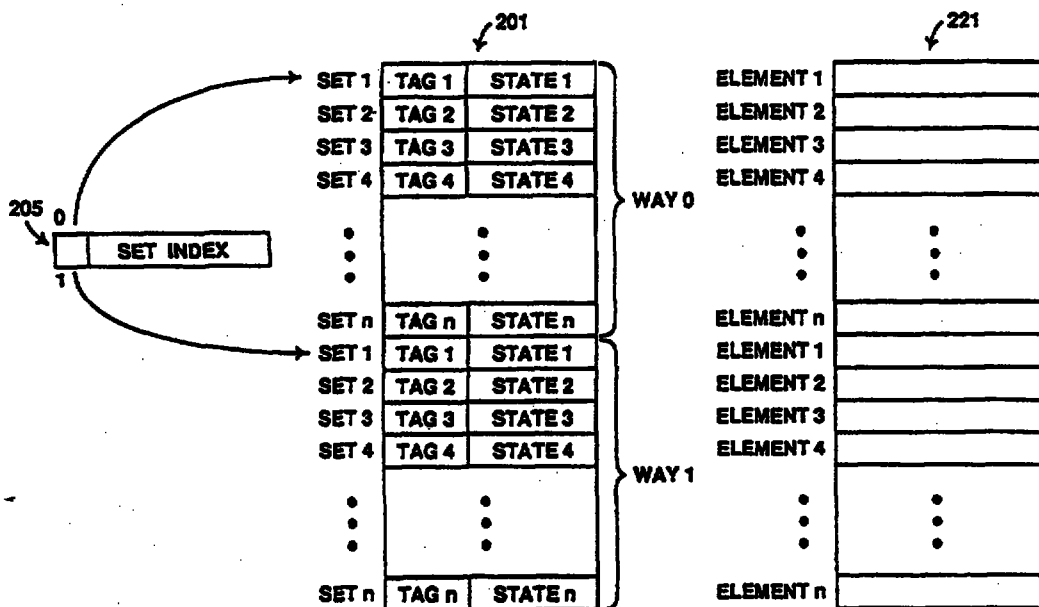


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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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## (54) Title: A TWO-WAY SET-ASSOCIATIVE CACHE MEMORY



## (57) Abstract

A two-way set-associative cache memory includes both a set array and a data array in one embodiment. The data array comprises multiple elements, each of which can contain a cache line. The set array comprises multiple sets, with each set in the set array corresponding to an element in the data array. Each set in the set array contains information which indicates whether an address received by the cache memory matches the cache line contained in its corresponding element of the data array. The information stored in each set includes a tag and a state. The tag contains a reference to one of the cache lines in the data array. If the tag of a particular set matches the address received by the cache memory, then the cache line associated with that particular set is the requested cache line. The state of a particular set indicates the number of cache lines mapped into that particular set.