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**Morgan-Mar et al.**

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(54) **BOKEH AMPLIFICATION**

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(51) **Int. Cl.**

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| ***G06K 9/40*** | (2006.01) |
| ***H04N 5/225*** | (2006.01) |
| ***H04N 5/228*** | (2006.01) |
| ***H04N 5/262*** | (2006.01) |
| ***H04N 5/232*** | (2006.01) |

(52) **U.S. Cl.**

CPC ..... ***H04N 5/23212*** (2013.01)
USPC ..... **382/280**; 348/207.1; 348/222.1; 348/239; 382/255; 382/276

(58) **Field of Classification Search**

USPC ..... 348/207.1–207.11, 208.99–208.16, 348/222.1, 239, 241, 345–357, 362–368
See application file for complete search history.

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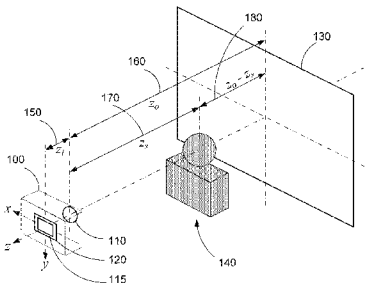
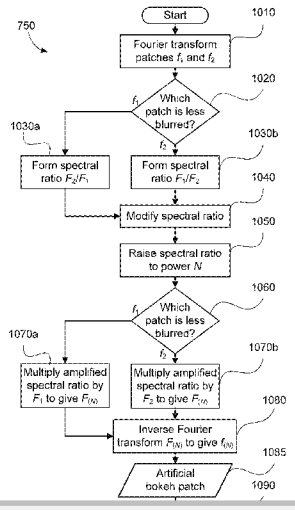
(57) **ABSTRACT**

A method of modifying the blur in at least a part of an image of a scene captures at least two images of the scene with different camera parameters to produce a different amount of blur in each image. A corresponding patch in each of the captured images is selected each having an initial amount of blur is used to calculate a set of frequency domain pixel values from a function of transforms of the patches. Each of the pixel values in the set are raised to a predetermined power, forming an amplified set of frequency domain pixel values. The amplified set of frequency domain pixel values is combined with the pixels of the patch in one of the captured images to produce an output image patch with blur modified relative to the initial amount of blur in the image patch.

**15 Claims, 13 Drawing Sheets**



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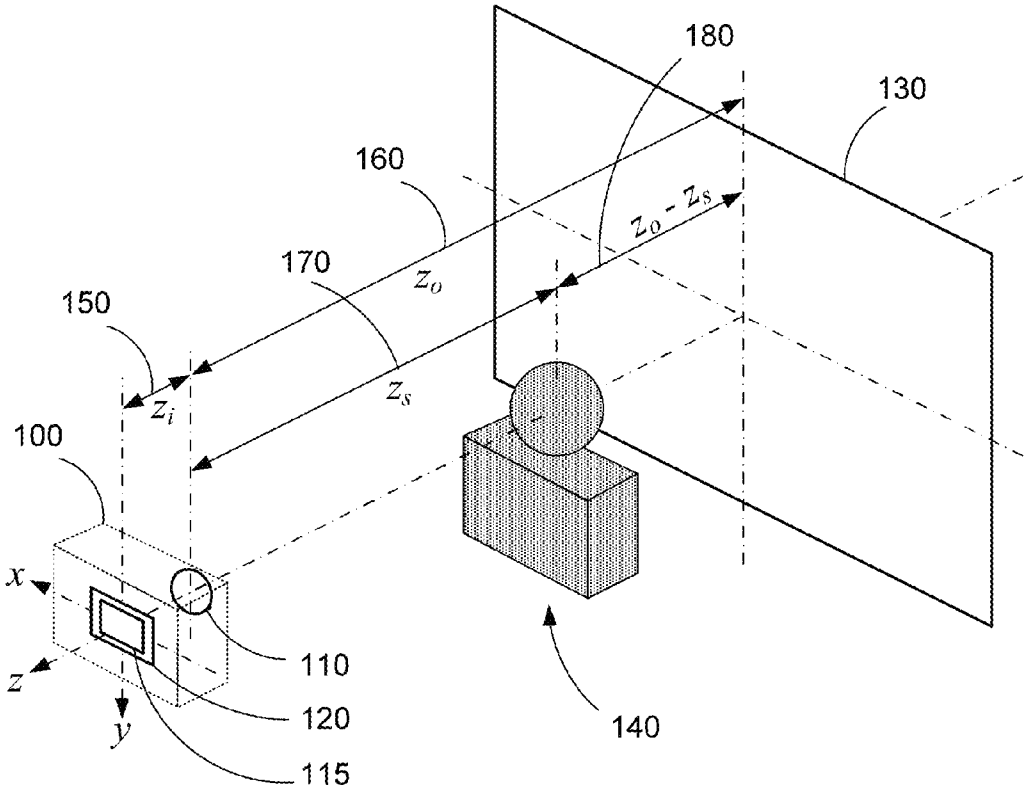


Fig. 1

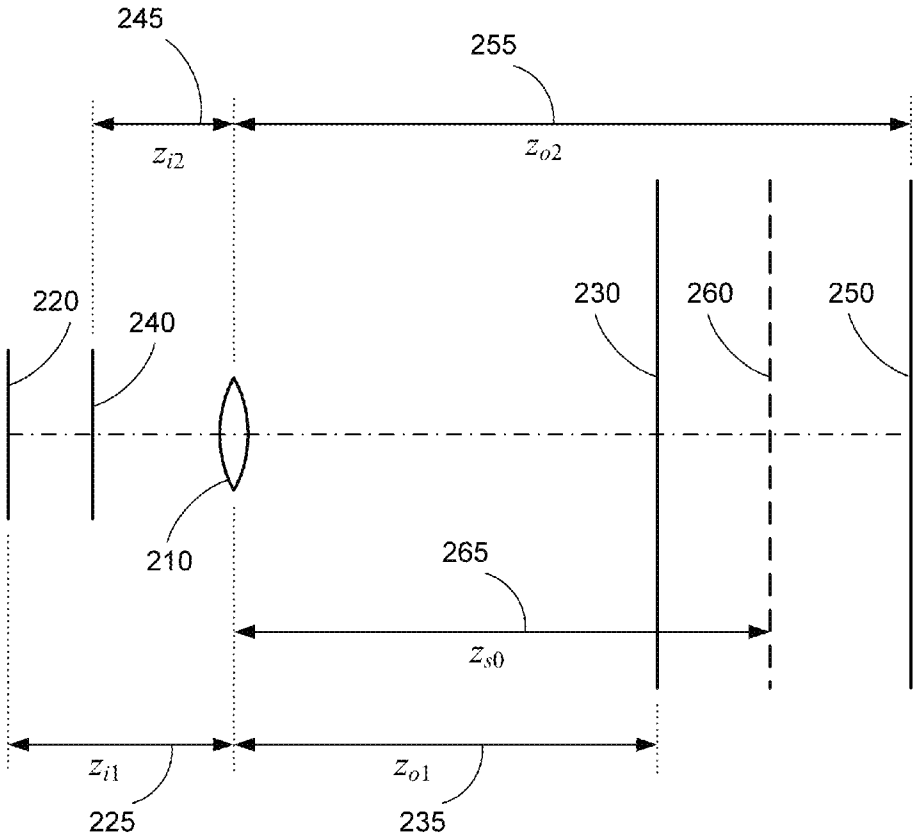


Fig. 2

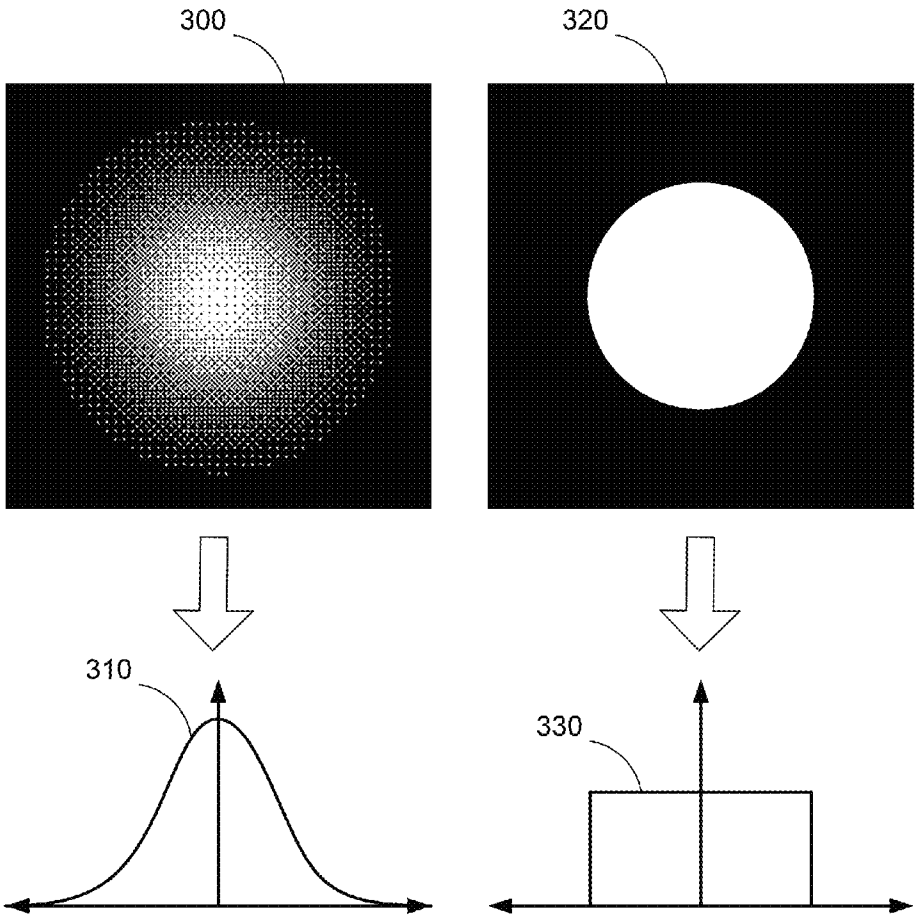


Fig. 3A

Fig. 3B

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