

13

5. The digital image processing method as set forth in claim 3 further comprising, prior to identifying a neighborhood as a potential security mark:

- determining the distances between potential mark constituents in said neighborhood; and
- identifying a neighborhood as a potential security mark only if the distances between potential mark constituents define a super-set of distances between actual mark constituents of an actual security mark in said printed document.

6. A document reproduction security method comprising:

- scanning a printed document to derive color digital image data representative of said printed document;
- processing said digital image data to identify all pixels thereof in a select color range used to define a security mark in said printed document;
- processing said digital image data to identify all connected components comprising only pixels of said digital image data in said select color range;
- processing said digital image data to identify as potential mark constituents all of said connected components having both a size and shape corresponding to a pre-defined size and shape of actual mark constituents defining said security mark in said printed document;

14

- processing said digital image data to establish a neighborhood of a select size about each potential mark constituent and determining if a number of potential mark constituents in the neighborhood is greater than or equal to a minimum and less than or equal to a maximum number of actual mark constituents;
- only for neighborhoods having greater than or equal to a minimum and less than or equal to a maximum number of potential mark constituents required to define a security mark, identifying the neighborhood as a potential security mark if the potential mark constituents in the neighborhood are arranged relative to each other in a manner corresponding to the actual mark constituents defining said security mark in said printed document;
- for each neighborhood identified as a potential security mark, processing said digital image data to identify said potential security mark as an actual security mark if said potential mark constituents in said neighborhood are uniform in terms of at least size and color; and
- preventing effective reproduction of said printed document if said digital image data comprises an actual security mark.

\* \* \* \* \*