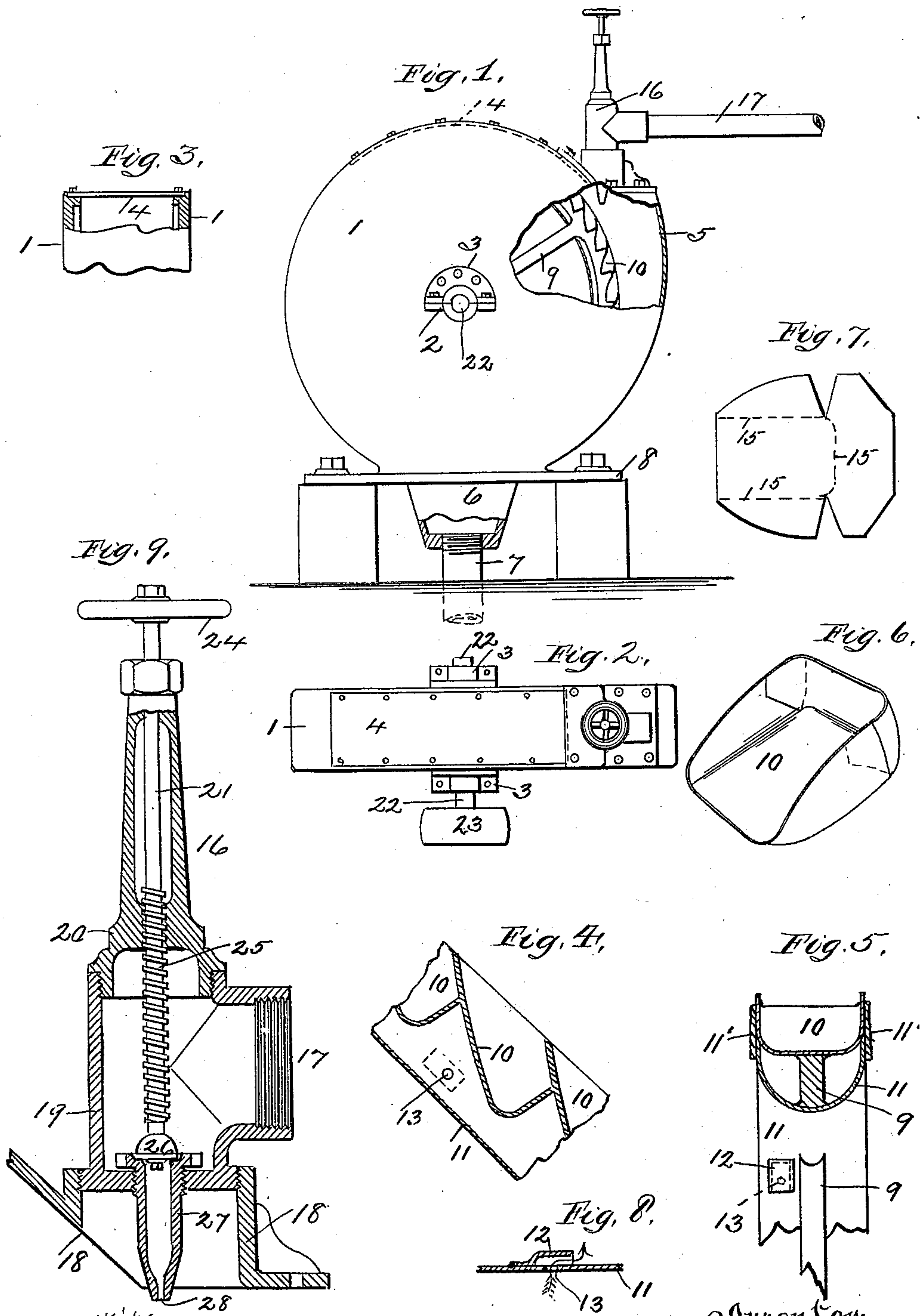


(No Model.)

G. W. MASON.
WATER MOTOR.

No. 552,296.

Patented Dec. 31, 1895.



Witnesses:

H. E. Harrison.
A. R. Johnson

George W. Mason
Inventor.

UNITED STATES PATENT OFFICE.

GEORGE W. MASON, OF SHARON, PENNSYLVANIA.

WATER-MOTOR.

SPECIFICATION forming part of Letters Patent No. 552,296, dated December 31, 1895.

Application filed December 22, 1893. Serial No. 494,444. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. MASON, a citizen of the United States, residing at Sharon, in the county of Mercer and State of Pennsylvania, have invented certain new and useful Improvements in Water-Motors; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improved water-motor; and it consists in certain details of construction and combination of parts as will be fully described hereinafter.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of my improved water-motor, which is constructed and arranged in accordance with my invention. Fig. 2 is a plan view of the same. Fig. 3 is a cross-section of the top portion of the shell or casing of the motor, showing the removable lid or cover used when arranging the interior parts in position. Fig. 4 is an enlarged side sectional elevation of a portion of the water-wheel, showing the arrangement of the buckets. Fig. 5 is a cross-sectional elevation of the same. Fig. 6 is a perspective view of one of the buckets before attaching the same to the wheel. Fig. 7 is a plan view of the blank from which said bucket is formed. Fig. 8 is a sectional view of a portion of the inner rim or felly, showing the means for permitting the water to escape should the same leak into the space between the buckets and said felly. Fig. 9 is a side sectional elevation of the water-inlet valve and jet.

To construct a water-motor in accordance with my invention I provide an annular shell or casing 1 of a suitable size and form of construction and provide the same with an opening in the top periphery fitted with a removable cover 4, a central journal-bearing 2 at either side, and caps 3 for the same. Operating within this casing 1 is a wheel 9, having a series of recesses formed at regular intervals about its periphery for the reception of the buckets 10. These buckets 10 are constructed of thin sheet metal cut and formed in the manner shown at Fig. 7 on the draw-

ings and bent about the dotted line 15 in the form shown at Fig. 6. If desired these buckets may be stamped or flanged into shape by means of suitable dies constructed for that purpose, or formed in the manner above described and the joints soldered together. These buckets are arranged in the recesses formed in the periphery of the water-wheel 9 and securely soldered in that position, the forward end of the one overlapping the rear end of the adjoining bucket to form a pocket, as shown at Figs. 4 and 5 on the drawings. Attached beneath the buckets and to the under side of the rim of the wheel 9 is a semicircular felly 11, which gives strength to retain the buckets in position, and to further strengthen this construction two rings 11' are firmly soldered about the buckets and all joints and connections made water-tight, strong, and durable. This construction and arrangement of the buckets is preferred on account of its lightness and strength. This water-wheel 9 is mounted on a shaft 22, mounted in the bearings 2 and 3 before described, and the said shaft fitted with a pulley 23 to transfer the rotary movement of the wheel or motor to other devices.

Formed at one side of the casing 1 is an enlargement 5, fitted on the top with a removable cap or cover 18, provided with a threaded connection for the reception of the water-valve and jet 16. This valve and jet consists of a T connection 19, having a closed base in which the jet-tube 27 is screwed, a water-inlet connection 17, a valve 26 to close the orifice of the jet 27, an integral threaded stem 21 passing through a guide 20, and a valve-wheel 24 for operating the said valve 26. The jet consists of a casting having an opening through the center, which narrows to a small orifice 28 at the bottom, a threaded portion to attach the same to the closed base of the T connection 19, and a valve-seat formed about the top of the central opening.

Formed at the base of the casing 1 is an outlet-box 6, in which is screwed the drain-pipe 7, and the casing is formed with a flange 8, by means of which the apparatus may be rigidly attached in position by suitable bolts. Arranged at several suitable points about the felly 11 are small openings 13, partly covered by plates 12, (see Fig. 8,) having an open end

opposite to the direction of the rotary movement of the wheel 9, which when the said wheel is in rapid motion will act as a siphon aided by the centrifugal force to expel the water within the said casing should any collect there from leaking through the joints.

In operation the water enters the jet 27, which is arranged directly above the buckets, and is discharged with great force into the same, thereby revolving the wheel, and is discharged through the drain-pipe 7.

By this construction of the water-wheel and its attached buckets the same is made very light, durable, and strong, and the construction of the water-valve is such that the connecting-pipe 17 may be arranged at any angle to suit the water-supply pipe without interfering with the position of the jet 27.

The jet 27 may be removed by simply unscrewing the same and another larger or smaller nozzle 28 substituted to increase or diminish the flow of water from the same.

Having thus described my invention, I claim—

1. The herein described water wheel consisting of the notched wheel 9, the buckets constructed of thin sheet metal attached to said wheel, the front of the one overlapping the other, the felly 11, attached to the rim of the wheel and to the sides of the buckets, the rings 11' attached to the felly as sides of the buckets and the covered exit openings, con-

structed and arranged as described, as set forth.

2. The herein described water motor consisting of a suitable casing, a wheel having peripheral recesses, mounted to rotate therein, buckets arranged in the recesses, the front of one bucket overlapping the other, the felly attached to the rim of the wheel and to the sides of the buckets, and the rings attached to the felly, as and for the purpose described.

3. A wheel having a hollow felly provided with exit openings, flanged plates secured over the openings, and having open ends opposite to the direction of the movement of the wheel as and for the purpose described.

4. The herein described water wheel consisting of the notched wheel 9, the buckets attached to the wheel, the front of one overlapping the other, a felly attached to the rim of the wheel and to the sides of the buckets, said felly having exit openings, plates secured over the openings and having open ends as and for the purpose described.

In testimony that I claim the foregoing I hereunto affix my signature this 22d day of November, A. D. 1893.

GEORGE W. MASON. [L. S.]

In presence of—

SAMUEL H. BURNSIDE,
JOHN C. HUNT.