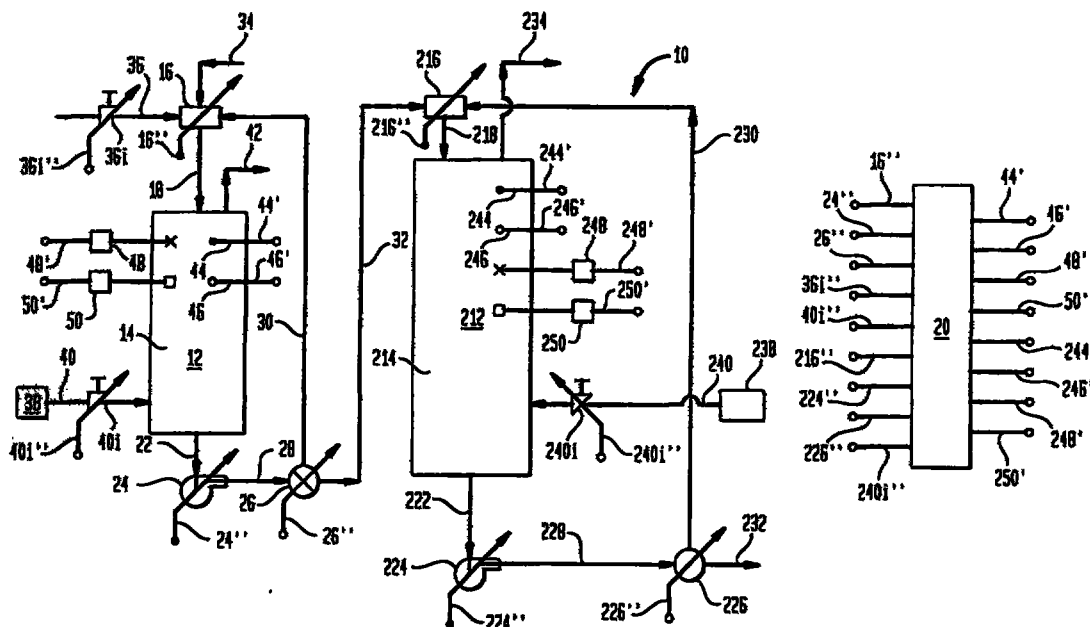




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(54) Title: METHODS AND DEVICES FOR CONTROLLING THE OXIDATION OF A HYDROCARBON TO AN ACID BY REGULATING HOLD-UP TIME IN MULTI-STAGE ARRANGEMENT



## (57) Abstract

Methods and devices for controlling the oxidation of a hydrocarbon to an acid by regulating the temperature, hold-up time, and conversion in consecutive reaction zones. The temperature in the consecutive reaction zones progressively decreases, while the hold-up time increases. Preferably, the conversion also increases. One of the major advantages of the methods and devices of the present invention is that an outstanding balance between productivity and selectivity/yield of the desired acid may be achieved. In this respect high yields and selectivities may be obtained without sacrificing productivity.