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(54) Title: INTEGRATED HYDROTREATING AND STEAM PYROLYSIS PROCESS INCLUDING HYDROGEN REDISTRI-
BUTION FOR DIRECT PROCESSING OF A CRUDE OIL

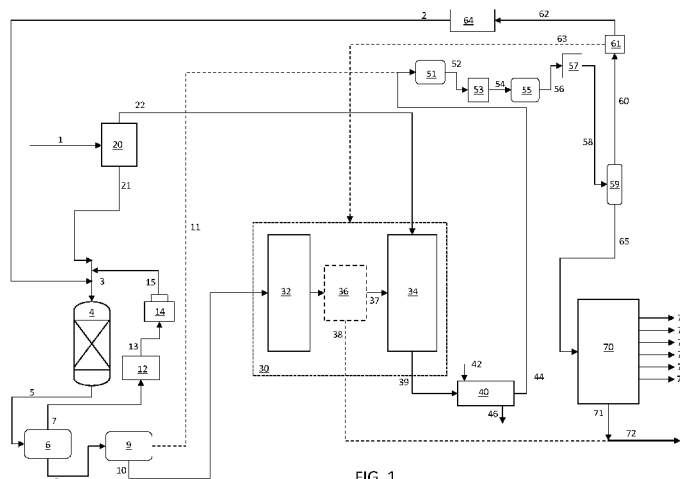


FIG. 1

(57) Abstract: A process is provided that is directed to a steam pyrolysis zone integrated with a hydroprocessing zone including hy-
drogen redistribution to permit direct processing of crude oil feedstocks to produce petrochemicals including olefins and aromatics.
The integrated hydrotreating and steam pyrolysis process for the direct processing of a crude oil to produce olefinic and aromatic
petrochemicals process comprises separating the crude oil into light components and heavy components; charging the heavy com-
ponents and hydrogen to a hydroprocessing zone operating under conditions effective to produce a hydroprocessed effluent having a
reduced content of contaminants, an increased paraffinicity, reduced Bureau of Mines Correlation Index, and an increased American
Petroleum Institute gravity; charging the hydroprocessed effluent and steam to a convection section of a steam pyrolysis zone; d.
heating the mixture from the convection section of a steam pyrolysis zone and passing it to a vapor- liquid separation section; re-
moving from the steam pyrolysis zone a residual portion from the vapor-liquid separation section; charging light components from
the initial separation step, a light portion from the vapor-liquid separation section, and steam to a pyrolysis section of the steam
pyrolysis zone; recovering a mixed product stream from the steam pyrolysis zone; separating the mixed product stream; purifying hy-
drogen recovered from the mixed product stream and recycling it to the hydroprocessing zone; and recovering olefins and aromatics
from the separated mixed product stream.



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