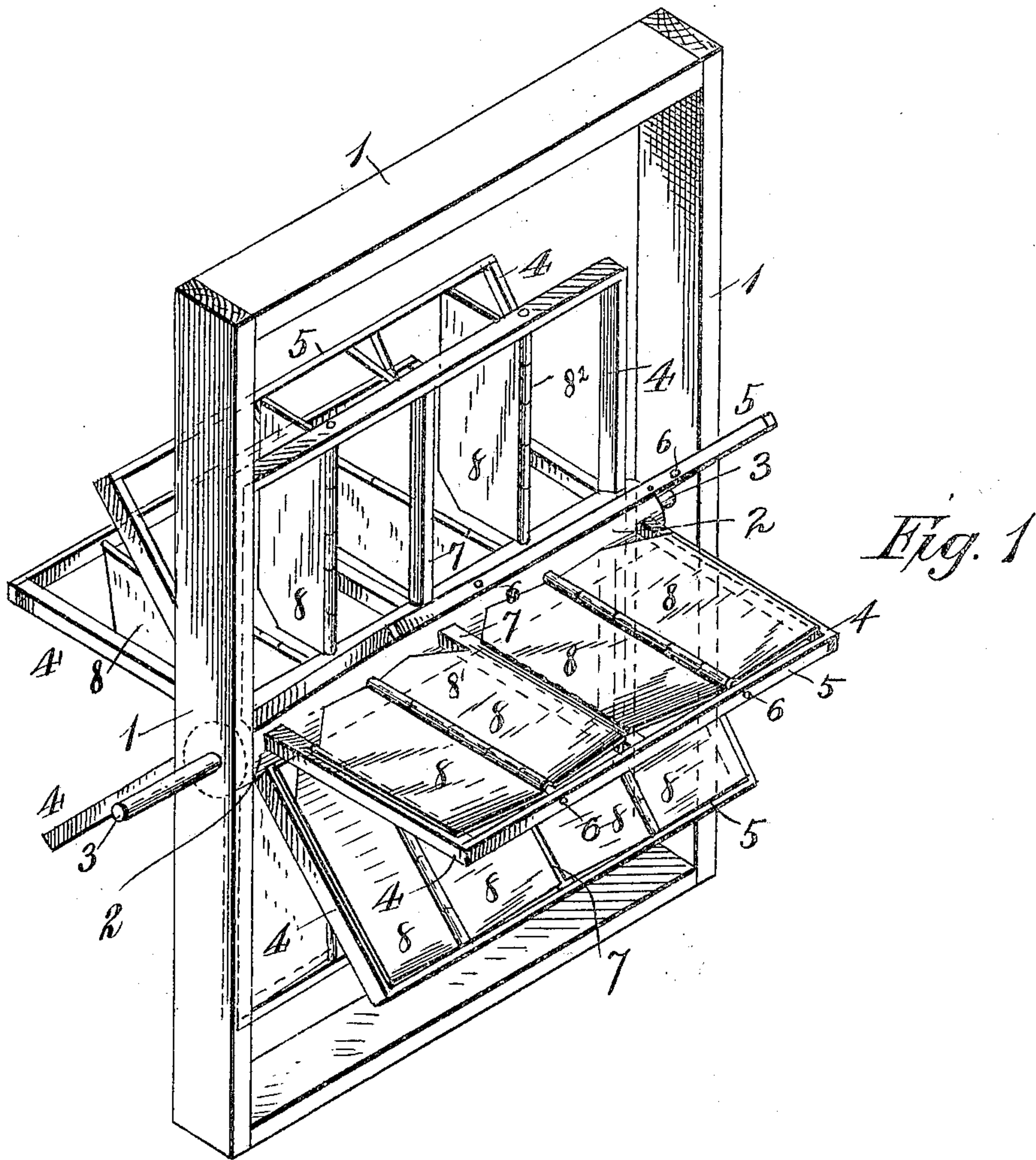


No. 817,870.

PATENTED APR. 17, 1906.

W. J. PATTON.
CURRENT WATER WHEEL.
APPLICATION FILED AUG. 21, 1903.

2 SHEETS—SHEET 1.



Witnesses
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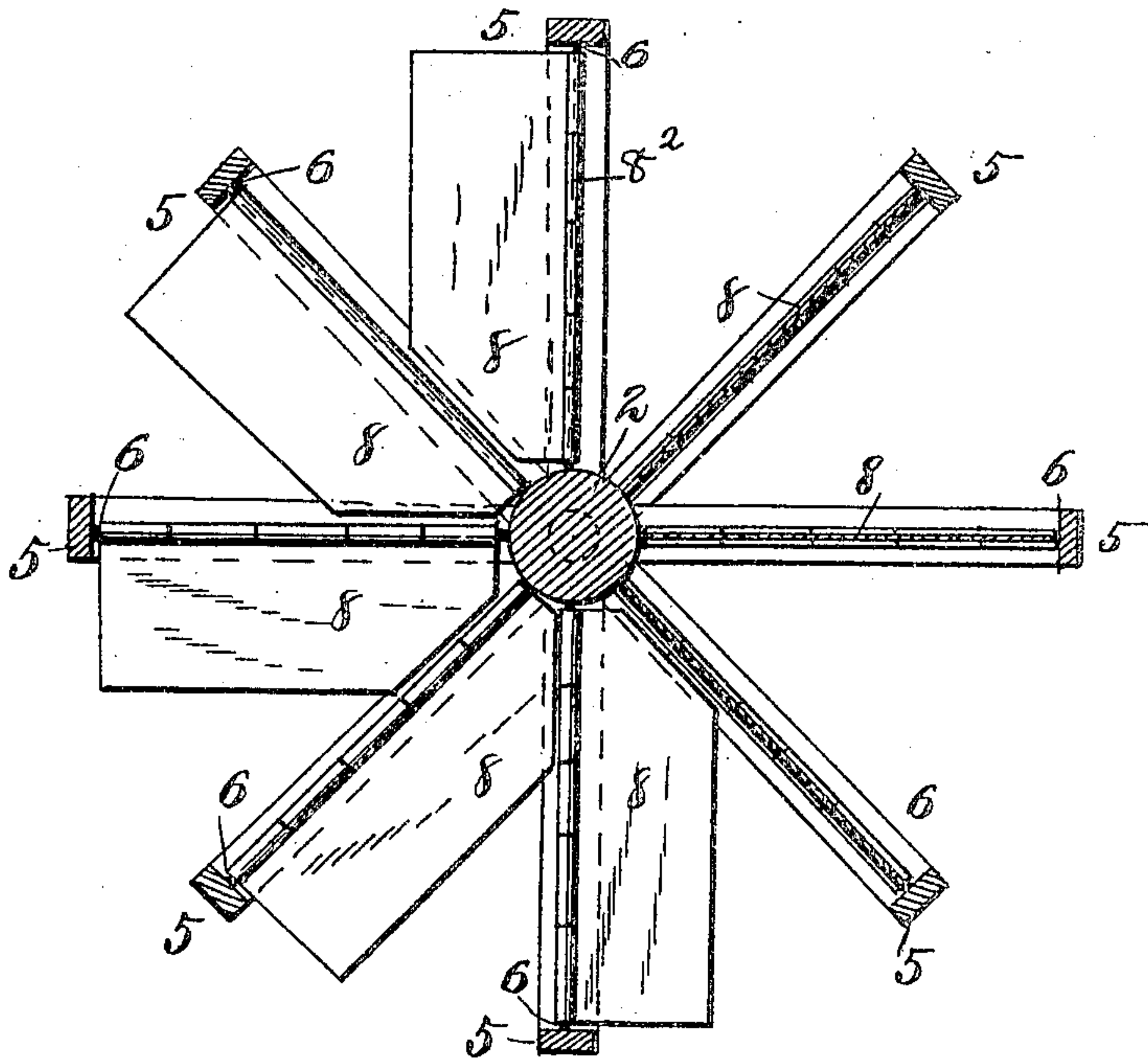
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2 SHEETS—SHEET 2

Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM J. PATTON, OF SPRINGDALE, ARKANSAS.

CURRENT WATER-WHEEL.

No. 817,870.

Specification of Letters Patent.

Patented April 17, 1906.

Application filed August 21, 1903. Serial No. 170,294.

To all whom it may concern:

Be it known that I, WILLIAM J. PATTON, a citizen of the United States, residing at Springdale, in the county of Washington and State of Arkansas, have invented certain new and useful Improvements in Current Water-Wheels; and I do 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 the figures of reference marked thereon, which form a part of this specification.

My invention is what is commonly denominated a "current water-wheel," and is intended to be placed in the current of any flowing stream to be operated by the current, and transfers power to any point beyond the stream.

The great power in flowing water in rivers, creeks, and other natural water-flows, is well known; but in my opinion no practicable device has heretofore been made to fully utilize this power. Expensive canals, races, chutes, dams, and tubes have been built in order to guide and protect the water used for power from the flood rises and fall of the water; but all of these in my opinion have more or less been failures.

It is the object of my invention to meet these difficulties and by means of a wheel of simple, yet practicable and effective, construction, deliver the power latent in all flowing waters in a practicable manner for all purposes where power is wanted.

Owing to the peculiar construction of the valves or paddles of my wheel, my wheel will run as well under water entirely submerged as it will when only partly submerged. It is not influenced by the rise or fall of the water. It may be constructed of any diameter or of any length large enough for two-thirds of its diameter to be above high water or small enough to be laid near the bottom of a river or stream, so that steamboats or other craft can pass over it without interference with either the wheel or the craft. The wheel may be of any desired length, from a foot to the entire width of the stream, and where the bottom of the stream is so irregular that one continuous shaft may not be used several wheels may be used and the shafts connected by any usual joint mechanism.

The valves or paddles work automatically, folding up and opening out of their own

weight, being nicely adjusted on the frame-hinge for that purpose, opening out or expanding on the upstream side of the wheel just in time to catch the full force of the water-stream and intercept its force and pressure, and then automatically folding up on the downstream side of the wheel, offering no resistance to the water, but only the thin edges of the folded valves or paddles until carried again by the rotation of the wheel up and forward until the horizontal water-plane is reached. Then the valves or paddles of their own weight fall and present their flat surfaces to receive the full flow and force of the water. This folding motion of the valves or paddles relieves the wheel of all lifting of the water as the paddles ascend from the under side of the rotary wheel motion. By placing the hinges of the valves or paddles perpendicular to the axle of the wheel an automatic motion is secured, by which the valves or paddles fold or expand as they reach the horizontal of the wheel-plane, presenting only a feather-edge of the paddles to the water as the downstream side of the wheel rises up. It is by this newly-discovered motion of hinge-valves or paddles in the water that causes my wheel to rotate in any position, vertically considered, in moving water, whether one-fourth, one-third, or three-fourths or entirely submerged or placed any depth below the surface of the water. The valves consist of two or three pieces—when of two pieces the paddle and the rod on which it is hinged and when of three pieces, of the wings or paddles and the rod on which they are hinged.

The wheel may be used for the production of power for any mechanical force, and may be built of any length or diameter, and may be used in any flowing water.

In the accompanying drawings, Figure 1 is a perspective view of my invention. Fig. 2 is an end view of the wheel, the valves on the rear or downstream side of the wheel being closed or folded up and on the upstream side open, forming a perfect continuing valve resisting the water-flow.

My invention is described as follows: 1 represents a rectangular frame. 2 represents a shaft horizontally journaled in said frame by means of axles 3. Extending radially from said shaft are arms 4, and secured to the outer ends of these arms are longitudinal beams 5. These arms and beams are equal distances apart and extend all around the said shaft, making a complete water-wheel.

Secured at intervals and extending from said shaft to said longitudinal beams are hinge-rods 6, and hinged to said hinge-rods, by means of tongues 8², are valves 8. The said
 5 tongues 8² are integral with and extend at intervals from one edge of said valves. They extend the full length of the valves and are alternately coiled around said hinge-rods. These valves are so hinged that their free
 10 edges rest against the end arms 4 and the intermediate beams 7, so that when the wheel turns over upstream these valves open and fall against said shaft, these end arms, and intermediate beams, and present a solid and
 15 continuous surface to the current, and thus the whole force of the stream is against them, and as the valves open and fall back as they advance rearwardly and upwardly the upper part of the wheel presents no flat surface, but
 20 only a feather-edge to the current, and thus the wheel, by means of the flat lower surface resisting the current, is forced to revolve, and as the valves fall back there is nothing in their position to resist the water, and hence
 25 the wheel rotates easily.

I claim—

1. A current water-wheel comprising a rectangular supporting-frame, a shaft journaled horizontally in said frame, a series of arms
 30 extending radially from said shaft and connected at their outer ends by beams, a series of hinge-rods extending from the shaft to the beams and connected thereto, a series of flat valves hinged to said hinge-rods, two valves
 35 being hinged to each rod to open out away

from each other when acted upon by the current, the outer edges of said valves being braced by said arms to form a substantially unbroken surface while under the action of the current, and to fold together by gravity
 40 in rising after passing out of the influence of the current, the inner edges of the valves being bent around the hinge-rods to form bearings, substantially as shown and described and for the purposes set forth.

2. A current water-wheel comprising a shaft journaled horizontally, a series of arms secured to and extending outward from said shaft, and connected at their outer ends to longitudinal beams, a series of hinge-rods ex-
 50 tending from said shaft to the beams and connected thereto, a series of flat valves hinged to said hinge-rods, two valves being hinged to each rod, and adapted to open out away from each other when acted upon by the current,
 55 the outer edges of said valves being braced by said arms and limited in action by said arms to form a substantially unbroken surface while under the action of the current, and to fold together by gravity in rising after passing out of
 60 the influence of said current, substantially as shown and described and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM J. PATTON.

Witnesses:

W. H. MORTON,
 M. D. BRYSON.