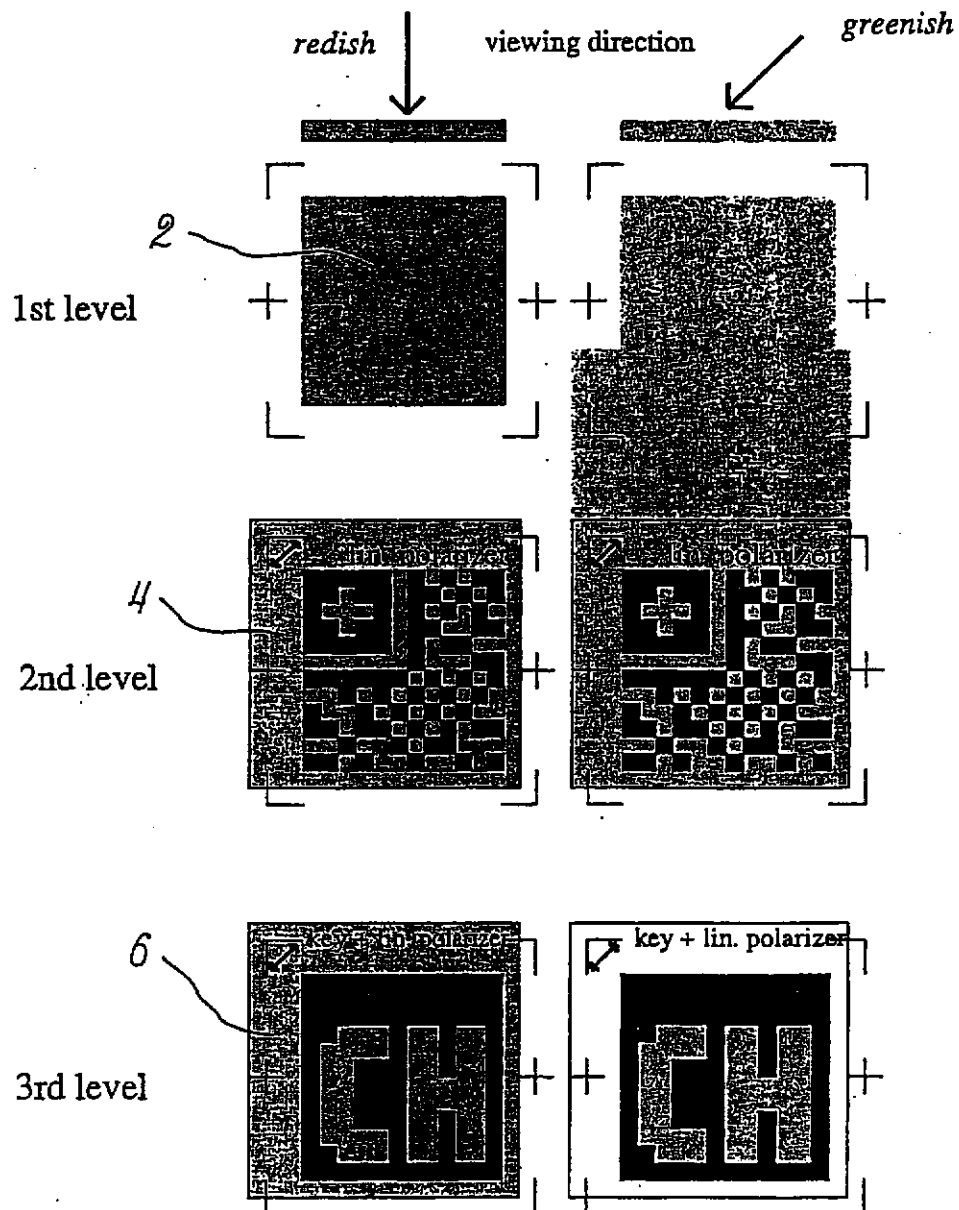


27 JUL 2004

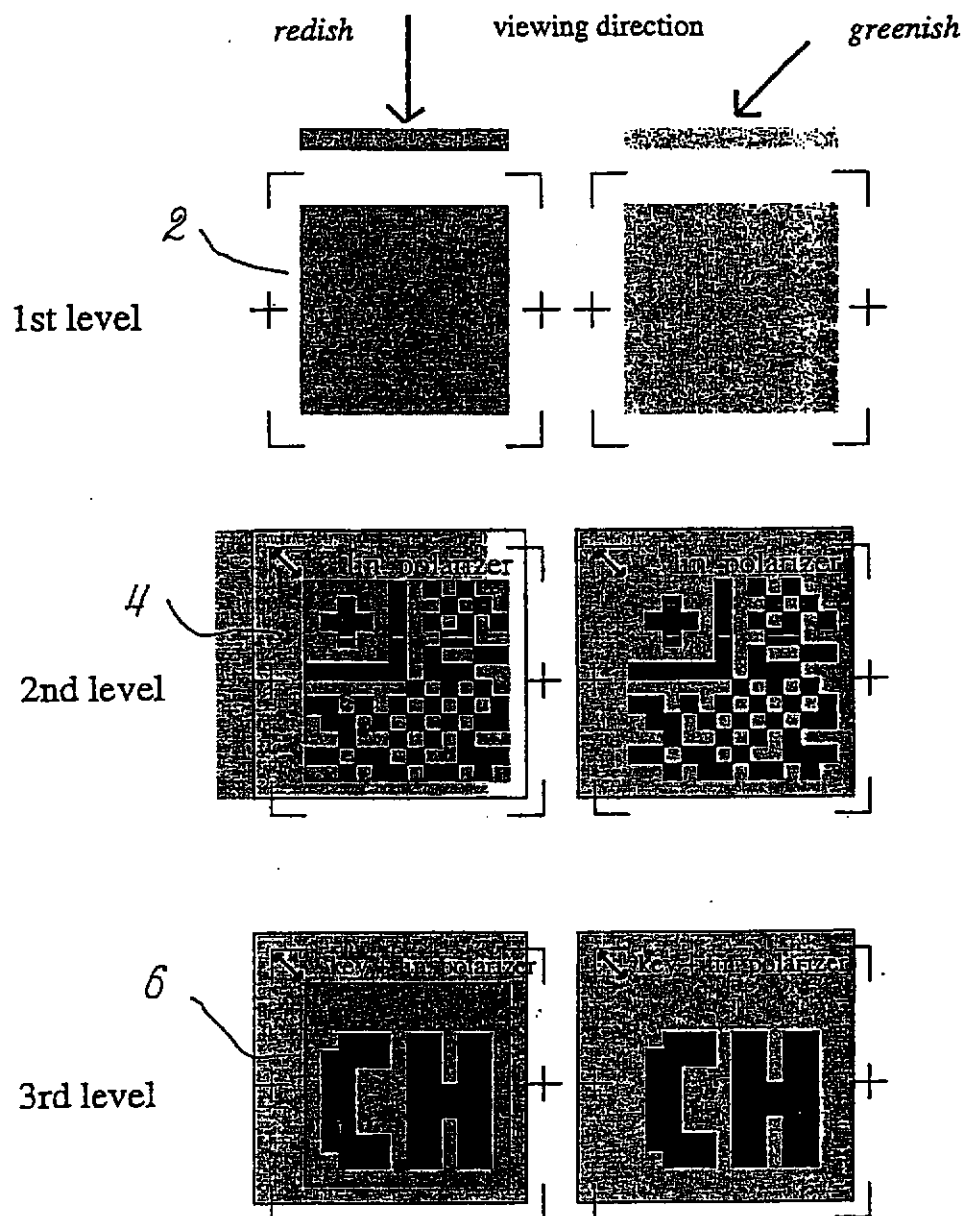
1/8

Fig. 1a and 1b: Appearance of an Example of a 1st, 2nd and 3rd level cholesteric LPP/LCP Security Device

Fig. 1a: 'Positive mode' (polarizer +45° to the x-axis)



2/8

Fig. 1b: 'Negative mode' (polarizer -45° to the x-axis)

3/8

Fig. 2a,b and c: Schematic view of the "Optical device" together with the inspection tools for 1st, 2nd and 3rd level

Fig. 2a: 3rd level inspection mode

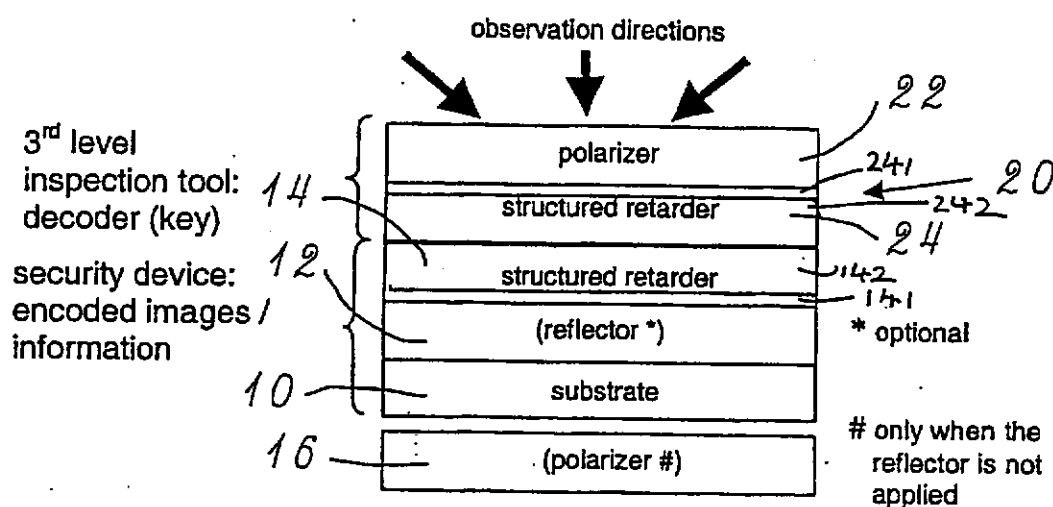


Fig. 2b: 2nd level inspection mode

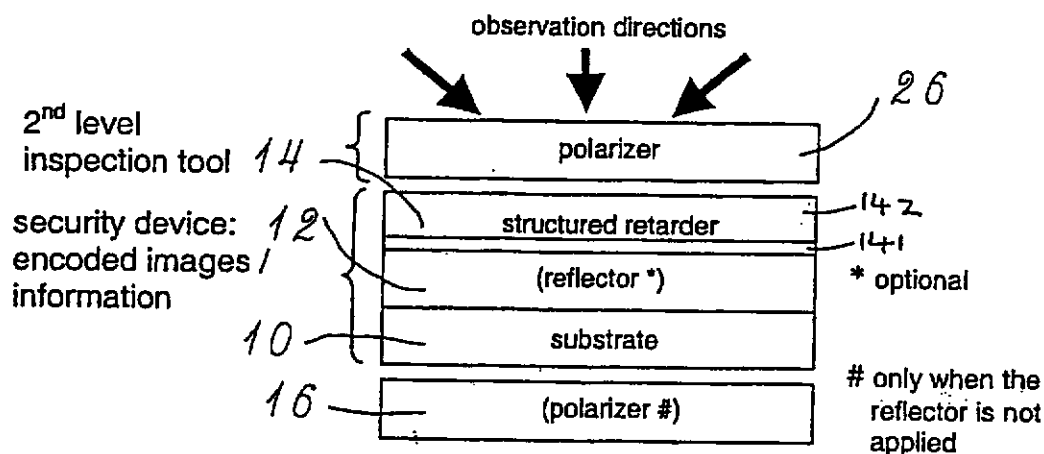
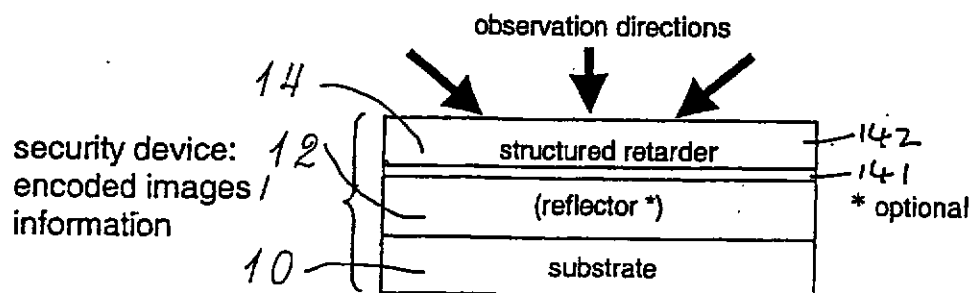


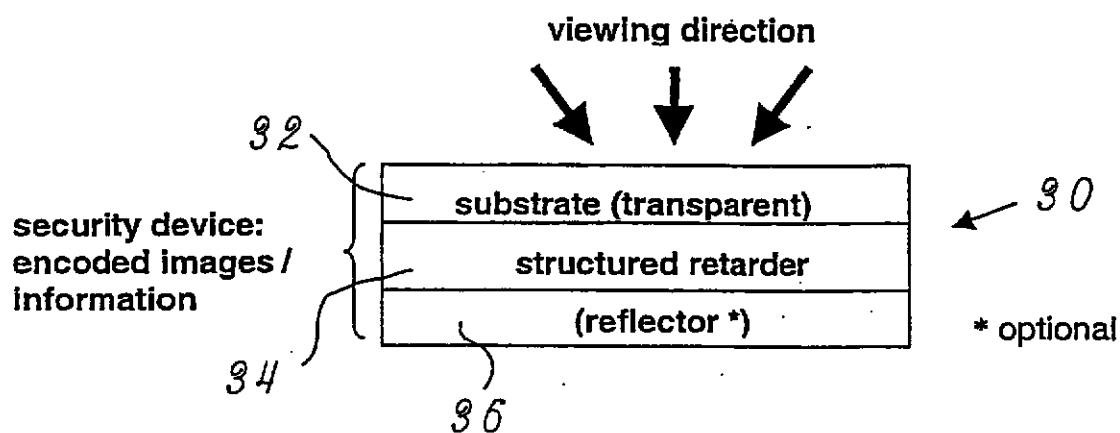
Fig. 2c: 1st level inspection mode by tilting the security device



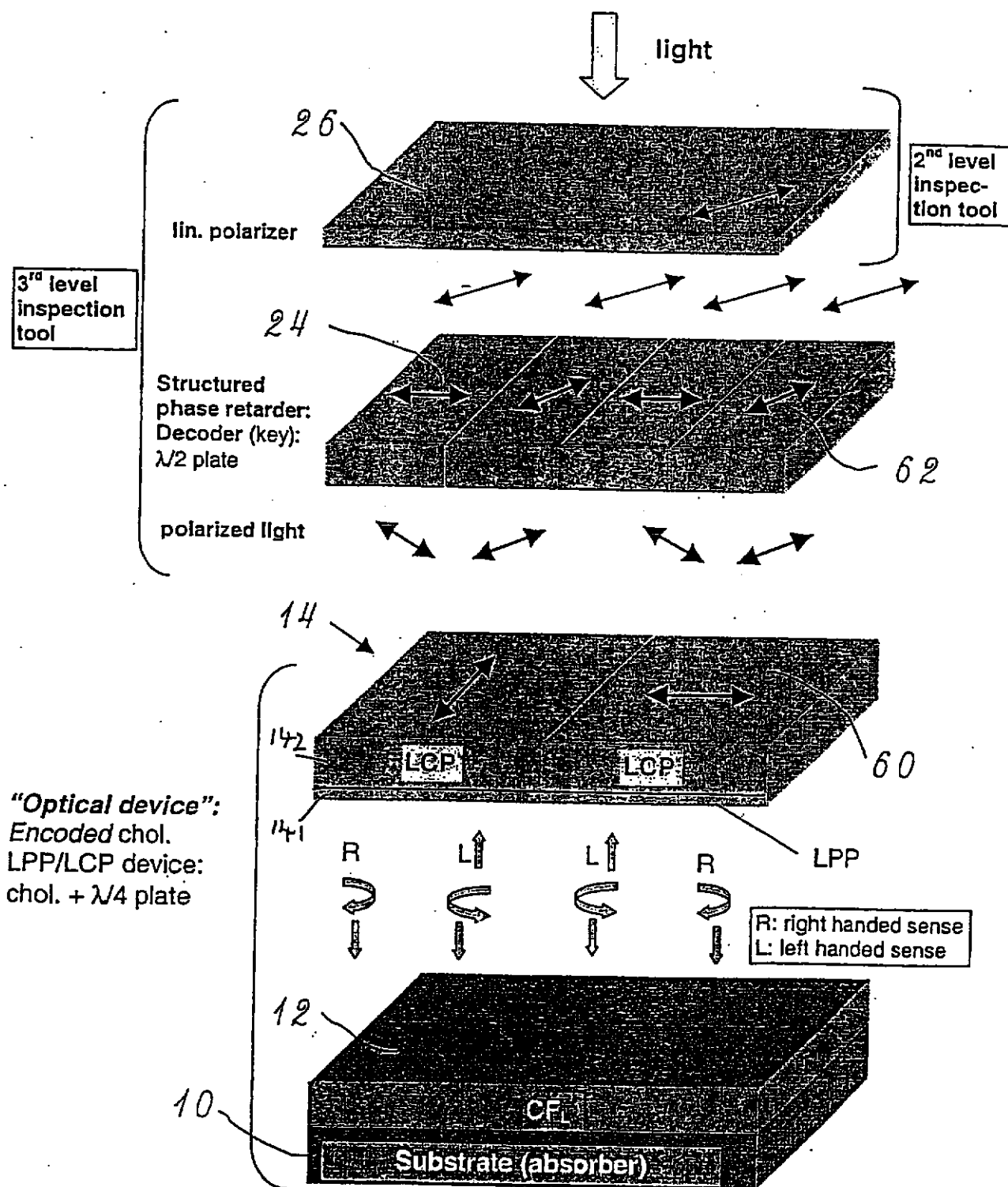
27 JUL 2004

4/8

Fig. 3: Alternative schematic view of the "Optical device" (inverse layer order e.g. for transfer foils or similar substrates); only the security device without inspection tools is depicted

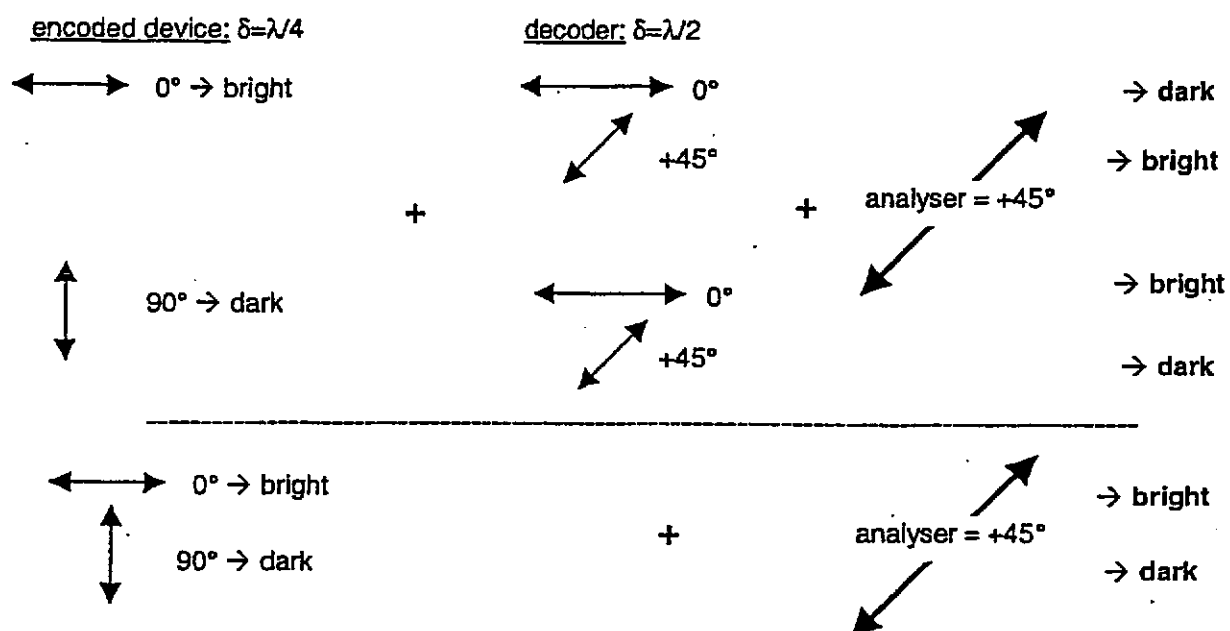


5/8

Fig. 4: 3rd level LPP/LCP Security Device: Cholesteric type

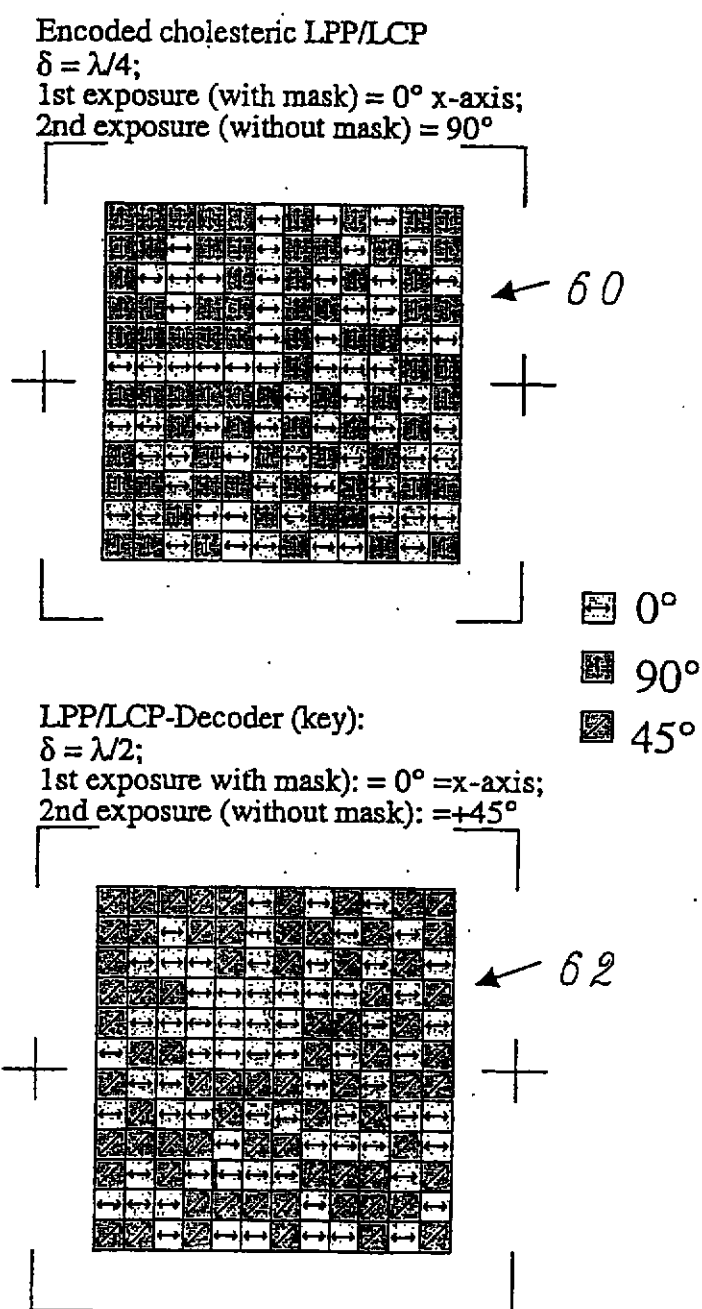
6/8

Fig. 5: Some typical retarder configuration for the encoded device and decoding device (cholesteric type)



7/8

Fig. 6: Schematically representation of the geometry of an encoded LPP/LCP Device and its corresponding decoder (example)



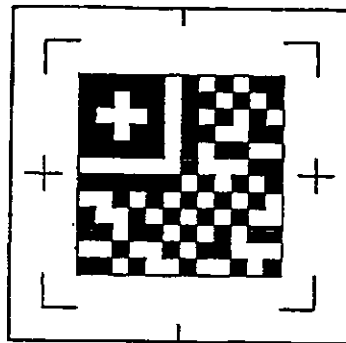
8/8

Fig. 7: Masks for the manufacturing of an "Optical device"
(example)

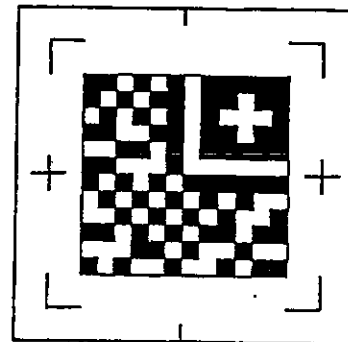
Masks for encoded 3rd level chol. LPP/LCP Security

Mask: Chol. LPP/LCP device (encoded): retardation $\delta = \lambda/4$

1st exposure (with mask) = 0° = x-axis; 2nd exposure (without mask) = 90°



for reverse configuration:
1. LPP - 2. LCP - 3. CF
(also reverse view: substrate first,
then LPP, then LCP, then CF)



for normal configuration:
1. CF - 2. LPP - 3. LCP
(normal view: LCP first,
then LPP, then, CF, then

Mask LPP/LCP-Decoder (key): retardation $\delta = \lambda/2$;

1st exposure (with mask) = 0° = x-axis; 2nd exposure (without mask) = $+45^\circ$

