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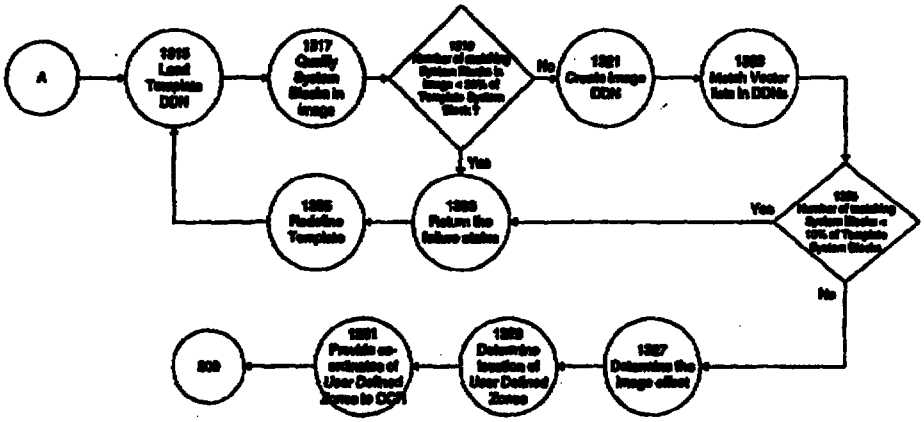


(57) Abstract

A system and method automatically detect user defined zones in a document image of a form, compensating for skew and displacement of the image with respect to an original image of form. The system provides a mechanism to input an image for a form document, such as a scanner. The system processes the image to reduce its resolution and to remove significant skew. The image is presented to the user to define the zones. These zones are areas from which the user desires to extract meaningful data through optical character recognition, such as names, dates, addresses, and items on an invoice form. The system further processes the image to remove horizontal and vertical lines, and to create a number of blocks, representing either text or image data. The lines are removed and the blocks form by runlength smoothing with various parameters. The blocks form clusters of connected pixels. The blocks are labeled such that any set of connected blocks share a unique identification value. Additional data is collected on the commonly labeled blocks to select those blocks useful to definition of a template. The template is a collection of vectors between the centroids of each of the selected blocks. A second document image for processing is obtained, and similarly processed to minimize, deskew, and identify blocks and vectors therein. The vectors in the second document image are compared with vectors in a user selected template to determine the location of user defined zones in the second document image.