Title (en)
METHOD AND APPARATUS FOR REPLICATING MICROSTRUCTURED OPTICAL MASKS

Title (de)
VERFAHREN UND VORRICHTUNG ZUR REPLIKATION FEIN STRUKTURIERTER OPTISCHER MASKEN

Title (fr)
PROCEDE ET DISPOSITIF DE REPLICATION DE MASQUES OPTIQUES FINEMENT STRUCTURES

Publication
EP 1768825 A1 20070404 (DE)

Application
EP 05785070 A 20050907

Priority
- EP 2005009590 W 20050907
- DE 102004043385 A 20040908

Abstract (en)
[origin: WO2006027217A1] The invention relates to a method and an apparatus for replicating planar, thin-layered, and microstructured flat lens systems and optical masks (LM) that are provided with such microstructured lens systems which are hardened from a highly viscous transparent fluid on a supporting substrate plate (TP). The fluid is introduced between a plate-shaped master plate (M) and a movable supporting substrate plate and remains joined to said substrate plate after hardening. The inventive method is carried out in a non-rotational manner while the molding space is not delimited by sidewalls or similar in the direction of expansion of the fluid. The inventive flat lens systems or optical masks are embodied as lenticulars, field lenses, or Fresnel lenses. The final shape of the mask is homogeneous, has a geometrically accurate layer thickness, and is free from air pockets. The inventive method and apparatus allow for controlled replication at great geometrical accuracy and extremely good optical quality.

IPC 8 full level
B29C 31/04 (2006.01); **B29C 35/08** (2006.01); **B29C 39/02** (2006.01); **B29C 43/56** (2006.01); **B29D 11/00** (2006.01); **G02B 27/22** (2006.01)

CPC (source: EP US)
B29C 31/045 (2013.01 - EP US); **B29C 43/021** (2013.01 - EP US); **B29C 43/56** (2013.01 - EP US); **B29D 11/00269** (2013.01 - EP US); **B29D 11/00278** (2013.01 - EP US); **B29D 11/00413** (2013.01 - EP US); B29C 2043/3488 (2013.01 - EP US); B29C 2043/3494 (2013.01 - EP US); B29C 2043/3644 (2013.01 - EP US); B29L 2011/0016 (2013.01 - EP US); B29L 2011/005 (2013.01 - EP US); G03H 2001/0284 (2013.01 - EP US)

Citation (search report)
See references of WO 2006027217A1

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
WO 2006027217 A1 20060316; CN 100575031 C 20091230; CN 101014455 A 20070808; DE 102004043385 B3 20060518; EP 1768825 A1 20070404; JP 2008512697 A 20080424; US 2008315442 A1 20081225

DOCDB simple family (application)
EP 2005009590 W 20050907; CN 200580029960 A 20050907; DE 102004043385 A 20040908; EP 05785070 A 20050907; JP 2007529344 A 20050907; US 57477205 A 20050907