

Disclosure of Application No. 08/411,369 (Ex. 1016)	Disclosure of US Patent No. 5,850,484 (Ex. 1014)
<p>“These limitations significantly degrade text in color images because sharp edges are very important for reading efficiency.” Ex. 1016, p. 10, lines 28-29.</p>	<p>“These limitations significantly degrade text in color images because sharp edges are very important for reading efficiency.” Ex. 1014, at 4:44-46.</p>
<p>“Accordingly, the need remains for a computationally efficient method for improving the visual quality of images, and in particular text, in scanned images.” Ex. 1016, p. 11, lines 16-18.</p>	<p>“Accordingly, the need remains for a computationally efficient method for improving the visual quality of images, and in particular text, in scanned images.” Ex. 1014, at 4:65-67.</p>
<p>“For edge sharpening in the frequency domain, the full image is first transformed into the frequency domain using the Fast Fourier Transform (FFT) or the Discrete Fourier Transform (DFT), low frequency components are dropped, and then the image is transformed back into the time domain.” Ex. 1016, p. 11, lines 9–14.</p>	<p>“For edge sharpening in the frequency domain, the full image is first transformed into the frequency domain using the Fast Fourier Transform (FFT) or the Discrete Fourier Transform (DFT), low frequency components are dropped, and then the image is transformed back into the time domain.” Ex. 1014, at 4:56–61.</p>
<p>“The scanned image, although it can be any image, in the preferred embodiment is a printed version of the reference image. Thus, the variance of the scanned image represents the energy or frequency composition of the reference image but which is compromised by the inherent limitations of the scanner. The scaling matrix, therefore, boosts the frequency components that are compromised by the scanning process.</p> <p>A preferred embodiment of the invention is described herein in the context of a color facsimile (fax) machine. The color fax machine includes a scanner for rendering a color</p>	<p>“The scanned image, although it can be any image, in the preferred embodiment is a printed version of the reference image. Thus, the variance of the scanned image represents the energy or frequency composition of the reference image but which is compromised by the inherent limitations of the scanner. The scaling matrix, therefore, boosts the frequency components that are compromised by the scanning process.</p> <p>A preferred embodiment of the invention is described herein in the context of a color facsimile (fax) machine. The color fax machine includes a scanner for rendering a color</p>

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<p>image into color source image data that represents the color image, a compression engine that compresses the color source image data to compressed image data, a means for encapsulating the compressed image data, and a means for transmitting the encapsulated data. The compression engine includes means for storing two quantization tables. The first quantization table is used to quantize the image data transformed using the discrete cosine transform (DCT). The second quantization table is encapsulated with the encoded quantized image data for use in decompressing the image. The second quantization table is related to the first quantization table in the manner described above. When used to transmit and receive color images between two locations, the machine transfers the images with higher quality than prior systems.” Ex. 1016, p. 9, line 24 - p. 10, line 15.</p>	<p>image into color source image data that represents the color image, a compression engine that compresses the color source image data to compressed image data, a means for encapsulating the compressed image data, and a means for transmitting the encapsulated data. The compression engine includes means for storing two quantization tables. The first quantization table is used to quantize the image data transformed using the discrete cosine transform (DCT). The second quantization table is encapsulated with the encoded quantized image data for use in decompressing the image. The second quantization table is related to the first quantization table in the manner described above. When used to transmit and receive color images between two locations, the machine transfers the images with higher quality than prior systems.” Ex. 1014, at 5:39-63.</p>
<p>“Although the compression engine according to the invention is implemented in dedicated hardware as described hereinabove, alternatively it can be implemented in software operating on a programmed computer having a microprocessor such as an Intel 80486 or Pentium or Hewlett Packard PA-RISC.” Ex. 1016, p. 21, lines 18–22.</p>	<p>“Although the compression engine according to the invention is implemented in dedicated hardware as described hereinabove, alternatively it can be implemented in software operating on a programmed computer having a microprocessor such as an Intel 80486 or Pentium or Hewlett Packard PA-RISC.” Ex. 1014, at 10:1–6.</p>
<p>“Although the compression engine according to the invention is implemented in dedicated hardware as described hereinabove, alternatively it</p>	<p>“Although the compression engine according to the invention is implemented in dedicated hardware as described hereinabove, alternatively it</p>

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<p>can be implemented in software operating on a programmed computer having a microprocessor such as an Intel 80486 or Pentium or Hewlett Packard PA-RISC. In the latter case, the various tables, whether precomputed or computed real-time, are stored in the dynamic random access memory (DRAM) of the computer during the compression and decompression processes and the various steps of the method are implemented by software processes or routines. In addition, there a numerous combinations of hardware and/or software that can be used to implement compression and/or decompression engines according to the invention depending on the desired performance and cost. The combinations are too numerous to describe individually but those skilled in the art could implement such combinations based on the description found herein.” Ex. 1016, p. 21, line 18 – p. 22, line 3.</p>	<p>can be implemented in software operating on a programmed computer having a microprocessor such as an Intel 80486 or Pentium or Hewlett Packard PA-RISC. In the latter case, the various tables, whether precomputed or computed real-time, are stored in the dynamic random access memory (DRAM) of the computer during the compression and decompression processes and the various steps of the method are implemented by software processes or routines. In addition, there a numerous combinations of hardware and/or software that can be used to implement compression and/or decompression engines according to the invention depending on the desired performance and cost. The combinations are too numerous to describe individually but those skilled in the art could implement such combinations based on the description found herein.” Ex. 1014, at 10:1–18.</p>