yttrium, cerium, lanthanum, praseodymium, neodymium, holmium, sodium, potassium, rubidium, cesium, beryllium, magnesium, calcium, strontium, barium, and copper.

According to this aspect, a combination of an optimal catalyst composition, a proper pretreatment or a holding amount of a catalyst, a suitable reaction condition, and the like is selected. In this manner, efficient conversion of not only carbon monoxide but also carbon dioxide into a hydrocarbon can be achieved.

In one aspect, there is provided a hydrocarbon production method for supplying a raw material gas into a reaction vessel having a reaction catalyst to produce a hydrocarbon by a Fischer-Tropsch synthesis reaction, wherein the raw material gas contains carbon dioxide, and the reaction catalyst contains at least one element selected from the group consisting of sodium, potassium, rubidium, and cesium.

In another aspect, the present disclosure provides a hydrocarbon production method for supplying a raw material gas into a reaction vessel having a reaction catalyst to produce a hydrocarbon by a Fischer-Tropsch synthesis reaction, wherein the raw material gas contains carbon dioxide, and the reaction catalyst contains copper.

In yet another aspect, the present disclosure provides a hydrocarbon production method for supplying a raw

material gas into a reaction vessel having a reaction catalyst to produce a hydrocarbon by a Fischer-Tropsch synthesis reaction, wherein the raw material gas contains carbon dioxide, and the reaction catalyst contains at least one element selected from the group consisting of beryllium, magnesium, calcium, strontium, and barium.

Advantageous Effects of Invention

[0015]

According to the present invention, it is possible to provide a production apparatus including an FT reaction catalyst which can efficiently convert carbon dioxide into a hydrocarbon in an FT reaction of a raw material gas containing carbon dioxide.

Brief Description of Drawings

[0016]

Fig. 1 is a schematic view for describing a hydrocarbon production apparatus of the present invention.

Fig. 2 is a graph showing an experimental result of an example.

Fig. 3 is a schematic view for describing a fixed bed