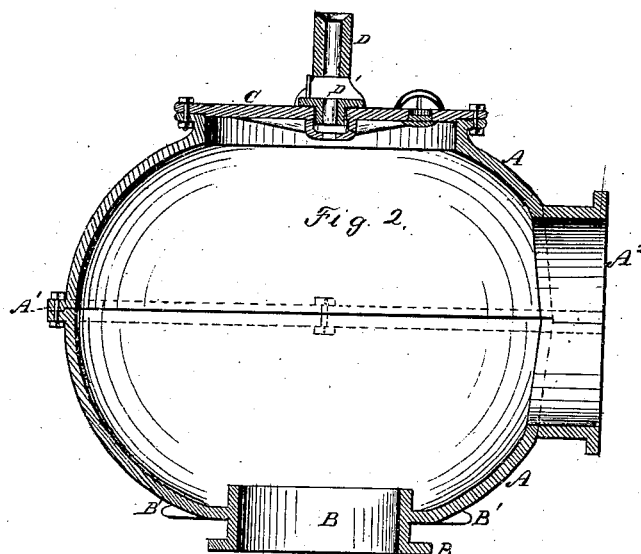
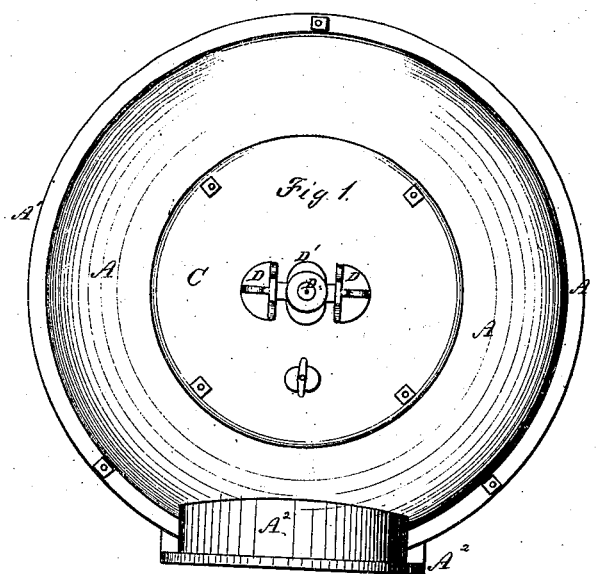


No. 110,544.

PATENTED DEC. 27, 1870.

J. W. BOOKWALTER.
WATER WHEEL.



Witnesses
A. Ruppert.
C. H. Clausen.

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JOHN W. BOOKWALTER, OF SPRINGFIELD, OHIO.

Letters Patent No. 110,544, dated December 27, 1870.

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, JOHN W. BOOKWALTER, of Springfield, in the county of Clark and in the State of Ohio, have invented new and useful Improvements in Water-wheel Cases; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a plan view of my improved case or fore-bay, showing the nozzle for attaching the pipes or flumes which conduct the water to it, and the removable cap or cover through which the shaft of the wheel passes.

Figure 2 is a central vertical section, showing the method of attaching the removable cap and of securing together the two sections of the case.

Corresponding letters refer to corresponding parts in both figures.

This invention relates to that class of devices known as water-wheel cases or fore-bays; and

It consists in certain combinations of its parts, as will be more fully explained hereinafter.

A¹ refer to the case, which is of a spherical or nearly spherical form in its general outline, it being made in two sections, each one of which is provided with a flange, A¹, through which bolts pass for the purpose of securing them together.

The sections are also provided with a semicircular nozzle, which, when the two are bolted together, form the water-induction nozzle, A², it being provided with a flange for attaching to it a pipe or flume for conducting the water to its interior.

Upon the bottom of the case there is placed a discharge-nozzle, B, which extends up into the case three inches, more or less, and has upon its lower end a flange to which to bolt a pipe, if found necessary.

Just above and outside of the nozzle B there are screwed four or more feet or rests, B', by which the case is secured to its foundation, by passing bolts through such rests and into the foundation.

Upon the upper portion of the case there is raised a flange, which surrounds an aperture in said case, which aperture is of sufficient dimensions to admit of the wheel being passed through it and placed therein after it has been secured to its foundation, so that

the wheel may be removed from the case after it has been placed therein without removing any part thereof, except a cap, which covers said aperture.

The cap C, which is shown as covering the aperture above alluded to, is to be bolted to the case, as shown in fig. 1, it having been provided at its center with an aperture through which the shaft may pass, and with a yoke, D, for the purpose of forming a bearing for such shaft to rotate in, and also with a stuffing or packing-box and gland for forming a tight joint around the shaft, so that no water shall escape at that point.

The cap C is also provided with a man-hole at one side of the point where the shaft of the wheel passes through it, it being for the purpose of allowing a person to enter the case in the event of its becoming necessary in order to make any slight repairs of the wheel or to remove any obstruction therefrom. This man-hole is to be covered with a plate, which is held in position by a bolt which passes through it and through a bail, in the manner shown in fig. 2.

The advantage of the combination and arrangement of parts herein shown and described, and which has heretofore been hinted at, is obvious, it enabling the persons whose duty it becomes to remove the wheel from the case, after it has been placed in position, to do so without removing or detaching any portion of such case except the cap upon its top, thus avoiding much labor and expense and producing a considerable economy of time.

Having thus described my invention,

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

The combination of the spherical or nearly spherical case and the removable cap upon its upper surface, to permit the removal of the wheel, the parts being constructed and arranged substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN W. BOOKWALTER.

Witnesses:

WILLIAM A. SCOTT,
BENJAMIN H. WARDER.