

(12) **United States Patent**
Stamatelakis et al.

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(54) **DISTRIBUTED PRECONFIGURATION OF SPARE CAPACITY IN CLOSED PATHS FOR NETWORK RESTORATION**

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(Continued)

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 916 days.

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Related U.S. Application Data

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(57) **ABSTRACT**

(51) **Int. Cl.**
G06F 11/00 (2006.01)

A method for restoring traffic in a network. The network includes plural distinct nodes interconnected by plural distinct spans, each span having working links and spare links. Each node has a digital cross-connect switch for making and breaking connections between adjacent spans forming span pairs at a node. Cross-connections between spare links in adjacent spans are made such that sets of successive nodes through which the adjacent spans form span paths form closed paths. A method of finding and construction closed paths is described in which statelets are broadcast through the network. In a preferred method of implementation of the method, the statelet broadcast occurs not in response to a network failure, but across the entire network before any particular span failure and may be carried out during normal network operations as a continual re-configuration of the network.

(52) **U.S. Cl.** 370/227; 370/408; 714/4

(58) **Field of Classification Search** 370/216-228; 714/4, 712, 717; 340/825.02, 825.04
See application file for complete search history.

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19 Claims, 12 Drawing Sheets

