

(No Model.)

2 Sheets—Sheet 1.

A. M. PASCAULT & J. F. M. H. DE COURSAC.

WATER WHEEL.

No. 570,951.

Patented Nov. 10, 1896.

Fig. 2.

2
Z²

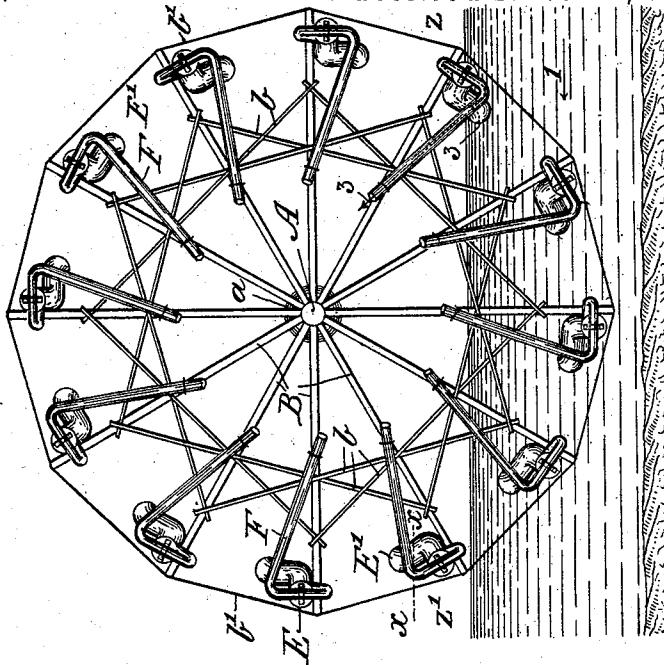
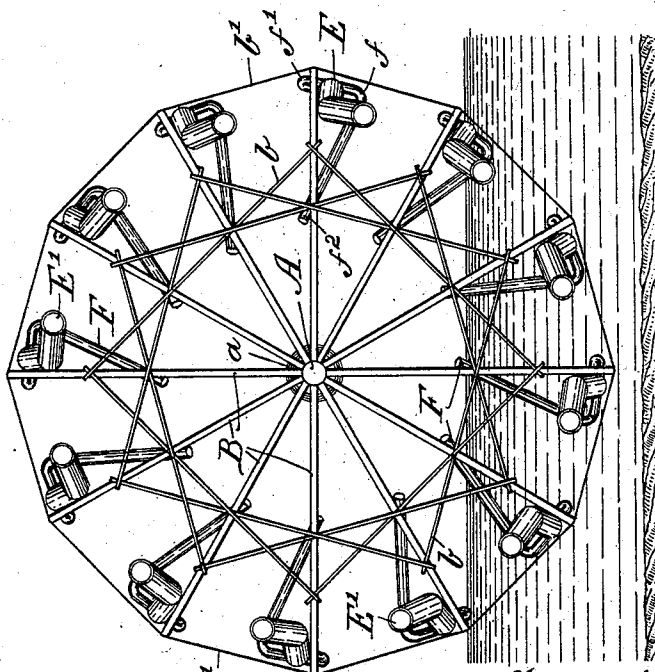


Fig. 1.



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2 Sheets—Sheet 2.

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Fig: 3.

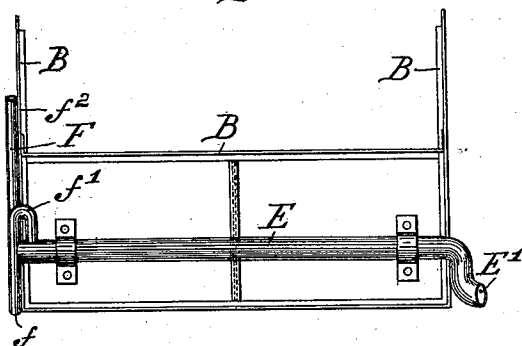


Fig: 4.

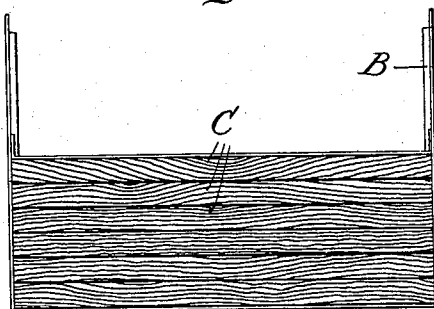


Fig: 5.



Fig: 6.

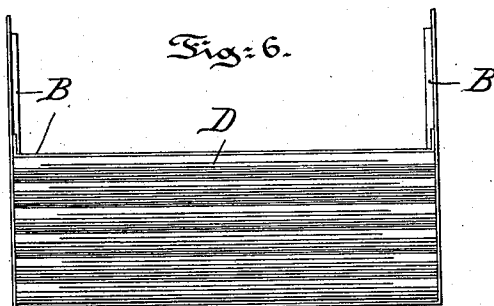


Fig: 7.

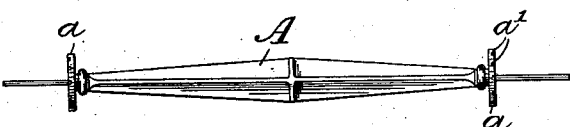


Fig: 8.

Fig: 9.

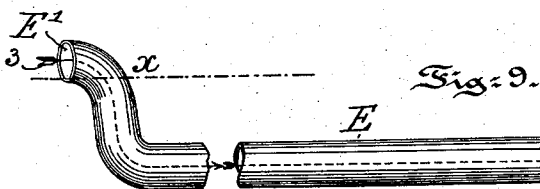


Fig: 9.

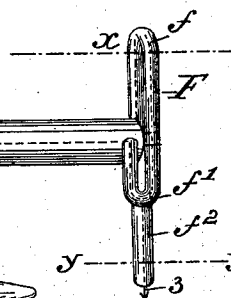


Fig: 10.

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UNITED STATES PATENT OFFICE.

ANDRÉ MARC PASCAULT AND JACQUES FRANÇOIS MARIE HENRY DE
COURSAC, OF VIVONNE, FRANCE.

WATER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 570,951, dated November 10, 1896.

Application filed July 14, 1896. Serial No. 599,181. (No model.) Patented in France January 15, 1896, No. 253,182, and in England June 9, 1896, No. 12,694.

To all whom it may concern:

Be it known that we, ANDRÉ MARC PASCAULT and JACQUES FRANÇOIS MARIE HENRY DE COURSAC, citizens of France, residing at Vivonne, (Vienne,) France, have invented certain new and useful Improvements in Water-Wheels, (for which we obtained French Letters Patent No. 253,182, dated January 15, 1896, and British Letters Patent No. 12,694, dated June 9, 1896;) and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Our invention has relation to a water-elevating wheel, and in such connection it relates particularly to the construction and arrangement of such a wheel and of the elevating-buckets thereof.

The principal object of our invention is to provide in a water-wheel a series of buckets, each consisting of a long horizontally-arranged tube, an open-ended elbow secured to one end of said tube, and a double-U-shaped siphon connected with the other and closed end of said tube.

Our invention, stated in general terms, consists of a water-elevating wheel constructed and arranged in substantially the manner hereinafter described and claimed.

In the accompanying drawings, forming part hereof, Figure 1 is a side elevational view of the discharge side of the wheel. Fig. 2 is a similar view of the opposite side of the wheel. Fig. 3 is a front elevational view of the framework of one of the paddles of the wheel, together with one of the siphonic buckets held in operative position thereon. Fig. 4 is a front elevational view of one of the paddles or wings, the face of which is formed of overlapping boards. Fig. 5 is an end elevation of Fig. 4. Fig. 6 is a front elevational view of a paddle or wing having a face of corrugated metal. Fig. 7 is a front elevation of the axis of the wheel. Fig. 8 is an end elevation of Fig. 7. Fig. 9 is a front elevational view, enlarged, of one of the siphonic

buckets; and Fig. 10 is a front elevational view of a mandrel or rod adapted to be inserted in the horizontal portion of the bucket to decrease its capacity.

Referring to the drawings, A represents the axis of the wheel, adapted to be suitably supported in bearings. (Not shown.) At either end of the axis is located a disk *a*, having a series of radiating grooves or channels *a'*, into which the ends of the frames B of the paddles may be inserted and to which the same may be secured in any suitable manner. The frames B of the paddles or wings are held in suitable and rigid position by means of the cross-bars *b* and the hoops or straps *b'*.

To the framing of the paddle is secured a step-like face, either of overlapping boards C, as illustrated in Figs. 4 and 5, or of corrugated metal D, as shown at Fig. 6, to constitute an irregular face for the paddle and thereby lessen the slip of the paddle in the water. To the frame B of each paddle is secured a siphonic bucket E, substantially as shown in Figs. 3 and 9. This bucket E consists of a horizontally-arranged tube, one end of which is open and merges into an elbow E', having a discharge-opening at its end. The other end of the tube is closed, but is in open communication with a double-U-shaped siphon-tube F, bent, as at *f* and *f'*, Fig. 9, and terminating in a straight open-ended tube *f*².

G is a rod or mandrel adapted to be inserted in the horizontal portion of the bucket E to lessen its capacity.

In Fig. 2 the arrow 1 represents the direction in which the current is flowing, the arrow 2 represents the direction in which the wheel is rotated by the current, and the arrow 3 in Figs. 2 and 9 represents the flow of air through the bucket as the bucket is gradually submerged in the current.

The line *xx* of Fig. 9 represents the extreme height to which the water rises in the siphonic bucket after the bucket leaves the water, and the line *yy* the height to which the water may rise in the straight portion *f*² of the siphon.

In Fig. 2, *z* represents the position of the bucket upon its entrance into the water, *z'* the position as it emerges from the water, and *z*² the point of discharge from the bucket.

