

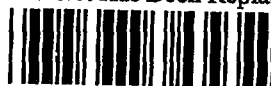
**ILLUMINATION AND SHADOW SIMULATION
IN A COMPUTER GRAPHICS/IMAGING SYSTEM**

ABSTRACT OF THE INVENTION

The total illumination of each pixel to be displayed by a real-time computer image generator, is determined for at least one source illuminating a scene to be displayed, by storing in an observer depth buffer data signals representing those portions of object polygons visible to the observer in each pixel of the display, and storing in a source depth buffer, associated with each of the at least one scene-illuminating light sources, data signals representing illumination intensity received by each polygon pixel viewable from that associated source. A data signal, for each displayable pixel in the observer depth buffer, is generated by combining in non-saturating manner the illumination intensity of each light source impinging upon the equivalent pixel in all of the associated source depth buffers.

Figure 4(a)

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