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(54) **STRESS SEAL FOR ACOUSTIC WAVE TOUCHSCREENS**

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(57) **ABSTRACT**

A sealing system for use with acoustic touchscreens is provided. The system includes a seal coupled to a frame, the frame being positioned directly over the acoustic touchscreen components, e.g., acoustic transducers, reflective arrays, etc. such that the seal prevents contamination of the underlying components. The system uses a plurality of tensioning elements that are either integral to, or separate from, the frame. The tensioning elements are preferably coupled at the four corners of the CRT, and more preferably coupled to the CRT mounting tabs. Assuming an approximately spherically curved touchscreen surface, the tensioning elements provide a uniform compressive force per unit length along the entire perimeter of the seal. As a consequence of the tensioning elements, the frame can be extremely thin, lightweight, and flexible, thus allowing it to substantially conform to the shape of the touch surface. Additionally, a very small and uniform gap can be maintained between the frame and the touch surface, e.g. less than 1 millimeter, thus allowing the designer to select from a wider range of sealing materials that meet the acoustic signal absorption requirements of the system while providing a robust contamination seal.

23 Claims, 7 Drawing Sheets