAME PLACE.

Letters Patent No. 111,381, dated January 31, 1871.

IMPROVEMENT IN WATER-WHEELS.

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, JACOB B. REYMAN, of Springfield, in the county of Greene, in the State of Missouri, have invented an improved Method of Constructing the Hubs of Turbine Water-Wheels; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention relates to that class of wheels which has radial or spiral buckets arranged around a hub or center, and consists in forming this hub in such a manner that the labor of fitting in these is considerably reduced as compared to the usual modes of mortising, casting in, &c.

This class of turbines, as is generally known, consists of two parts, one called the wheel proper, and containing the buckets, and the other called the "stationary wheel" or guide-plate, containing the guides. Both of these have similar hubs and my invention refers alike to each.

Figure 1 is a perspective view of the wheel complete.

A being the guide-plate, and

B, the wheel.

H and H', are the hubs.

Figure 2 shows this hub, also in perspective, and somewhat enlarged, and it is to the peculiarities of this that my invention refers.

These hubs are made of cast-metal, and the wood pattern from which they are cast is made in two pieces, *m* and *n*, by sawing it apart on the lines *c c c c c* and *a a a a a*, (being continued around it in the same order,) thus forming two notched or serrated pieces, the object being that the lines *c c c c*, &c., shall form mortises or recesses for the tenons of the buckets or guides.

The metal on these lines is about one inch thick and the the tenons are cut about this length.

The shoulders fit snugly onto the hub at either side and slight notches or grooves are cut as continuations of the mortise in the right direction for the proper shape of the bucket or guide, quite up to the face on either side.

Common bolts with countersunk heads, as in fig. 1, and with nuts on the other end, as shown in fig. 2, (the hub here being upside down,) are used to bolt and bind the whole together, griping the tenons as in a vise.

After the guides or buckets are all in place and turned or filed off true on the face or outer edges, common wrought-iron bands are shrunk on, binding the whole together.

It will be noticed that the lines *c c c c*, &c., may be cut curved or straight, as needed, for the buckets or the guides.

The rims of the wheel and guide-plate may be turned off true to make a water-joint in any of the usual ways.

Claim.

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

A hub or center for a turbine water-wheel, formed by the union of the parts *n* and *m*, bound in the manner substantially as described.

JACOB B. REYMAN.

Witnesses:

WM. M. HALEY,

GEO. M. COX.