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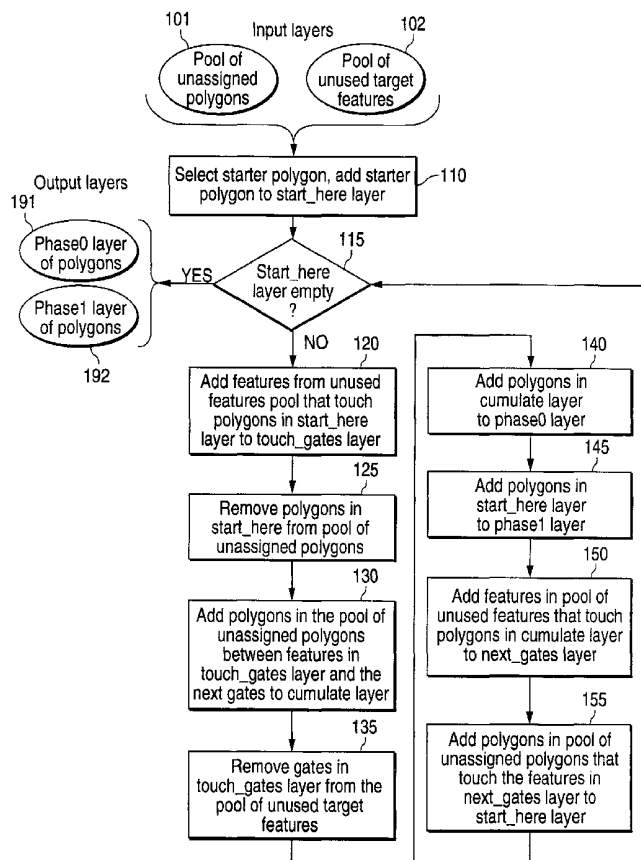
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PHASE-SHIFT LITHOGRAPHY MAPPING METHOD AND APPARATUS



(57) Abstract: For phase-shifting microlithography, a method of assigning phase to a set of shifter polygons [101] in a mask layer separated by a set of target features [102] includes assigning a first phase to a first shifter polygon [110, 140], identifying a set of target features that touch the first shifter polygon [120, 130], and assigning a second phase to all shifter polygons in the set that touch the set of target features in contact with the first shifter polygon [145, 150, 155]. The set of shifter polygons and the set of target features are separated into aggregates that are spatially isolated from each other such that the phase assignment in one aggregate [191] does not affect the phase assignments in other aggregates [192].



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INTERNATIONAL SEARCH REPORT

International application No.  
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**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) :G06F 7/60, 17/10  
US CL :716/21, 19

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 716/21, 19, 20

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

IELOnline

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A, P	US 6,185,727 B1 [LIEBMANN] 06 FEBRUARY 2001 (06.02.2001), column 5, line 46-column 6, line 19.	1-14
A	US 6,057,063 [LIEBMANN et al.] 02 MAY 2000 (02.05.00), column 6, lines 31-41; column 11, line 56-column 12, line 12.	1-14
A	US 5,923,566 [GALAN et al.] 13 JULY 1999 (13.07.1999) column 5, line 44-column 7, line 56.	1-14
A	US 5,923,562 [LIEBMANN et al.] 13 JULY 1999 (13.07.1999), column 4, line 64-column 7, line 34.	1-14

Further documents are listed in the continuation of Box C.  See patent family annex.

* Special categories of cited documents:	"T"
"A" document defining the general state of the art which is not considered to be of particular relevance	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

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