

ABSTRACT

HYDROELECTRIC SYSTEM

5 A hydroelectric system 10 converts kinetic energy from
water flowing off a roof 12 of a building 14 into
electrical energy 18. The system 10 comprises a turbine
16 having a rotor 18 and a generator 19 disposed in a down
pipe 20. The down pipe 20 has an upper end 22 that
10 receives water running off the roof 14 via gutters 28.
The down pipe 20 comprises channels 24a and 24b that
extend from the upper end 22 to respective outlets 26a and
26b. Each of the outlets 26a and 26b direct water onto
the rotor 18 causing rotation in the same direction. The
15 channels 24a and 24b are configured in a manner so that
water entering the down pipe 20 initially flows through
the channel 24a and out from the outlet 26a. However in a
heavy downpour the channel 24a may overflow into the
channel 24b to subsequently flow out the outlet 24b
20 providing further drive to the rotor 18. A regulating
reservoir 32 is provided at the upper end 22 of the down
pipe 20 to provide a controlled steady flow of water
through the channel 24a. The reservoir 32 has an upright
wall 38 provided with a lower outlet 34 and an upper
25 outlet 40. When water collects in the reservoir 32 at a
level below the outlet 40 it flows into the channel 24a
via the first outlet 34. If rain water volume within the
reservoir 32 increases sufficiently water will eventually
flow through the second outlet 40 into the channel 24a
30 providing additional pressure to drive the turbine 16.
Should the water level in the reservoir 32 increase at a
sufficiently greater rate than it flows out from the
outlets 34 and 40 it may then overflow the wall 38 to flow
down the second channel 24b.

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Figure 1