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Cha et al.

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(54) **METHOD OF EFFECTIVELY PREDICTING MULTI-LAYER BASED VIDEO FRAME, AND VIDEO CODING METHOD AND APPARATUS USING THE SAME**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1477 days.

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Related U.S. Application Data

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Foreign Application Priority Data

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(51) **Int. Cl.**
H04N 7/12 (2006.01)

(52) **U.S. Cl.** **375/240.12; 375/240.15; 375/240.16;**
375/240.24; 375/240.08

(58) **Field of Classification Search** None
See application file for complete search history.

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(57) **ABSTRACT**

A method and apparatus are provided for effectively predicting a video frame that use all of the advantages of an intra mode and an intra BL mode in multi-layer structure based-video coding. The method includes reconstructing the intra block of a lower layer using the previously reconstructed first neighboring blocks of the intra block; subtracting the first neighboring blocks from previously stored the second neighboring blocks of an upper layer corresponding to the first neighboring blocks; creating a differential predicted block based on a predetermined intra prediction mode by performing intra prediction using virtual differential neighboring blocks that are created as a result of the subtraction; adding the differential predicted block and the reconstructed intra block; and subtracting a predicted block, which is created as a result of the addition, from a block of the upper layer corresponding to the intra block.

25 Claims, 11 Drawing Sheets

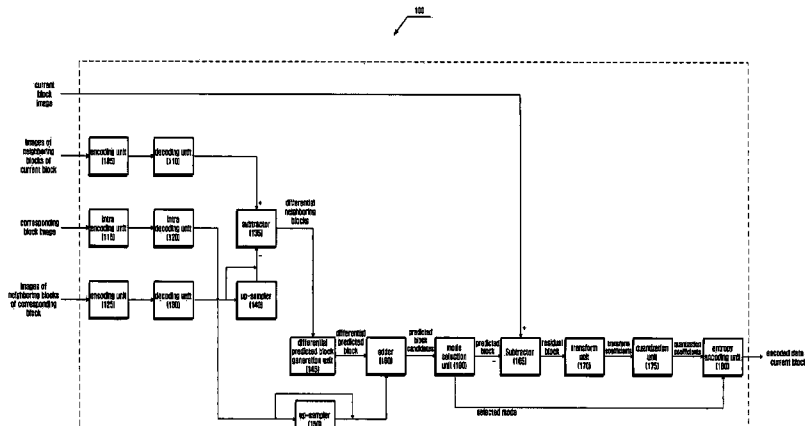


FIG. 1

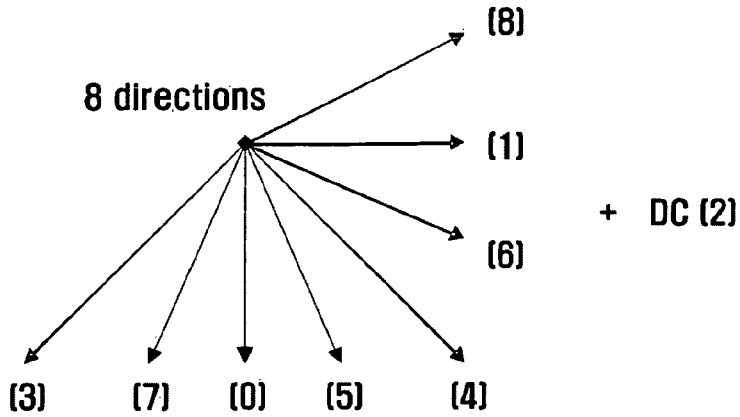


FIG. 2

M	A	B	C	D	E	F	G	H
I	a	b	c	d				
J	e	f	g	h				
K	i	j	k	l				
L	m	n	o	p				

FIG. 3

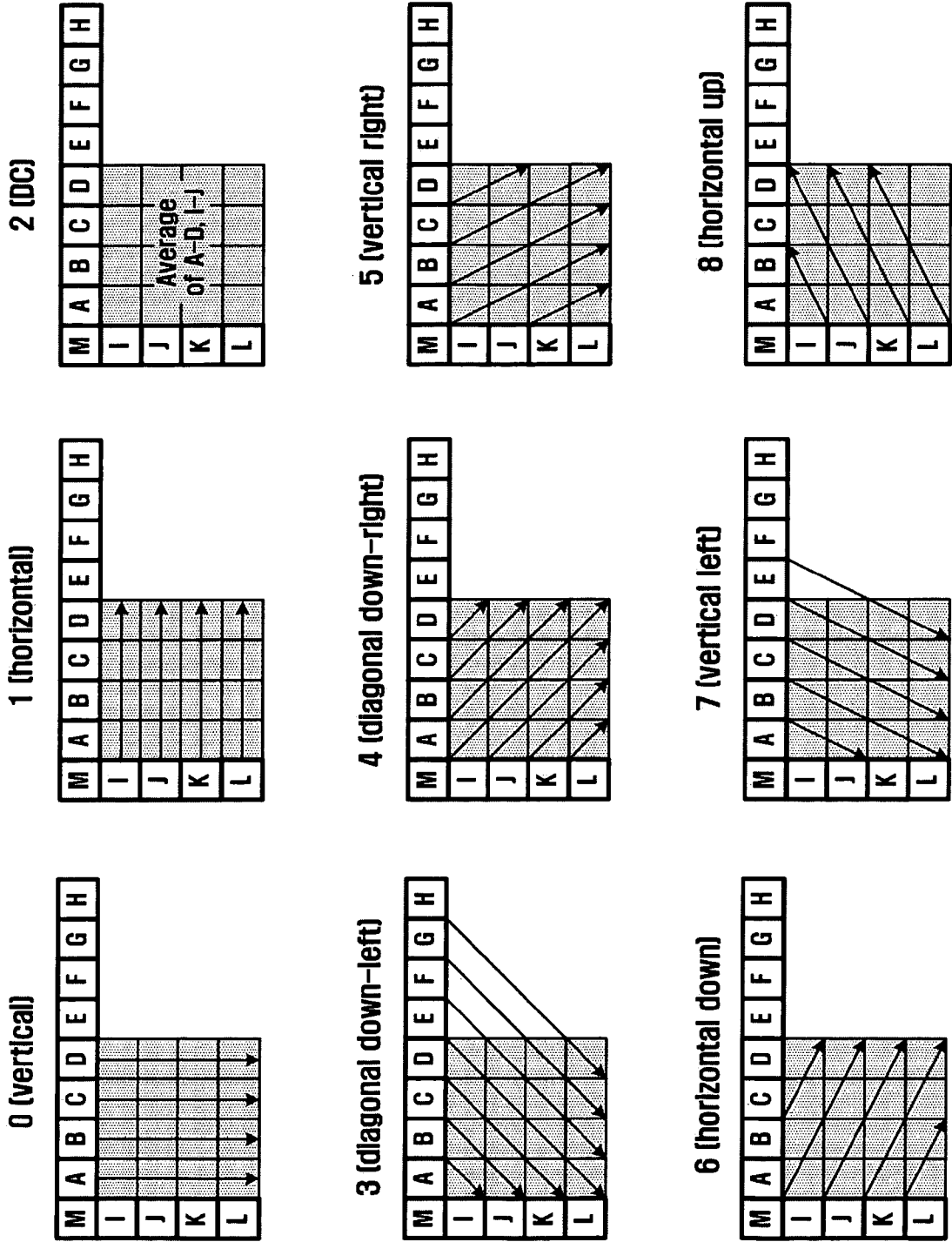


FIG. 4

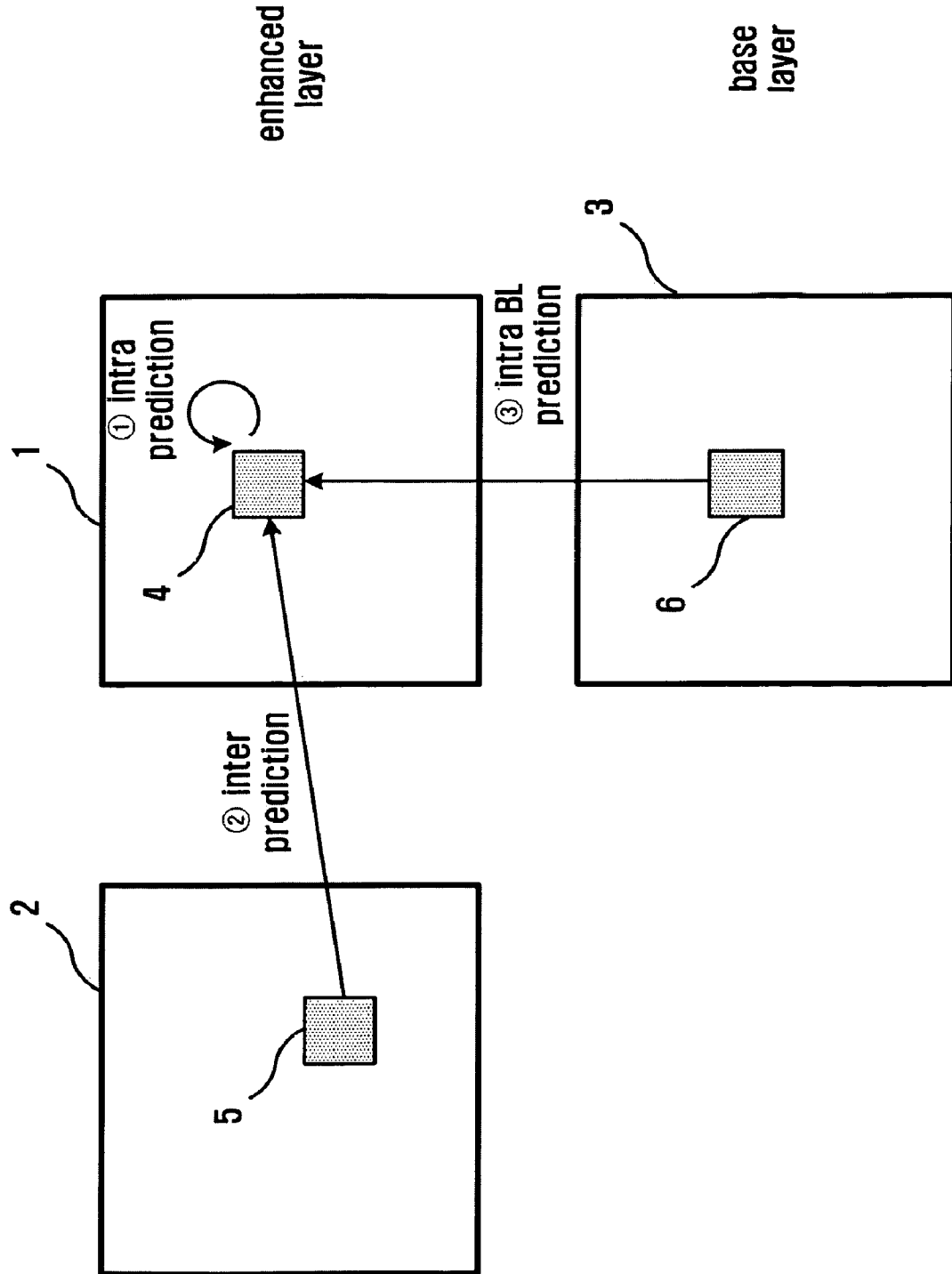
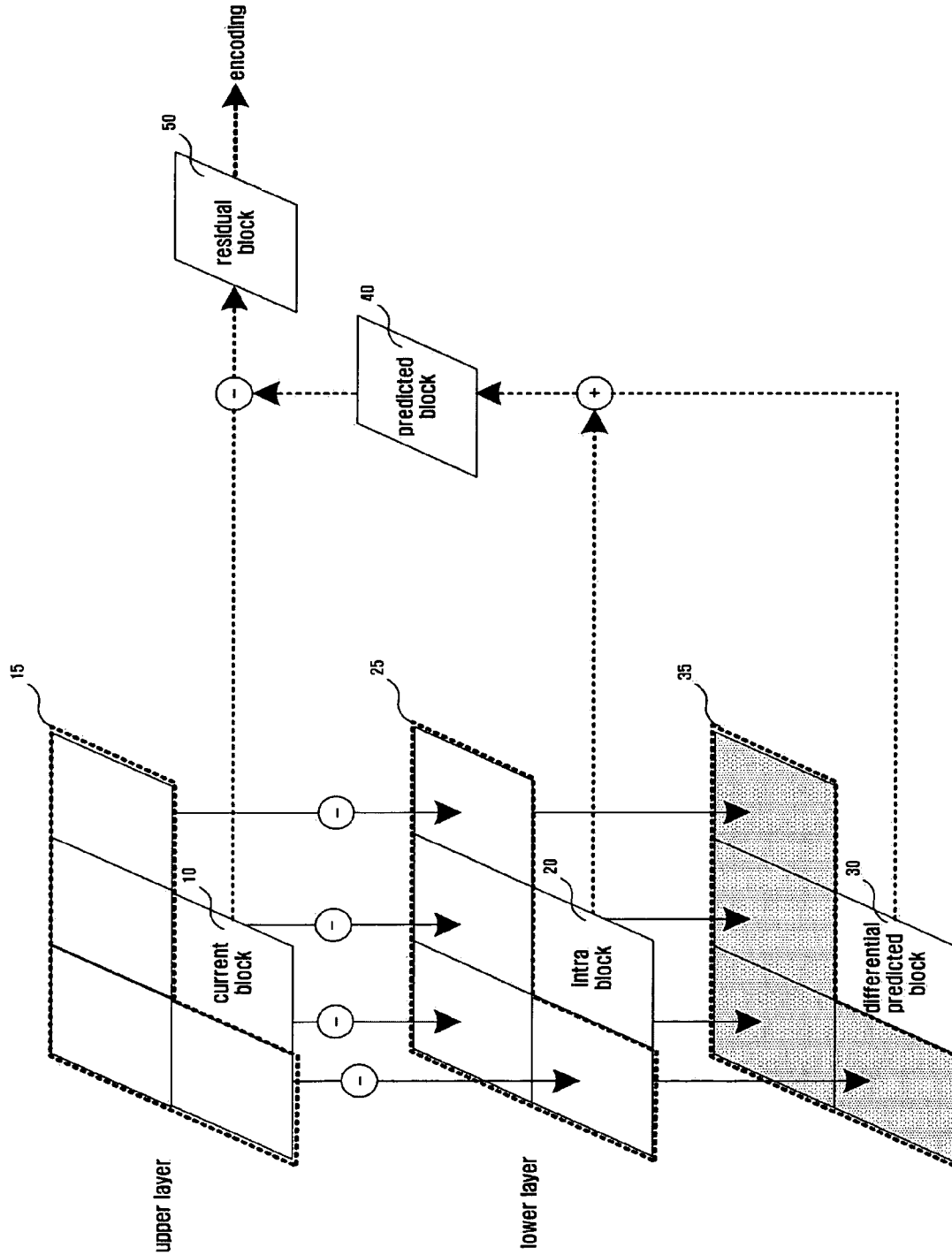


FIG. 5



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