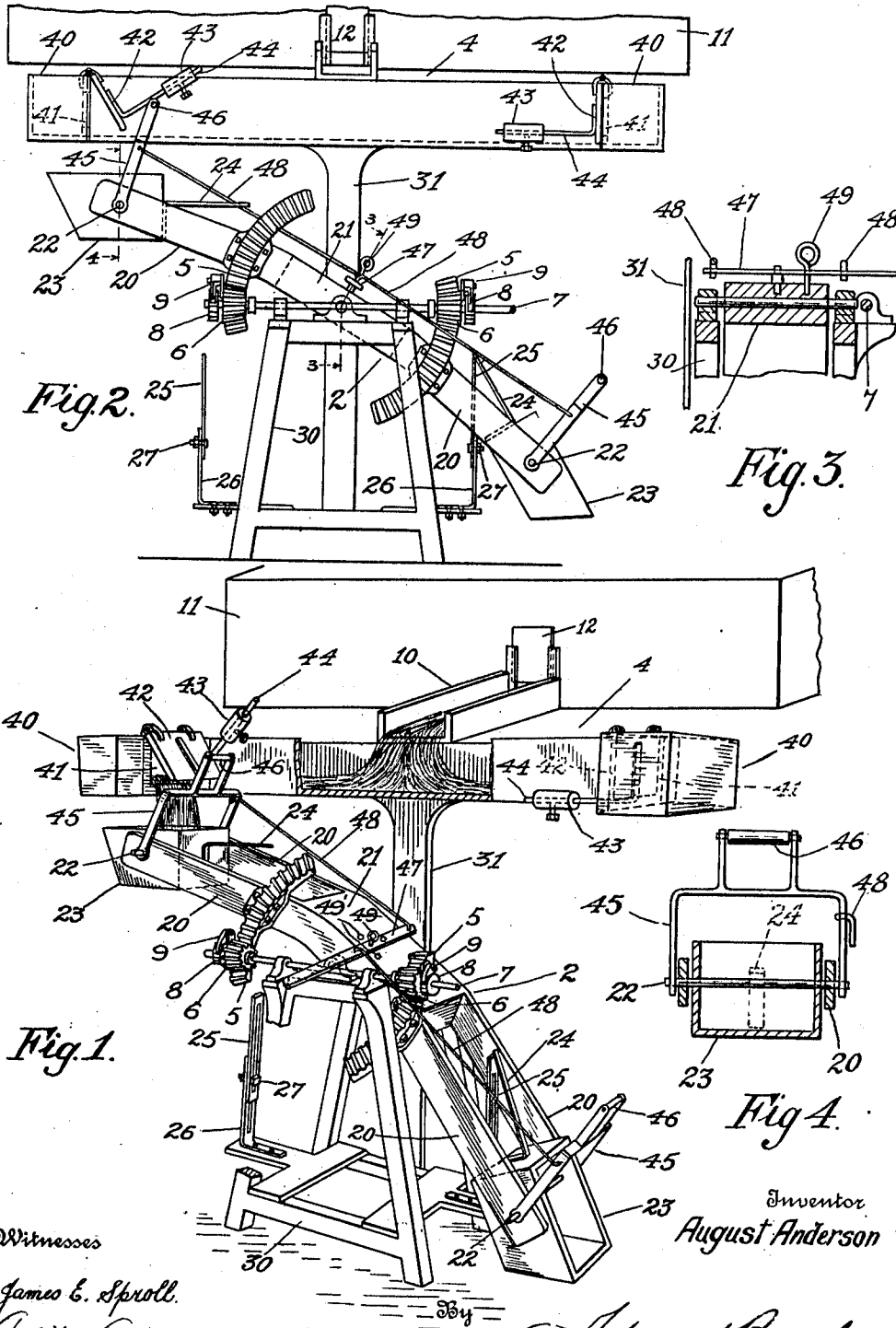


A. ANDERSON.
OSCILLATING WATER MOTOR.
APPLICATION FILED JUNE 15, 1910.

988,426.

Patented Apr. 4, 1911.



Witnesses

James E. Spruell.
Arleta Adams

Inventor
August Anderson

Adams & Brooks
Attorneys

UNITED STATES PATENT OFFICE.

AUGUST ANDERSON, OF PONDERAY, IDAHO.

OSCILLATING WATER-MOTOR.

988,426.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, AUGUST ANDERSON, a citizen of the United States of America, and a resident of the town of Ponderay, in the county of Bonner and State of Idaho, have invented certain new and useful Improvements in Oscillating Water-Motors, of which the following is a specification.

The present invention pertains to an improved water motor of the oscillating type, and it consists in the novel features and combinations of parts as set forth in the following description and defined in my annexed claims.

In the accompanying drawing, wherein similar reference numerals designate corresponding parts throughout: Figure 1 is a perspective of my improved motor in such form as now preferred by me, the same being shown in operation and connected with a reservoir. Fig. 2 is a side elevation of the same with the oscillating member tilted as in starting the motor. Fig. 3 is a fragmentary section on line 3—3 of Fig. 2, and Fig. 4 is a section on line 4 of Fig. 2.

The oscillating member 2, as shown comprises a center part 21 which is pivotally mounted on a suitable frame, as 30, and provided with inclined end extensions or arms 20, 20 at opposite sides of its axis.

23, 23 represents the water or motor buckets which are pivoted to the outer end portions of the arms 20 by cross rods 22, 22 and provided with stem extensions 24, 24. Beneath the stems 24 are vertically adjustable abutments 25, 25 conveniently in the form of slotted bars which are secured by suitable clamp bolts 27 to respective standards 26 provided on frame 30.

4 designates a delivery head supported on a vertical extension 31 of frame 30 and formed with opposite, angular end portions 40, 40 having lateral discharge openings 41, 41 above the paths of the buckets 23, 23. These openings 41 are provided with gates 42, 42 which are hinged to head 4 for upward movement and provided with angular stems 44, 44 carrying weights 43, 43.

Combined with member 2 are gate opening devices 45, 45 comprising angular arch members pivotally supported on the cross rods 22, 22 and provided with upwardly extending arms on which are journaled bearing rollers 46, 46 for the gate stems 44, 44.

Pivoted to center part 21 of the oscillating member is a lever 47 which is connected

with the devices 45, 45 by links 48, 48 and provided with an aperture for a locking pin 49. Seats as 49' are provided in the center part 21 at spaced apart points to receive pin 49 so that lever 47 may be secured in different angular positions as will be later understood.

Secured to member 2 are bevel gear segments 5, 5 meshing with respective loose pinions 6 mounted on a shaft 7 which is journaled on frame 30. These pinions have releasable connection with respective fixed ratchet wheels 8 on shaft 7 through the medium of spring pressed pawls 9 which are mounted on the pinions to engage the ratchet wheels in a common direction, whereby continuous rotary movement is imparted to shaft 7 during reciprocation of member 2.

10 designates a flume leading to head 4 from a reservoir, as 11, whose outlet is provided with a gate 12 for regulating the volume of discharge in accordance with the demand of the motor.

To start the motor member 2 is tilted manually to apply one of the bearings 46 to open a gate 42, as shown in Fig. 2, for passage of water from head 4 to load the elevated bucket 23. The weight thus applied swings member 2 in a reverse direction and thereby effects a similar operation of the opposite gate 42 to load the elevated bucket as the stem 24 of the descending bucket engages its abutment 25. If desired to increase the length of the stroke the bolts 27 are loosened and the abutments 25 lowered and resecured by tightening the bolts. Lever 47 is then released, by removing pin 49, and shifted to swing the members 45 inwardly and thereby lower the bearings 46 with respect to member 2.

Having thus described my invention what I claim as new, and desire to secure by Letters Patent of the United States of America, is:

1. A motor comprising fluid delivery means having spaced discharge openings, gates for the discharge openings of said fluid delivery means, motor buckets each arranged to receive fluid from a respective discharge opening of said fluid delivery means, means connecting said motor buckets for simultaneous movement in relatively opposite directions, and devices supported on said last means each for opening a respective gate and being arranged to operate alternately, said devices being adjustable lengthwise of

the path of said buckets, for the purpose specified.

2. A motor comprising fluid delivery means having spaced discharge openings, gates for the discharge openings of said fluid delivery means, motor buckets each arranged to receive fluid from a respective discharge opening of said fluid delivery means, means connecting said motor buckets for simultaneous movement in relatively opposite directions, devices supported on said last means each for opening a respective gate, said devices being arranged to operate alternately, and means for simultaneously adjusting said devices lengthwise of the paths of said buckets.

3. A motor comprising an oscillating member, motor buckets pivoted on said member on opposite sides of its axis, means for swinging said buckets by and during movement of said member, a fluid delivery means provided with spaced discharge openings arranged to discharge each into a respective bucket, valves for the discharge openings of said fluid delivery means, means for opening said valves alternately comprising cooperating parts carried by said valves and said member respectively, the latter of said parts being moved into and out of engagement with the former during movement of said oscillating member and pivotally supported on the end portions of said member for adjustment toward and from the said former of said cooperating parts, means normally holding said devices from movement independently of said oscillating member, and

means for returning said valves to their closed positions when released by said valve opening means.

4. A motor comprising an oscillating member, motor buckets pivoted on said member on opposite sides of its axis, means for swinging said buckets by and during movement of said member, a fluid delivery means provided with spaced discharge openings arranged to discharge each into a respective bucket, valves for the discharge openings of said fluid delivery means, means for opening said valves alternately comprising cooperating parts carried by said valves and said member respectively, the latter of said parts being moved into and out of engagement with the former during movement of said oscillating member and pivotally supported on the end portions of said member for adjustment toward and from the said former of said cooperating parts, a lever pivotally supported on said oscillatory member, links connected with said adjustable parts of said means for opening the said valves and with said lever each on a respective side of its fulcrum, means for securing said lever in different positions of adjustment, and means for returning said valves to their closed positions when released from said opening means.

Signed at Ponderay, Idaho, this 6th day of June, 1910.

AUGUST ANDERSON.

Witnesses:

S. H. DAVIS,
GEORGE W. ADE.