

(19) (KR)
(12) (A)

(51) 。 Int. Cl.7
G03F 1/08

(11)
(43)

2003-0080183
2003 10 11

(21) 10-2003-0004161
(22) 2003 01 22

(30) 10/058,744 2002 01 23 (US)

(71) - ()
(94304) 3000

(72) 94306 # 4276

94061 가 2295

94043 820

(74)

:

(54) -

(403, 503) 가 (402, 502)
(411, 520) UV UV (204 207) 가 UV -

4c

1a 1h

2a 2f (feature)

3 가

4a 4d 5a 5d 2 -

6a 6d -

7a 7b - UV (UV blocking feature)

가

(101) 1a 1h
1a

(101) 1c (103) 1b (102) (102) (101)

(103) UV (103) ('UV') (103) (102)

(103) UV (positive mask) (negative mask)가 1a 1h UV (solvent)

(non-feature area) UV 가 , UV

가

1d UV (104, 105) (103)

(102)

, UV

1e (feature channel) (106, 1
07) UV (1b 104 105)
가 가 (108) (102)
가 가 1f
(102) 가 1g 가 가
3 1a 1h 가 가 UV
1a 1h 가 UV
가 가 UV
가, (depth of focus) UV
가 (feature size) X- (so
ft X-ray) / 가
chemical-analysis system), (miniature
가 가
가
(optical-mechanical stamp) (intrusion) 가
UV UV (embossing)
UV UV UV
(optical-mechanical pattern-imprinting mask : OMPIM)
가 가
가 가

2a 2f
 2a 2f
 (202) 2c (201) 가
 가
 2d 2f (202) (201) (203) 가
 (203) (201) 가 가 (204 208) 2f (203)
 (203)가 (213) (208) (204 207) 2d 2f
 (208) (201) 가 가
 가 3 가
 (208) (207) (214) (208) 가
 (208) (214) 가
 , (208) (214)
 3 (215) w₁, (216) w₂,
 (217) h, (218) d 가
 x (208)
 $w_1 dx$
 (214)
 $w_2 hx$
 (208)
 $1/2w_1 dx < w_2 hx$
 $w_1 d < 2w_2 h$
 $\frac{w_1 d}{h} < 2w_2$
 3 가
 가 (aspect ratio) $\frac{w_1}{h}$
 (polydimethyl siloxane, PDMS) 가 1:3
 가

가 (hydrophobic) UV 가 (hydrophilic) 5d (502)
5a 5d OMPIM (521) UV

6a 6d OMPIM (4604, 605) 2 (602, 303) 가 OMPI
M(601) 6a 2 UV (607), (608), (609) (610)
UV OMPIM (606) 2 (602 603) UV (604, 605)
UV OMPIM UV UV (612) 6b OMPIM 6b UV (612)
UV UV (612) UV (612) UV (612)
(609) 6c 가 UV 가 UV
가 UV (612) 가 UV (612) UV
(612) UV (collar) 6d (616, 617)
(618) (614, 615), /

가 (on)' / (off)' 가 /

7a 7b UV OMPIM 7a UV UV
OMPIM(701) OMPIM(702) OMPIM(703)
UV OMPIM UV UV
7b (704 707) OMPIM UV UV
가 UV 가 가
가 OMPIM OMPIM
UV OMPIM OMPIM
가 OMPIM OMPIM
OMPIM OMPIM

가 OMPIM OMPIM
가 가 가
가

(57)

1.

(402, 502)

- (403, 503)

- (403, 503) (402, 502)

- (411, 520)

(411, 520)

2.

1

- 가

(intrusion)(204 207) ,

가 (204 207)

3.

1

- 가

04 517)

(408, 5

4.

3

(409, 410)

(408)

(non-feature region)

5.

3

가

(feature region)

(520)

(504 517)

6.

-

(403, 503) ,

(204 207) ,

(408, 504 517)

7.

6

(403, 503)

(204 207)가

(polydimethyl siloxane) ,

8.

6

(408, 504 517)

(layers of an optically diffractive material)

9.

6

(701)

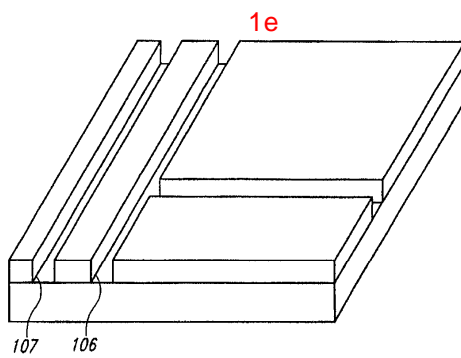
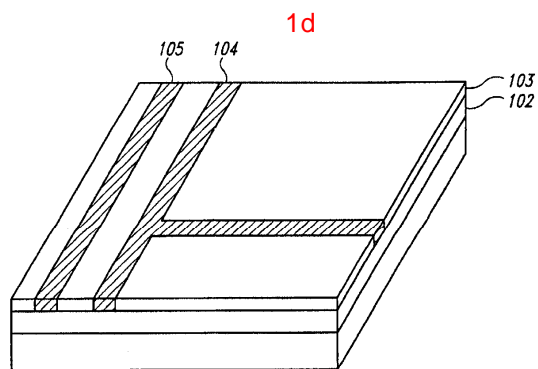
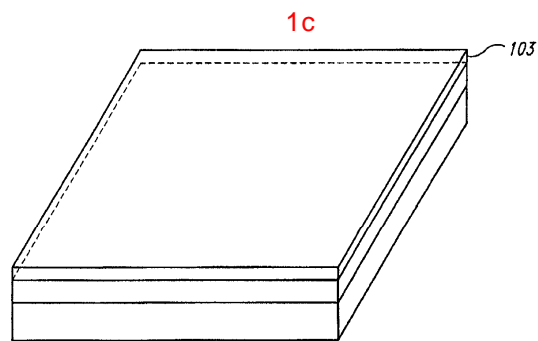
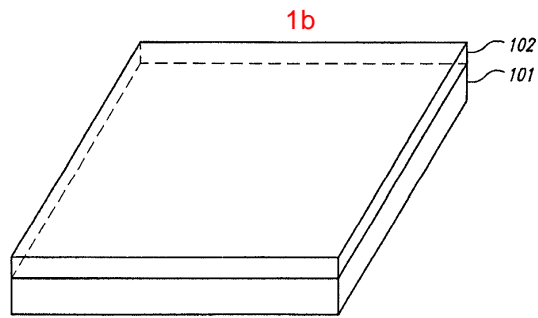
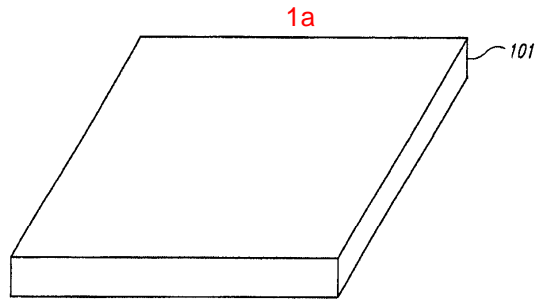
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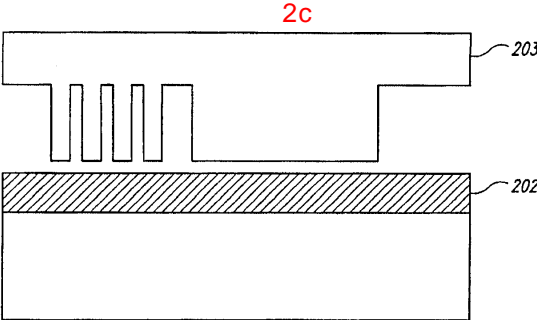
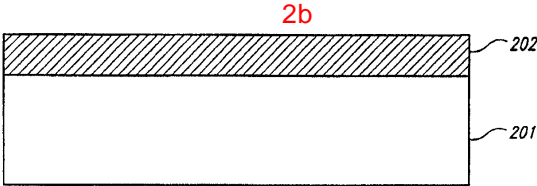
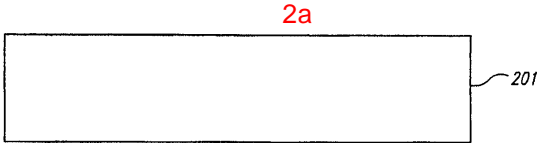
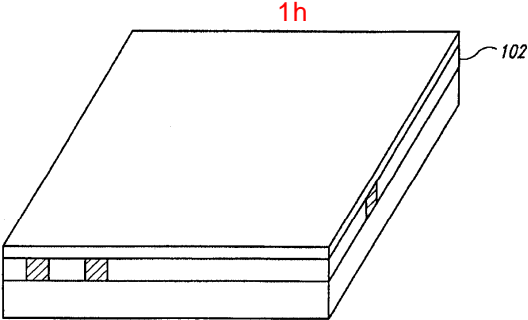
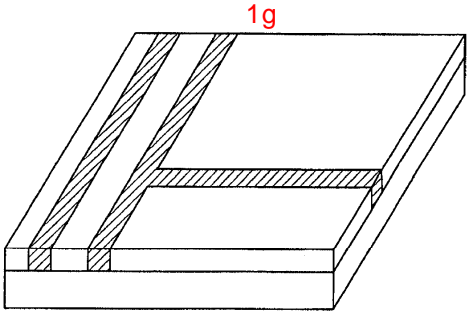
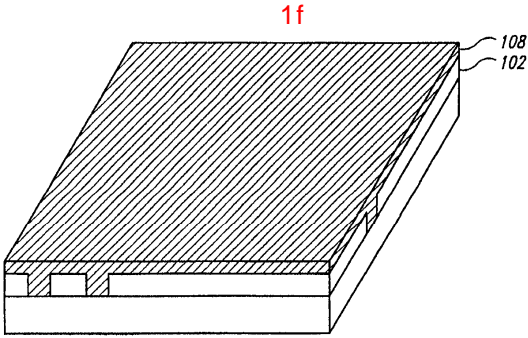
(703)

10.

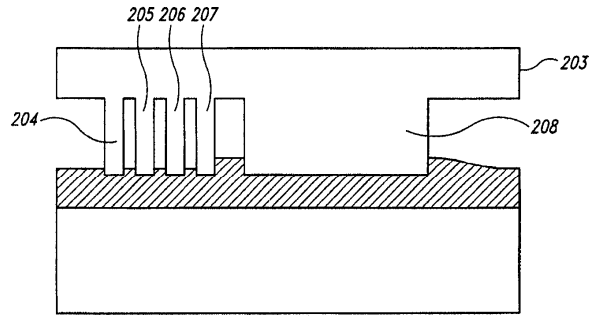
6

(403, 502)가

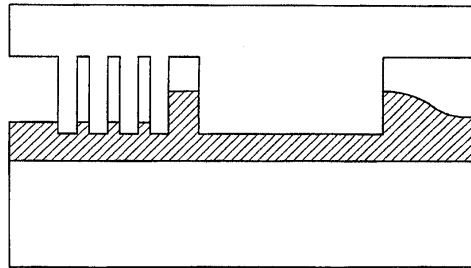




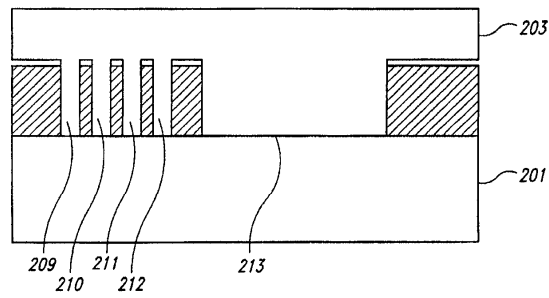
2d



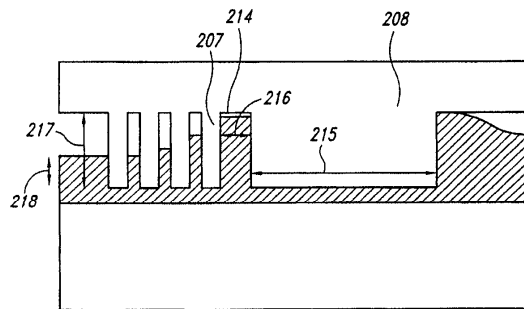
2e



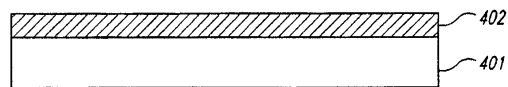
2f



3



4a



4b

