The Effect of Different Water Volumes in the Tank of Passive Water Heaters

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Current passive water heaters are considered effective, but not perfect. Progress can always be continued, by varying small details. Improvements differ in cost, but the ones that surely will be implemented in society are the inexpensive ones. By adding cheap improvements, its use could popularize and expand, making bills less expensive. The idea of improving a solar water heater in a conventional way came up to mind when one day, during classes, a tube from the solar water heater broke. Every time, before taking a shower at night, someone climbed to the roof and opened the valve in order to have hot water. After a while this became tiring, and a research idea for the school's Science Fair project materialized. The experiment was supposed to prove whether or not a smaller water tank would be more effective than a larger one. Research was conducted in order to create a basis for the water heaters. Following the results, a passive solar water heater was created. The procedure, which consisted in measuring the temperature of small, medium, and large water tank sizes, every ten minutes for an hour was done in a sunny day. The hypothesis stated that the tank with smallest volume of water was to be the most efficient. Following experimentation, the medium sized water tank yielded the highest temperature in the trial. Regarding future testing, improvements could include using a more controlled environment, adding insulators to fasten the heating process, and varying the diameter of the copper tubes.

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