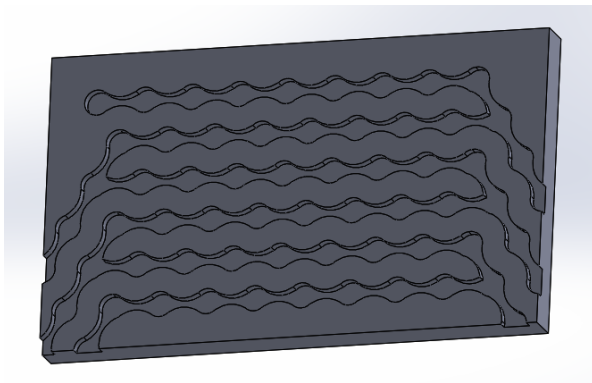


Mechanical Computer : The Chain Adder

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Physical Description : The Chain Adder is a mechanical adding calculator consisting of a board of grooves as shown in the figure below. The grooves are designed for specially sized chains to rest inside of.



(a) A Chain Adder Board with Grooves



(b) Chains that fit in the board grooves

Chain Placement Instructions :

1. Gather chains of lengths equal to the digits of the numbers your adding.
2. Take the ones place chains and place them left aligned in the first row of the board.
3. For the chains of the next place, go down a row and flip the placement alignment.

Readout Instructions :

1. To get digit 10^{n-1} of the calculated sum, count the chain nodes in row n .
2. If the chains overflow into the next row, keep counting until the end of the current chain.
3. Take the ones place of the number you got. that is digit 10^{n-1}
4. Do that for all of the rows to get all the digits of the calculated sum.