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Cobb, Jr. et al.

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[54] VARIABLE PITCH STRUCTURED OPTICAL

[73] Assignee: 3M Innovative Properties Company,

St. Paul, Minn.

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[51] **Int. Cl.**⁶ **G02B 5/04**; B32B 3/30 [52] **U.S. Cl.** **428/156**; 428/141; 428/156; 428/913; 428/179; 428/167; 428/163; 359/530; 359/831; 359/834; 359/833; 359/837; 362/337; 362/339; 362/26; 385/146; 385/901; 385/36

428/913, 179, 167, 163; 359/530, 831, 834, 833, 837; 362/337, 339, 26; 385/146,

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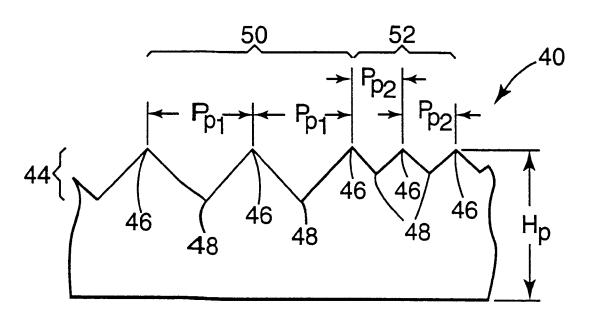
Olof Bryngdahl, "Moiré: Formation and Interpretation", Optica Acta, 24 (1), 70-77 (1977).

Primary Examiner-William P. Watkins, III Attorney, Agent, or Firm-Stephen W. Buckingham

ABSTRACT [57]

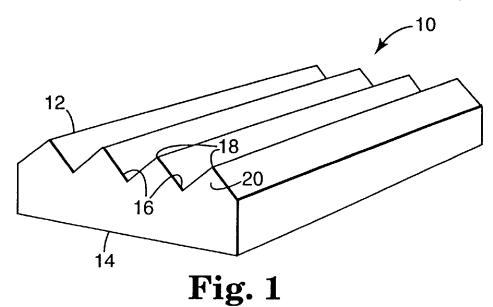
The present invention includes a structured optical film with variable pitch peaks and/or grooves to reduce the visibility of moiré interference patterns and optical displays incorporating one or more layers of the film. The pitch variations can be over groups of adjacent peaks and/or valleys or between adjacent pairs of peaks and/or valleys.

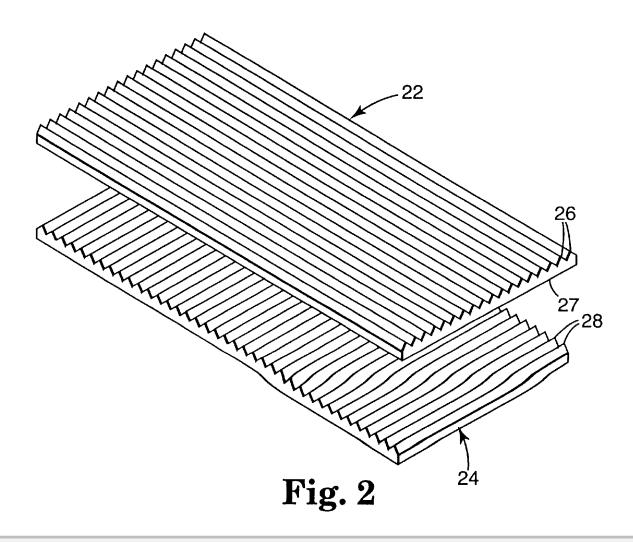
35 Claims, 4 Drawing Sheets



901, 36









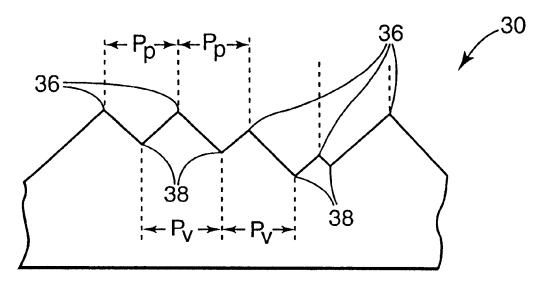


Fig. 3A

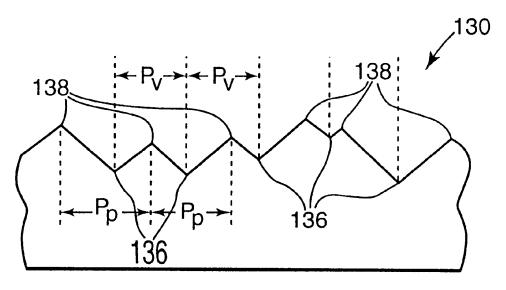
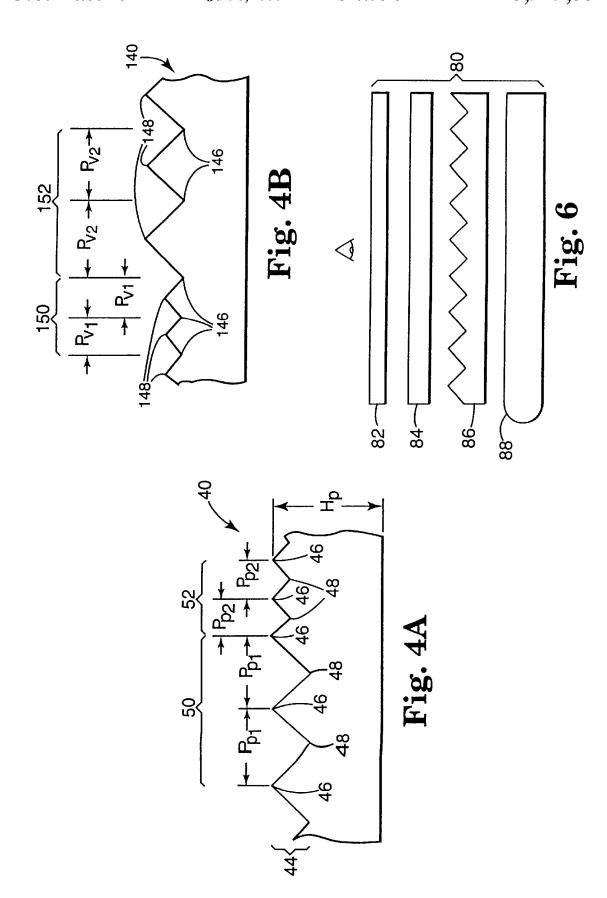
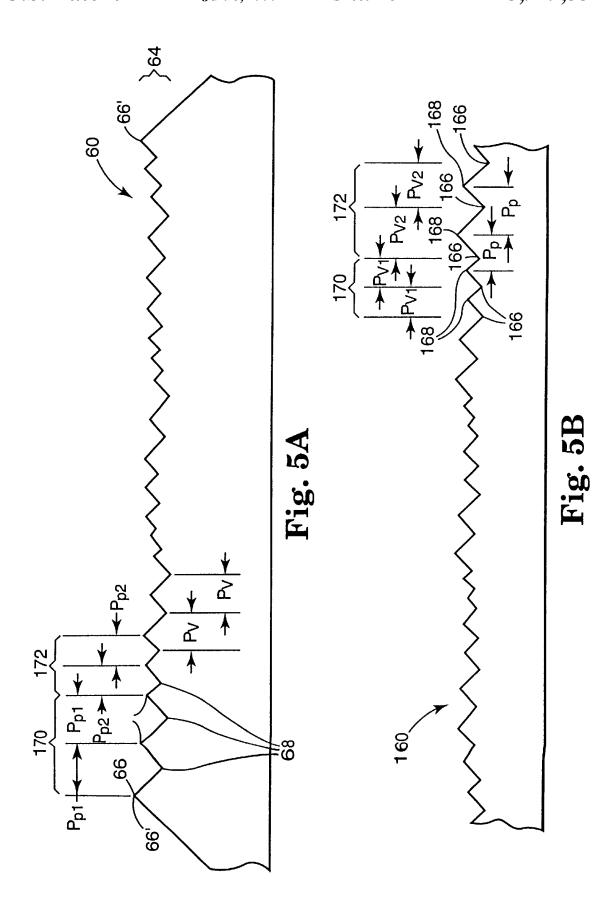


Fig. 3B





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