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(54) **Title:** UNSUPERVISED TEXT SUMMARIZATION WITH REINFORCEMENT LEARNING

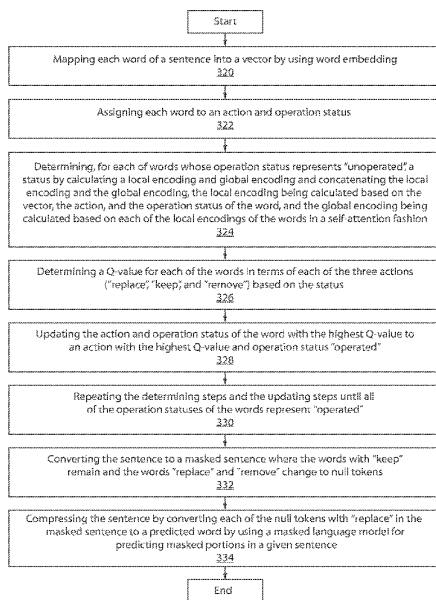


FIG. 5

(57) **Abstract:** A computer-implemented method is presented for performing Q-learning with language model for unsupervised text summarization. The method includes mapping each word of a sentence into a vector by using word embedding via a deep learning natural language processing model, assigning each of the words to an action and operation status, determining, for each of the words whose operation status represents "unoperated," a status by calculating a local encoding and a global encoding, and concatenating the local encoding and the global encoding, the local encoding calculated based on a vector, an action, and an operation status of the word, and the global encoding calculated based on each of the local encodings of the words in a self-attention fashion, and determining, via an editorial agent, a Q-value for each of the words in terms of each of three actions based on the status.

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