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Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

- (54) **Title:** TAR FREE CROSS FLOW GASIFICATION SYSTEM FOR MOISTURE CONTAINING FEED

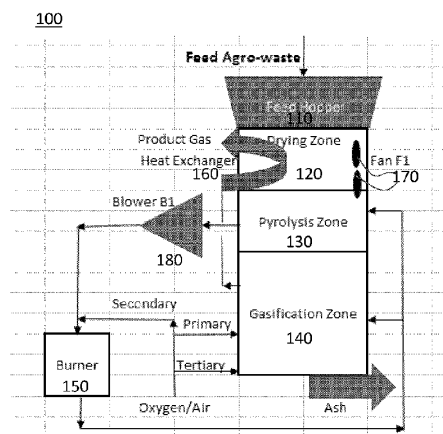


FIG.2

(57) **Abstract:** The present disclosure relates to a modified gasification system (100) for producing syngas from waste materials having moisture content. The gasification system (100) has crossflow arrangement for circulation of gases across the solids present and has well-defined drying (120), pyrolysis (130) and gasification zones (140). A burner (150) of the gasification system (100) situated downstream of the pyrolysis zone (130) is configured to receive the pyrolysis product and a secondary oxidizer to produce a burner output gas and to supply the burner output gas to the pyrolysis zone (130) and gasification zone (140). The gasification zone (140) is additionally configured to receive a primary oxidizer gas and a tertiary oxidizer gas to aid gasification. The present disclosure overcomes limitation of the prior-arts and provides means of isolating the drying, pyrolysis, and gasification zones and eliminates tar formation during gasification. The gasification system (100) disclosed herein is a fully scalable equipment.

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