ger signal which switches the monostable multivibrator **23** into its active mode to thereby produce an output for 40 ms. This output is then amplified and applied to the rotary stepping motor **1** which causes the bucket wheel **2** to advance its position whereby 0.1 ml of water is removed from the bottom of the water column in main bore **18.** Simultaneously, the next succeeding bucket is moved to the filling position. Before a bucket reaches the filling position, it is emptied completely into the trough **6** by the outward movement of the piston during one revolution of the wheel as described hereinabove. By employing a 40 ms output signal from the multivibrator, the probe circuit is disabled to prevent false triggering of the gauge while the bucket wheel is advancing. Each 0.1 ml of water removed from the bottom of the water column represents a 0.005 mm increment of rainfall; thus, the output of the multivibrator can be recorded as a hack-mark on a strip chart recorder **25** indicating an increment of rainfall, and by determining the number of increments during a period of time, the rainfall rate is calculated.

From the above description, it will be readily apparent to those skilled in the art that the gauge of the present invention has advantages over conventional tipping-bucket type rain gauges in that its accuracy is determined by physical dimensions, while at the same time, its operation is independent of temperature effects and the impurity content of the collected rain water. Furthermore, the sensitivity of the gauge allows the measurement of rainfall rates in the range of 0.3 mm/h to 33 mm/h which normally would not be detected.

It should be pointed out that while the figures disclose what is at present considered to be the preferred embodiments of the subject invention, this disclosure is made by way of illustration only and is not meant to be interpreted in a limiting sense, since when desirable other modifications and alterations may be resorted to by those skilled in the art without departing from the spirit and scope of the invention as set forth in the following claims. Accordingly,

What is claimed is:

1. A gauge for measuring low-to-moderate rainfall rates comprising, rain water collection means, rotary bucket wheel means having a plurality of peripherally spaced buckets positioned beneath and communicating with said rain water collection means, motor means connected to the bucket wheel means for rotating said bucket wheel means, and electrical means connected between said rain water collection means and said motor means and responsive to the level of the collected rain water, whereby when a predetermined level of water is attained in the collection means the motor means is energized to rotate said bucket wheel means to thereby remove an increment of water from the rain water collection means.

2. A gauge according to claim **1,** wherein the rain water collection means comprises, a water-channeling block, a main bore formed in said block for receiving the collected rain water to thereby provide a water column communicating with the rotary bucket wheel means, and a recess formed in said block communicating with said main bore, said recess adapted to receive a water-level sensing component of said electrical means.

3. A gauge according to claim **2,** wherein said rotary bucket wheel means comprises, an annular ring, a plurality of radially extending cylinders provided in said ring, and piston means slidably mounted in each cylinder to facilitate the removal of the collected water from the cylinder during the rotary movement of the wheel means.

4. A gauge according to claim **3,** wherein said piston means comprises, a piston, a piston rod connected to said piston and extending radially inwardly through the inner peripheral edge of said ring, spring means connected between the piston rod and the inner peripheral edge of said ring for biasing the piston toward the bottom of said cylinder, and cam means positioned at the center of said ring, the inner end of the piston rod being spring-biased against said cam.

5. A gauge according to claim **4,** wherein said cam means comprises, a fixed disc cam, the inner end of each piston rod being spring-biased against the peripheral edge of said cam, the development of said cam being such that during each 360° rotation of said wheel each piston is progressively urged radially outwardly from the bottom of its respective cylinder to the top of said cylinder and then returned to the bottom of the cylinder.

6. A gauge according to claim **1,** wherein said motor means comprises, a rotary stepping motor, whereby upon energization of said motor each bucket of said wheel means is sequentially positioned beneath said rain water collection means.

7. A gauge according to claim **1,** wherein the electrical means for energizing the motor means comprises, a probe positioned in said water collection means and adapted to detect a predetermined level of collected water, an electrical circuit connected between said probe and said motor means, a probe amplifier and trigger, a monostable multivibrator and a power amplifier connected in the circuit between the probe and the motor means, whereby when the water reaches a predetermined level in the water collection means a current flow is established between the probe elements which is detected by the probe amplifier and trigger thereby generating a trigger signal to switch the monostable multivibrator to its active mode, the output of which being amplified and applied to the motor means.

8. A gauge according to claim **7,** wherein the output of said monostable multivibrator is produced for 40 ms to thereby disable said probe, whereby false triggering of the gauge is prevented during the rotary movement of the bucket wheel means.

9. A gauge according to claim **7,** wherein a strip chart recorder is connected to said multivibrator, whereby the output of the multivibrator is recorded as increments of rainfall.

10. A gauge according to claim **3,** wherein the water-channeling block is formed with an arcuate surface conforming to the radius of curvature of said ring means, said arcuate surface and the outer peripheral surface of said ring being contiguous.

11. A gauge according to claim **10,** wherein each cylinder sequentially removes 0.1 ml of water from the bottom of the water column during rotation of said wheel means, each 0.1 ml of water representing a 0.005 mm increment of rainfall, whereby rainfall rates in the range of 0.3 mm/h to 33 mm/h may be measured.

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