(No Model.)

J. BOLGIANO.

WATER MOTOR.

No. 496,182. Patented Apr. 25, 1893.

Fig. 1.

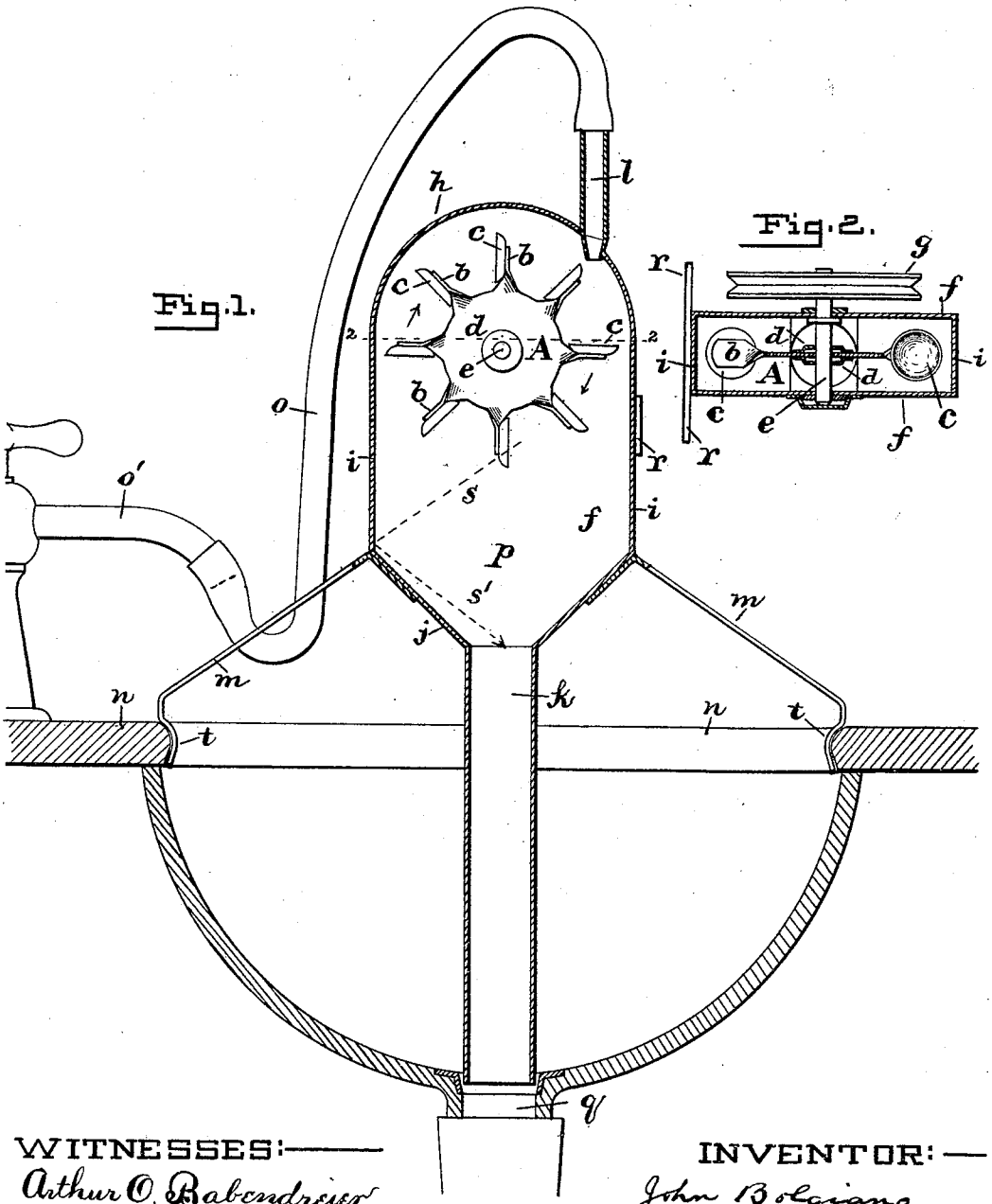

Fig. 2.

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UNITED STATES PATENT OFFICE.

JOHN BOLGIANO, OF BALTIMORE, MARYLAND.

WATER-MOTOR.

SPECIFICATION forming part of Letters Patent No. 496,182, dated April 25, 1893.

Application filed December 31, 1892. Serial No. 456,875. (No model.)

To all whom it may concern:

Be it known that I, JOHN BOLGIANO, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Water-Motors, of which the following is a specification.

My invention relates to a portable water motor for running any kind of light machines, such as sewing-machines, fans and the like.

The object is to provide a simple and cheap motor of the vertical wheel type.

In the accompanying drawings Figure 1 is a vertical section of my improvements in water motors, and showing the same in position in a stationary wash-basin, and connected with the basin cock. Fig. 2 is a cross section of the wheel and its case on line 2—2.

The wheel consists of a thin central disk, A, of sheet-metal having peripheral tangs, *b*, each of which has a quarter turn or twist so as to bring the broad face of the tang in a plane at right-angles with the surface of the disk; a circular cup, *c*, is seated on the broad face of each tang and secured by solder, or in any suitable way. At its center the disk is re-enforced on each side by a small convex disk, *d*. This completes the wheel. A shaft, *e*, passes through the wheel and has bearings in the two broad sides of the case, *f*. A pulley, *g*, is mounted on the projecting end of the shaft. The case has a rounded top, *h*, and straight vertical sides, *f*, *i*, which extend down far enough to form a spacious chamber, *p*, below the wheel. At the lower end each of the two narrow sides converges toward the other and forms a funnel, *j*, to which the waste or discharge-pipe, *k*, is attached. In the top of the case is an inlet nozzle, *l*, which points directly downward and is much smaller than the discharge pipe, and at each narrow side a spring arm, *m*, is attached and the free ends of these arms have an ogee curve or bend, *t*, to engage with the inner rim of the slab, *n*, on top of the wash-basin and thus support the case upright. A piece of hose, *o*, connects the inlet, *l*, with the cock, *o'*.

The lower end of the discharge pipe, *k*, enters the waste-pipe, *q*, of the wash-basin; thus the spring arms, *m*, and this pipe serve to support the motor upright and hold it steady in the basin.

An ear, *r*, is attached at each side of the case.

In operation the current of water from the inlet nozzle, *l*, passes down and strikes the cups, *c*, and causes the wheel to revolve. Both the blow on the cups caused by the water-pressure, and the weight of the water on the cups are utilized to their fullest extent. As the central part of the wheel is a thin vertical disk, A, the water is not held or retained on the wheel, but quickly frees itself therefrom and the wheel revolves with great rapidity; the water takes a downward tangent, indicated by the broken lines, *s*, and strikes the narrow side, *i*, of the case, and is then deflected therefrom at an angle, indicated by the broken line, *s'*, directly into the discharge pipe, *k*. The thin vertical disk of the wheel; the vertical inlet nozzle entering the top of the case, the spacious chamber in the case below the wheel, and the vertical narrow sides, *i*, converging to the discharge-pipe,—all combine to produce the desired result, to wit: high speed of revolution of the wheel and prompt clearance of the water and consequent avoidance of back-lash.

Having described my invention, I claim—

The herein described water-motor comprising the vertical case having straight narrow sides, *i*, converging at the bottom to a discharge pipe; a vertical wheel in the case having a thin center-disk provided with peripheral tangs, *b*, with a quarter turn or twist and cups on the tangs; a vertical inlet-nozzle entering the case top; and a spacious chamber, *p*, in the case below the wheel; as shown and described.

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

JOHN BOLGIANO.

Witnesses:
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