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(54) Title: NANOPARTICLE PASTE FORMULATIONS AND METHODS FOR PRODUCTION AND USE THEREOF

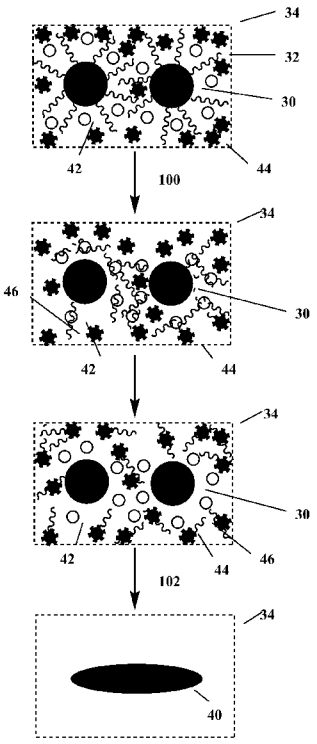

FIGURE 4

(57) Abstract: Nanoparticle paste formulations can be configured to maintain a fluid state, promote dispensation, and mitigate crack formation during nanoparticle fusion. Such nanoparticle paste formulations can contain an organic matrix and a plurality of metal nanoparticles dispersed in the organic matrix, where the plurality of metal nanoparticles constitute about 30% to about 90% of the nanoparticle paste formulation by weight. The nanoparticle paste formulations can maintain a fluid state and be dispensable through a micron-size aperture. The organic matrix can contain one or more organic solvents, such as the combination of one or more hydrocarbons, one or more alcohols, one or more amines, and one or more organic acids. Optionally, the nanoparticle paste formulations can contain about 0.01 to about 15 percent by weight micron-scale metal particles or other additives.

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