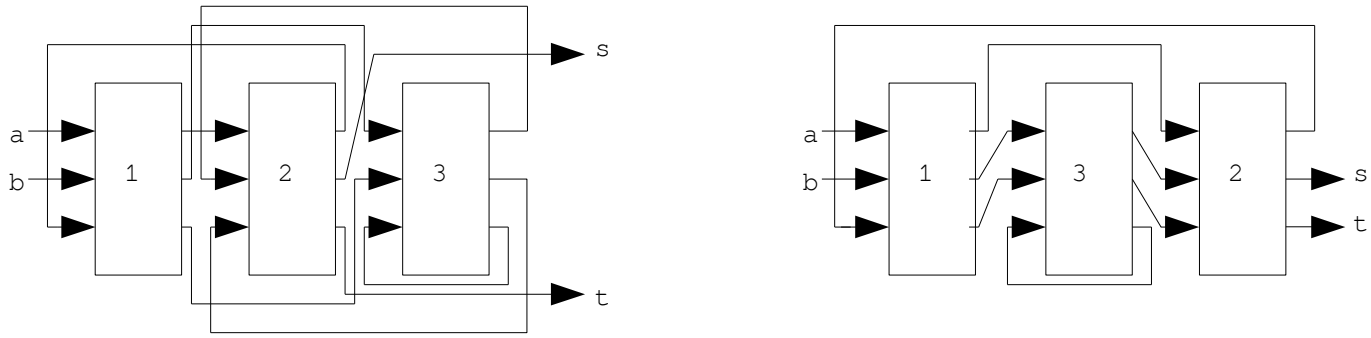


Fig. 1: The wiring of RLEM circuits is not formally specified, being instead left to implementation. Fig. 1A (left) and Fig. 1B (right) are equivalent wiring diagrams for the universal circuit of three 3-453 RLEMs.

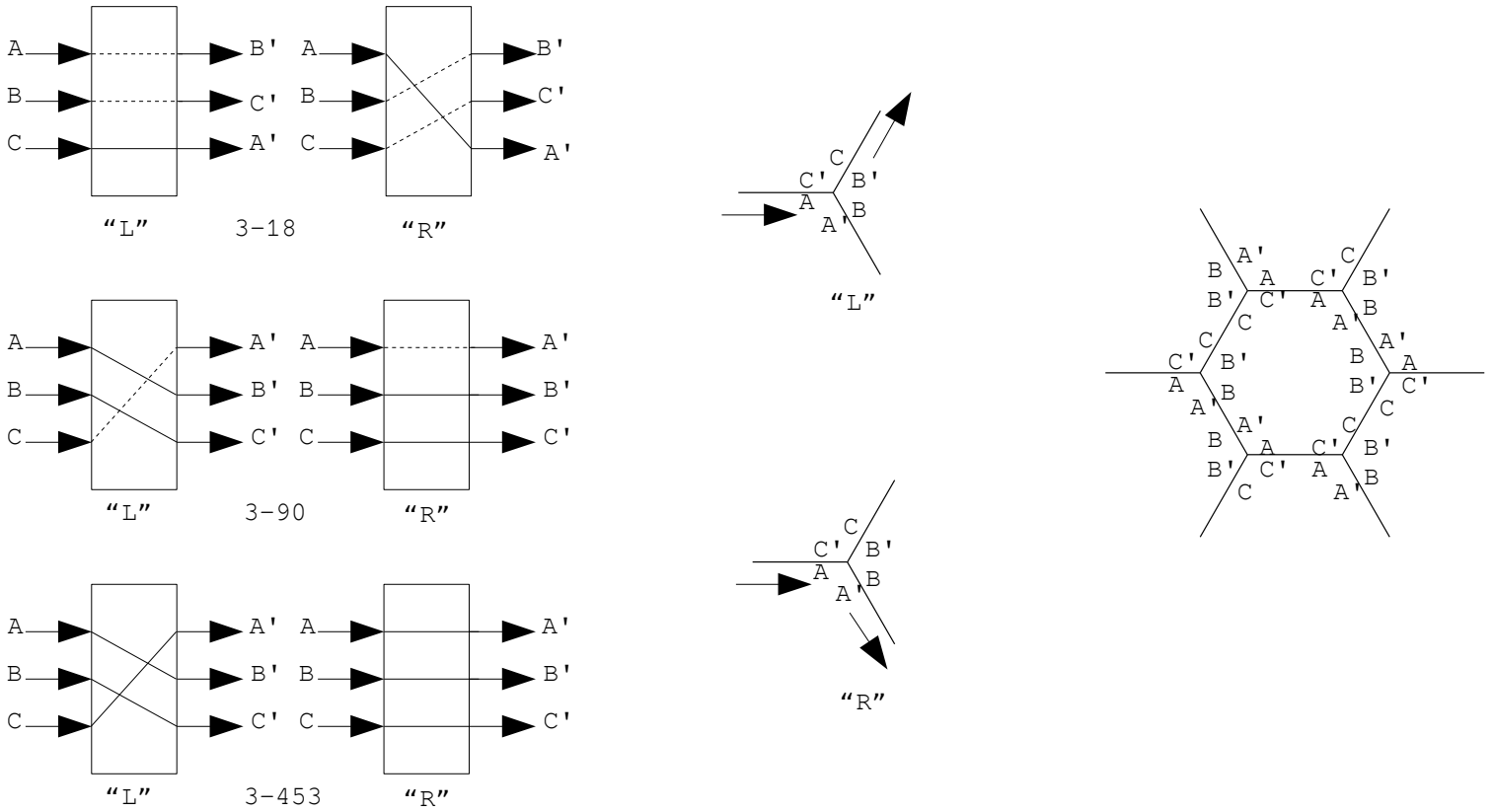


Fig. 2: RLEMs 3-18, 3-90, and 3-453 have a common triangular interpretation. In memory state “R”, signals entering terminals A, B, and C are emitted from terminals A', B', and C', respectively (a clock-wise or right-hand circulation). In memory state “L”, a left-hand, counter-clockwise circulation routes signals on A, B, and C to B', C', and A', respectively, corresponding to the behavior of the RLEMs' rectangular forms. At right, a lattice of connected triangular RLEMs.

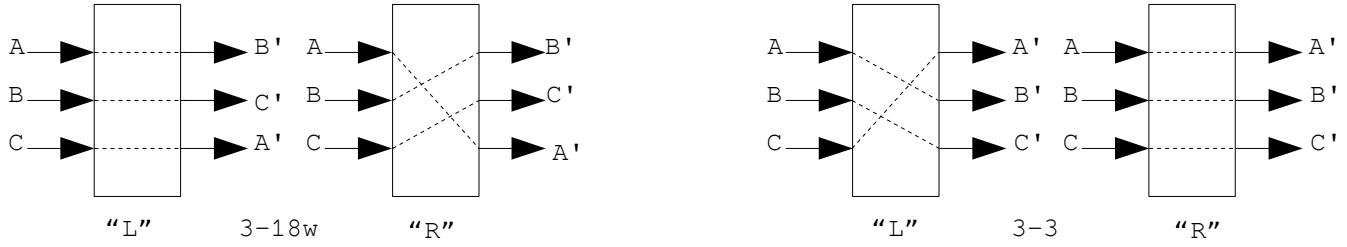
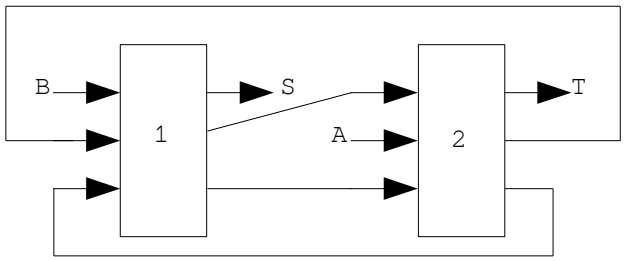
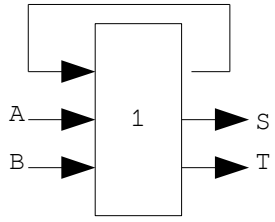


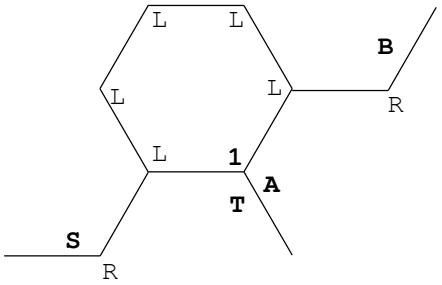
Fig. 3: RLEMs 3-18w (left) and 3-3 (right). Wire-equivalent RLEMs behave as if they were their active RLEM counterparts, fixed in a particular memory state. 3-18w is the wire-equivalent (non-transitioning) counterpart of 3-18.



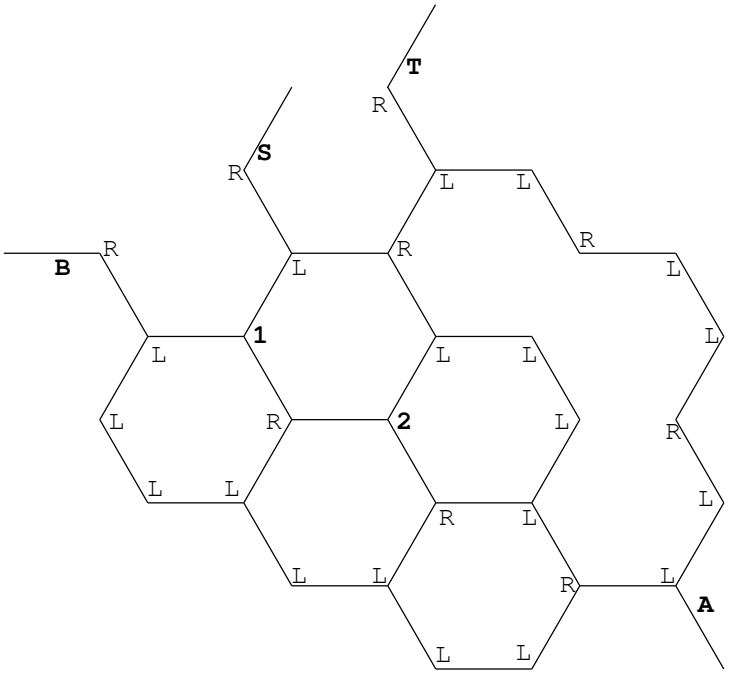
2-3 via 3-18



2-4 via 3-18

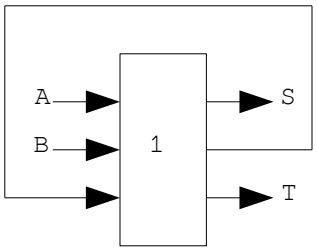


2-4 via triangular 3-18 and 3-18w

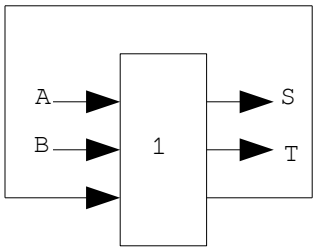


2-3 via triangular 3-18 and 3-18w

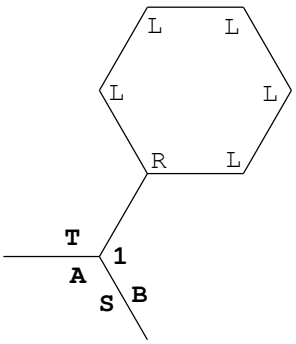
Fig. 4: Simulation of 2-3 and 2-4 equivalent circuits via RLEM 3-18, and equivalent GELCs composed of 3-18 and 3-18w cells. “L” and “R” label wire equivalent cells in left-hand and right-hand turn states. Only the skeleton of the rectangular RLEM circuits are shown, because the paths between elements are not dependent on internal state. Extraneous terminal labels and edges have been elided from the GELCs.



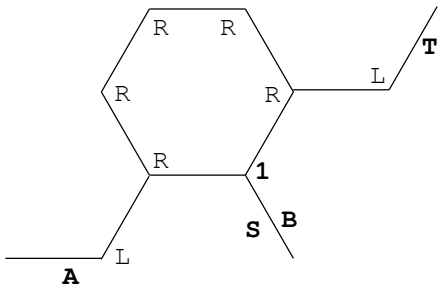
2-3 via 3-90



2-4 via 3-90

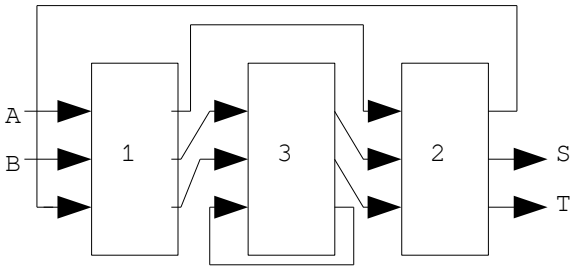


2-3 via triangular 3-90 and 3-3



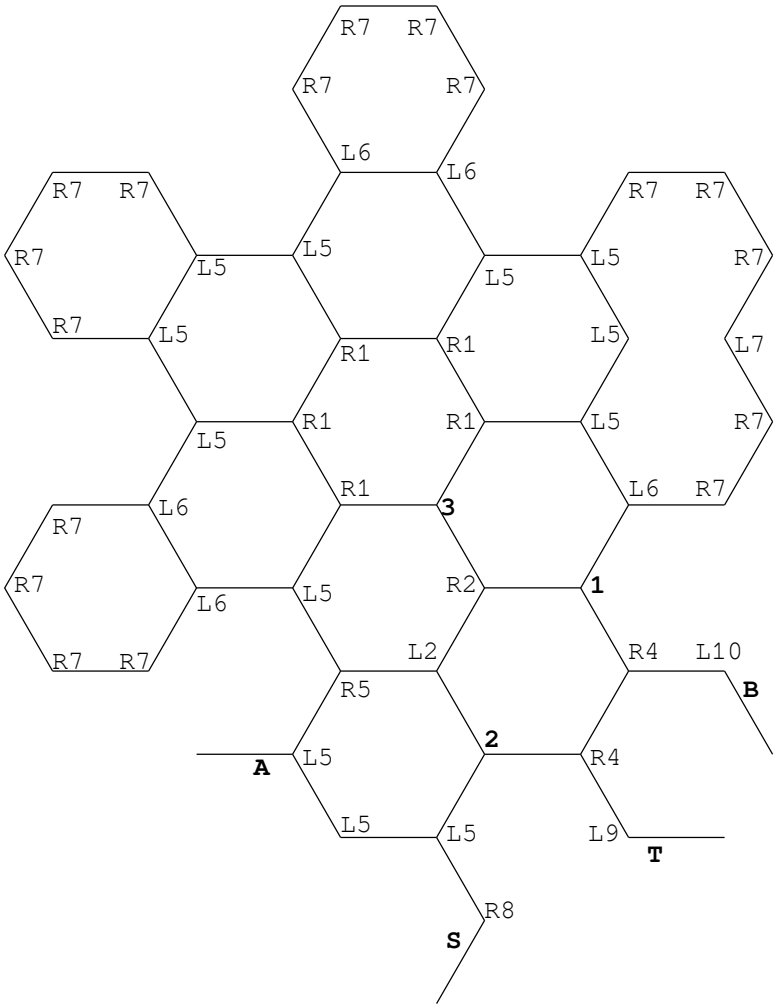
2-4 via triangular 3-90 and 3-3

Fig. 5: Simulation of 2-3 and 2-4 equivalent circuits via RLEM 3-90, and equivalent GELCs composed of 3-90 and 3-3 cells. “L” and “R” label wire equivalent cells in left-hand and right-hand turn states. Only the skeleton of the rectangular RLEM circuits are shown, because the paths between elements are not dependent on internal state. Extraneous terminal labels and edges have been elided from the GELCs.



2-3/4 via 3-453

Build Order:
1. C'(3) → C(3)
2. A'(3) → B(2)
3. C'(1) → B(3)
4. A'(1) → A(2)
5. B'(3) → C(2)
6. B'(1) → A(3)
7. A'(2) → C(1)
8. S →
9. T →
10. → A
11. → B



2-3/4 via triangular 3-453 and 3-3

Fig. 6: Simulation of 2-3 and 2-4 equivalent circuits via RLEM 3-453, and an equivalent GELC composed of 3-453 and 3-3 cells. “L” and “R” label wire equivalent cells in left-hand and right-hand turn states. Only the skeleton of the rectangular RLEM circuit is shown, because the paths between elements are not dependent on internal state. Extraneous terminal labels and edges have been elided from the GELC. “LX” and “RX” refer to at which step in the Build Order the cell was added to the GELC.