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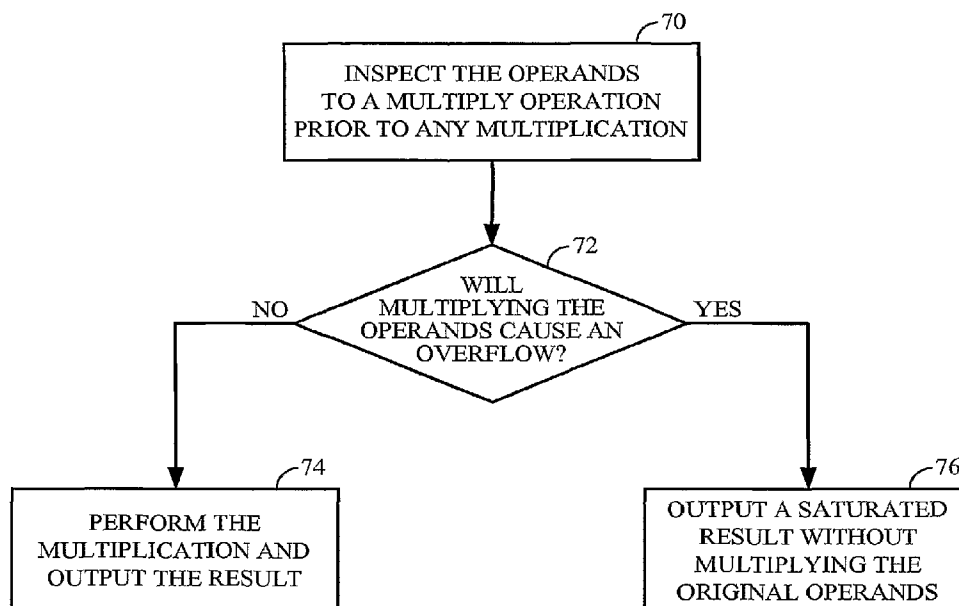
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Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

[Continued on next page]

(54) Title: PRE-SATURATING FIXED-POINT MULTIPLIER



(57) Abstract: A pre-saturating multiplier inspects the operands to a multiply operation prior to performing any multiplication. If the operands will cause an overflow requiring saturation, the multiplier outputs the saturated value without multiplying the original operands. In one embodiment, parameters derived from the operands are altered such that when the multiply operation is performed on the altered parameters, the multiplier produces the saturated result. This may comprise altering a Booth recoded bit group to select a negative zero instead of a zero as a partial product, and suppressing the addition of the value one to the partial products (thus effectively subtracting the value one). In another embodiment, when the operands that will cause an overflow are detected, the output of the multiplier is forced to a predetermined saturation value.

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