Multiple pinned orthogonal chains are flat-state connected

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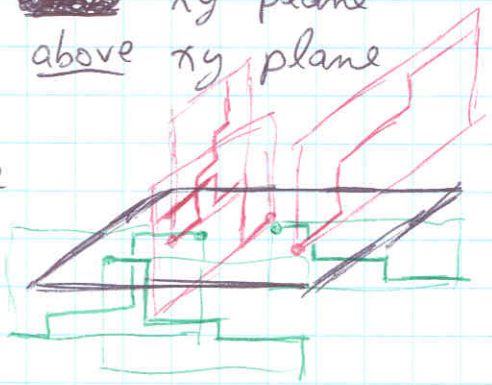
- k chains, each with initial link pinned in xy plane
- two kinds of chains:
  1. initial edge parallel to x axis (x-edge)
  2. initial edge parallel to y axis (y-edge)
- canonical form:
  - x-chains in xz planes below xy plane
  - y-chains in yz planes above xy plane
  - both staircases
- assume no two vertices have same x or y coord.
  ⇒ canonical form does not self-intersect



- canonicalization procedure processes x-chains & y-chains separately
- to lift two more links of y-chain into staircase:
  - invariant: next link is y-link & staircase extends
  - so pick up one link trivially
  - next swing other chains' planes down to almost-horizontal, away from chain under consideration
  - pivot around vertical edge to make next x-edge extend the staircase
  - lift (& repart around this x-coord.)
  - pivot around vertical edge to restore invariant