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- (54) **Title:** GLOBAL GRID BUILDING UNFAULTING SEQUENCE FOR COMPLEX FAULT-NETWORK TOPOLOGIES

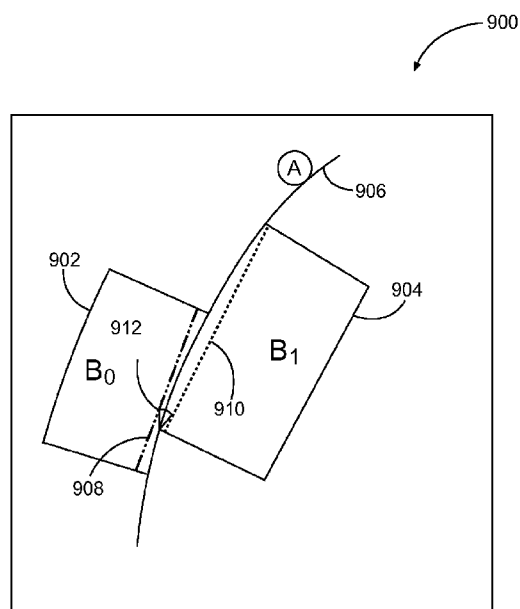


Fig. 9

(57) **Abstract:** In various examples, a method includes storing one or more data structures on a storage device, the one or more data structures identifying a plurality of faults in a geographical formation and a plurality of fault blocks on either side of the plurality of faults in the geographic formation; for each pair of faults blocks on opposite sides of a fault identified in the one or more data structures: determining, using at least one processor, a fault polygon of a respective pair of fault blocks with respect to a fault of the plurality of faults; and calculating a matching factor between the respective pair of fault blocks based on the fault polygon; selecting a pair of fault blocks to merge based on the calculated matching factor; and updating the one or more data structures to indicate the selected pair of fault blocks has been merged.



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