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(57) Abstract :
The present invention discloses an improved, forced draft cook stove, in which the thermal efficiency is in range of 36-38%. This has been achieved by use of a central aerator in the form of a hollow cylinder placed in the center of the combustion chamber. The aerator has got small holes along its side walls through which air passes and enters at all levels of the biomass pellets, resulting in remarkable improvement of efficiency. In existing stoves, aeration is poor since the air comes from bottom into the combustion chamber, pellets block the passage of air, reducing combustion which leads to poor efficiency. While the lower pellets and those at top get good air supply, center pellets do not get enough air, leading to poor combustion. Use of aerator enables use of low power fans, thus reducing power requirements and enabling longer run time of stove on existing batteries.

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