

CARBON DIOXIDE SEQUESTRATION INVOLVING TWO-SALT-BASED THERMOLYTIC PROCESSES

ABSTRACT

5 The present invention relates to an energy efficient carbon dioxide sequestration processes whereby calcium silicate minerals and CO₂ are converted into limestone and sand using a two-salt thermolytic process that allows for the cycling of heat and chemicals from one step to another.

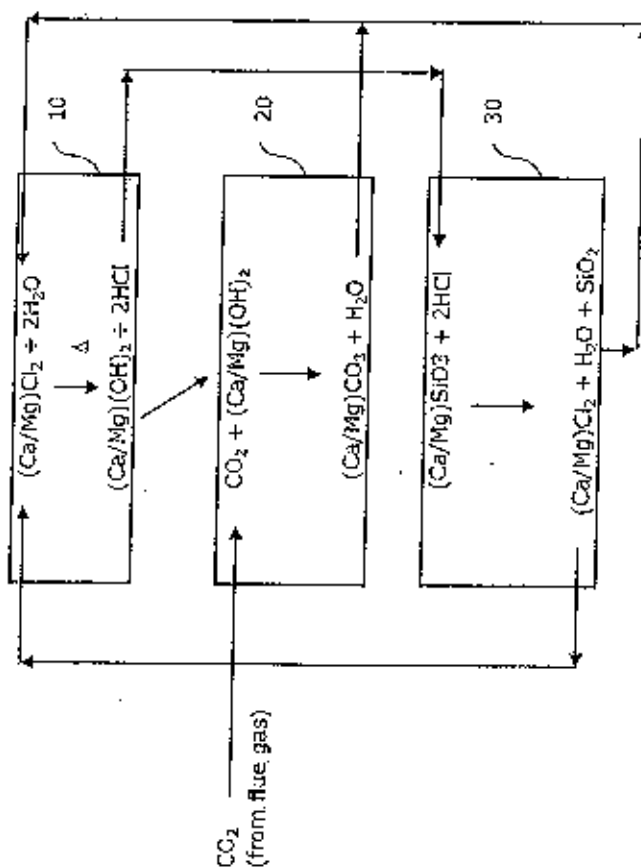


FIG. 1

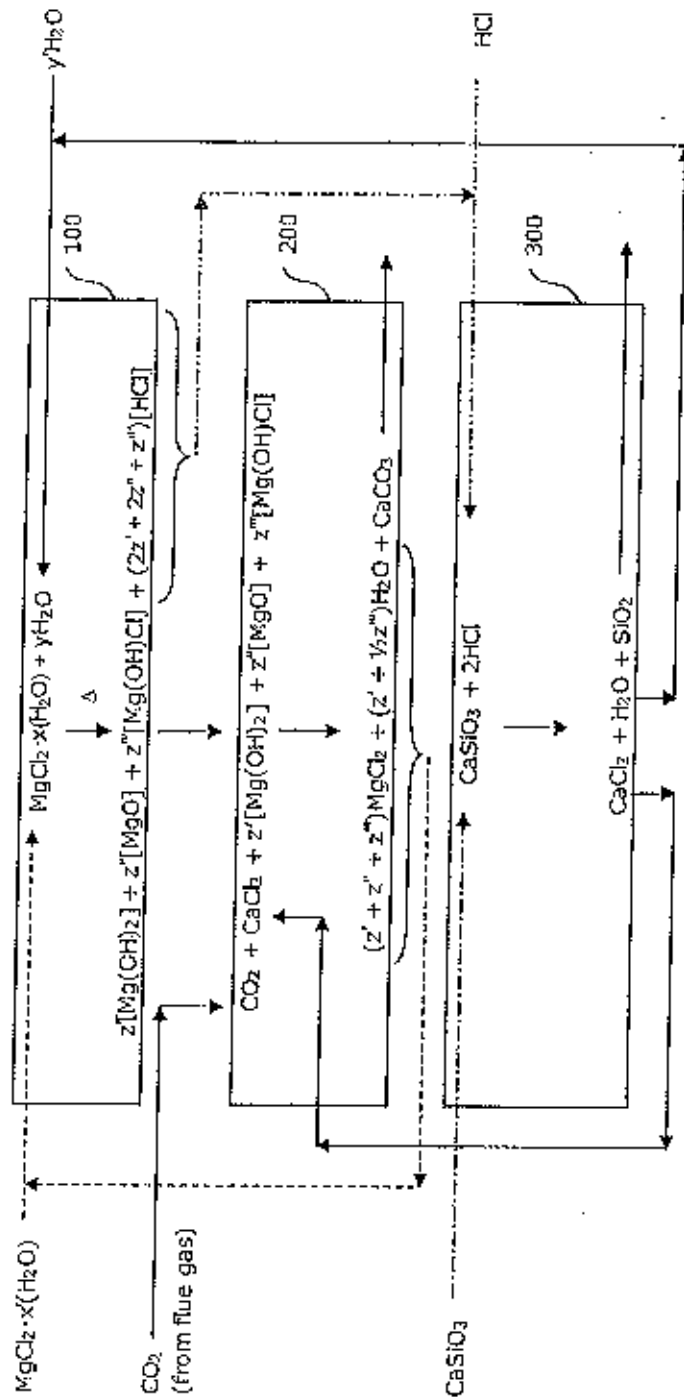


FIG. 2

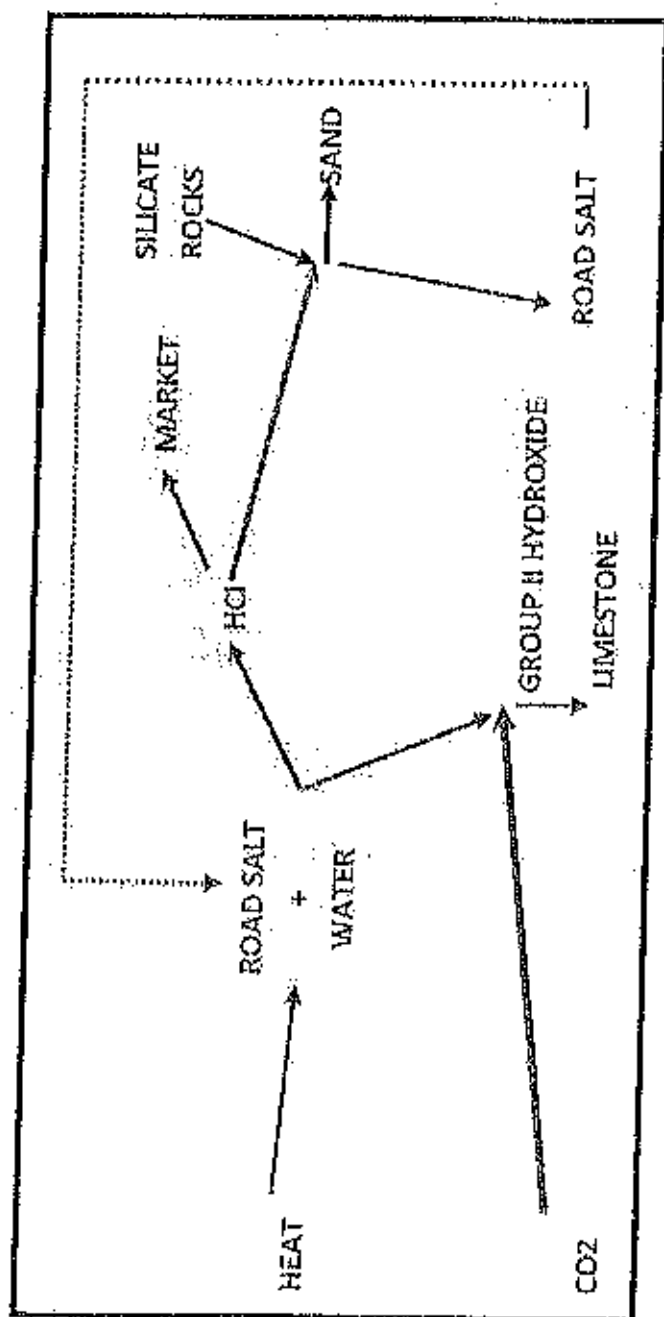


FIG. 3

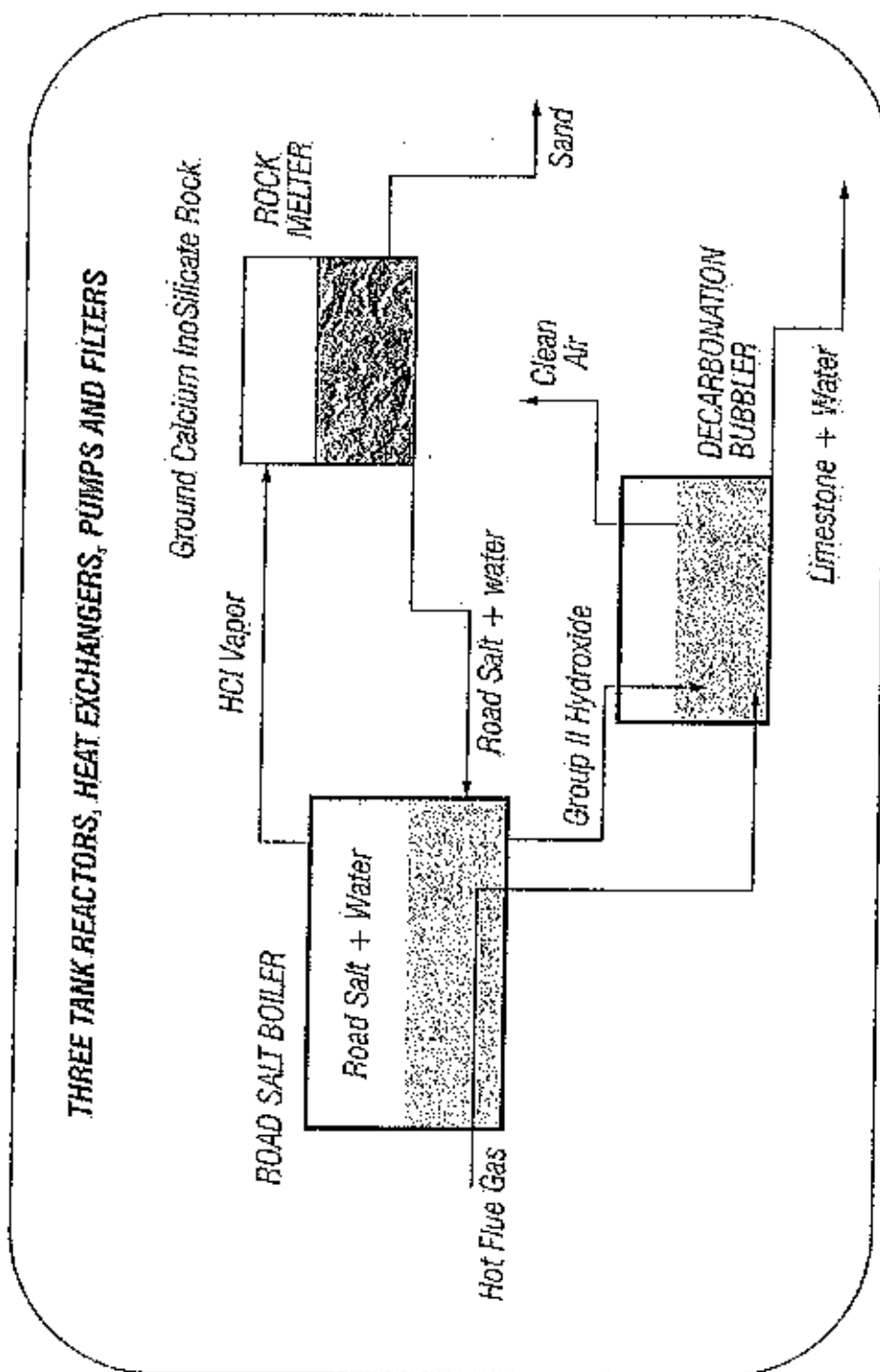
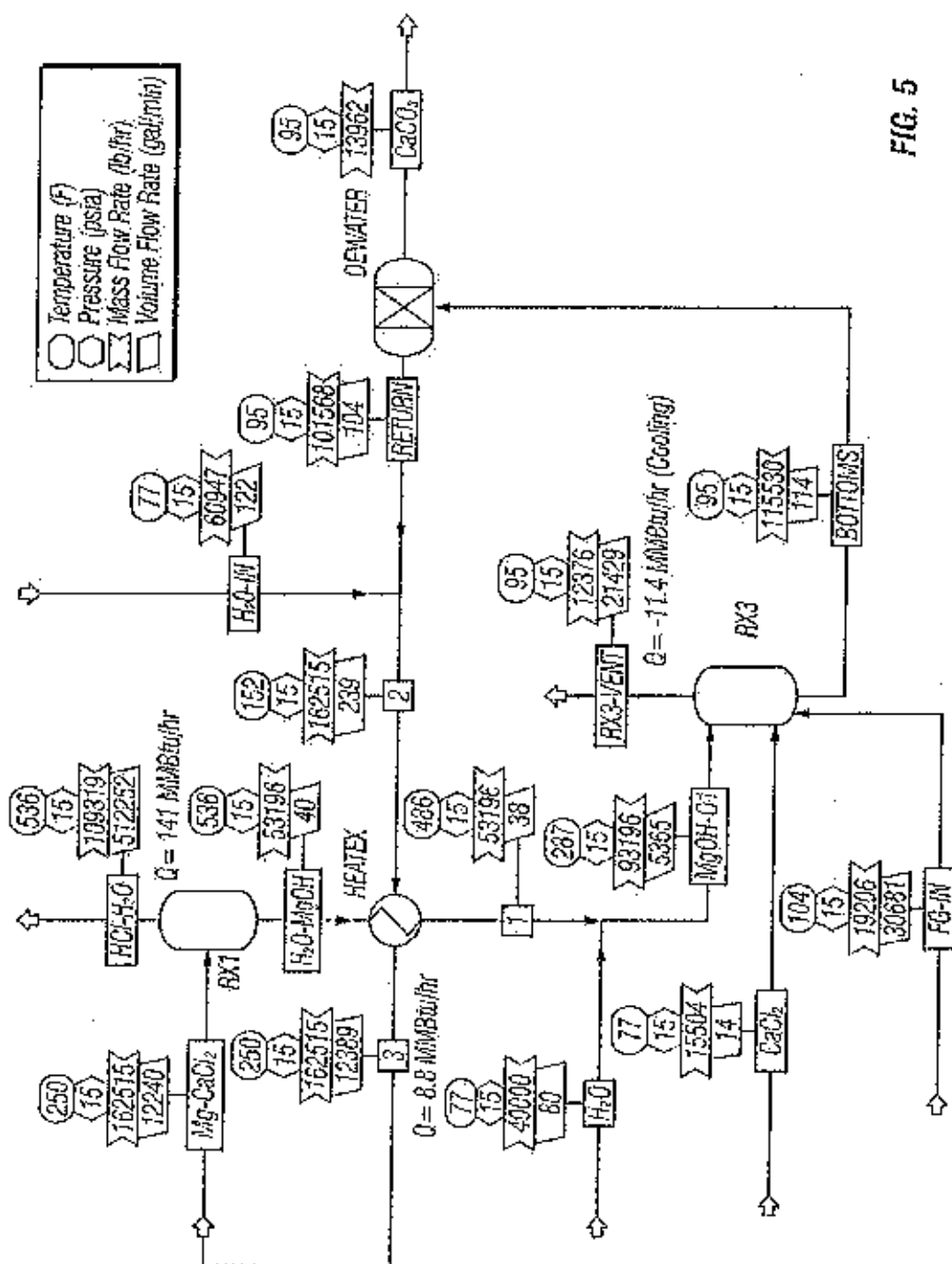


FIG. 4



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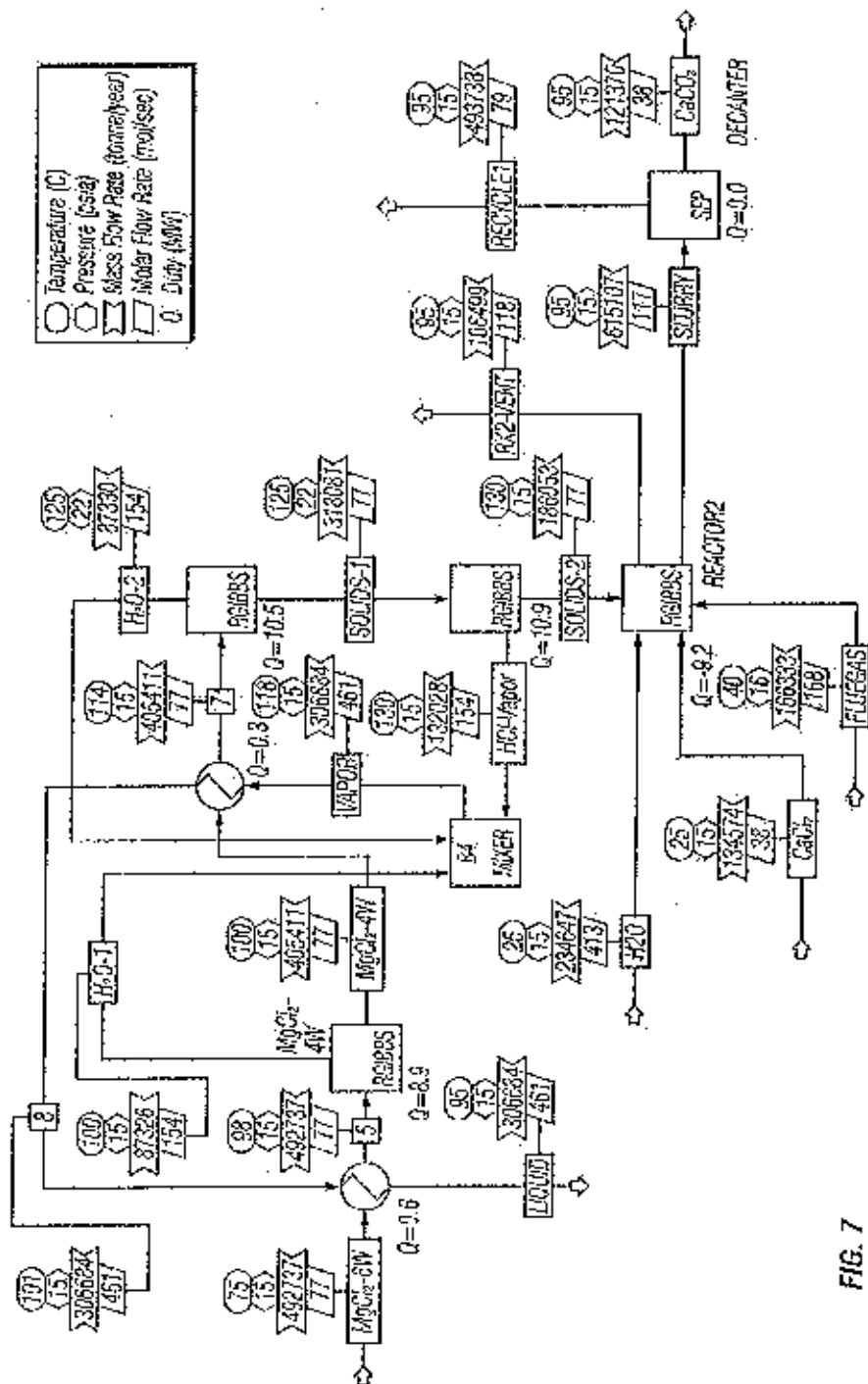


FIG. 7

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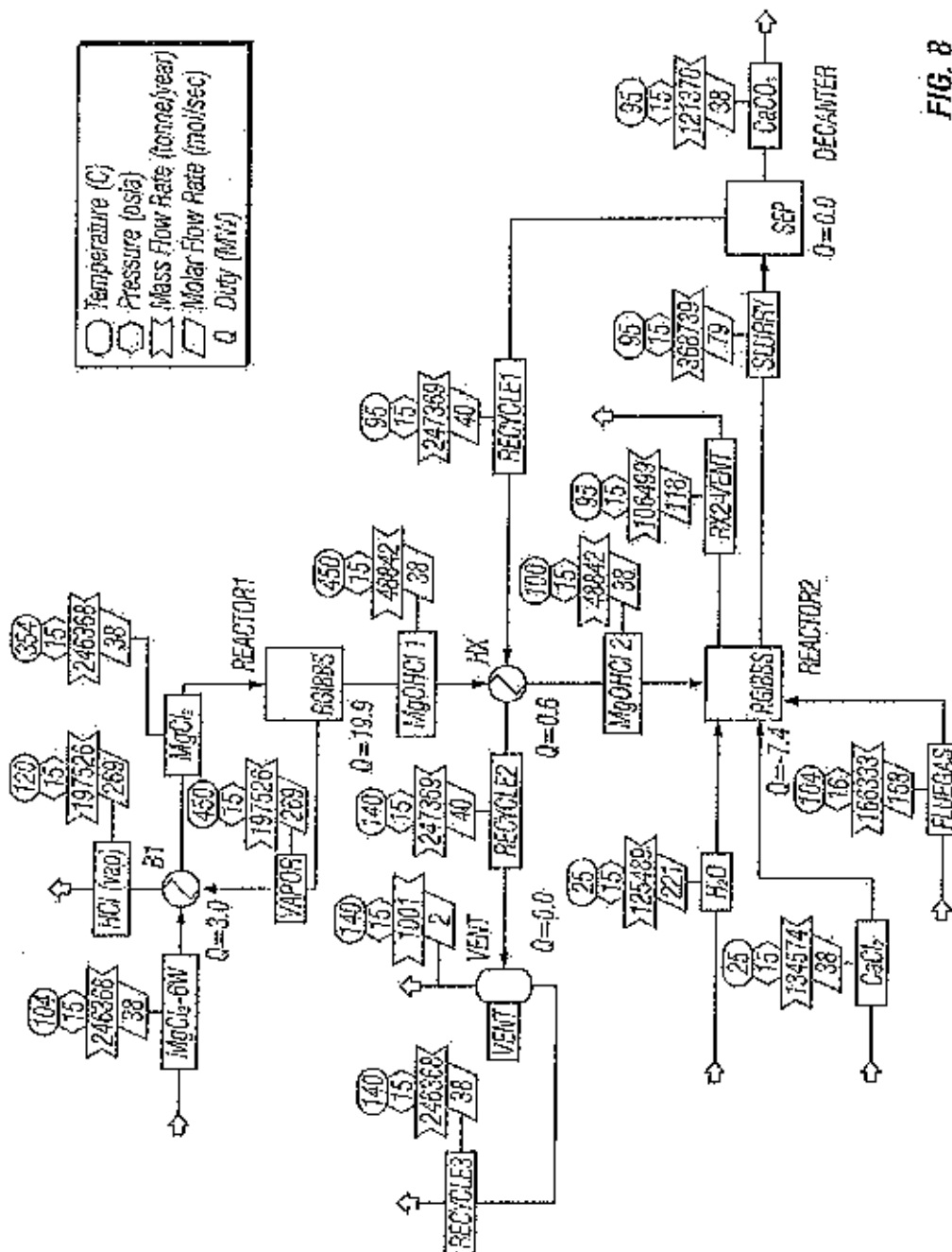


FIG. 8

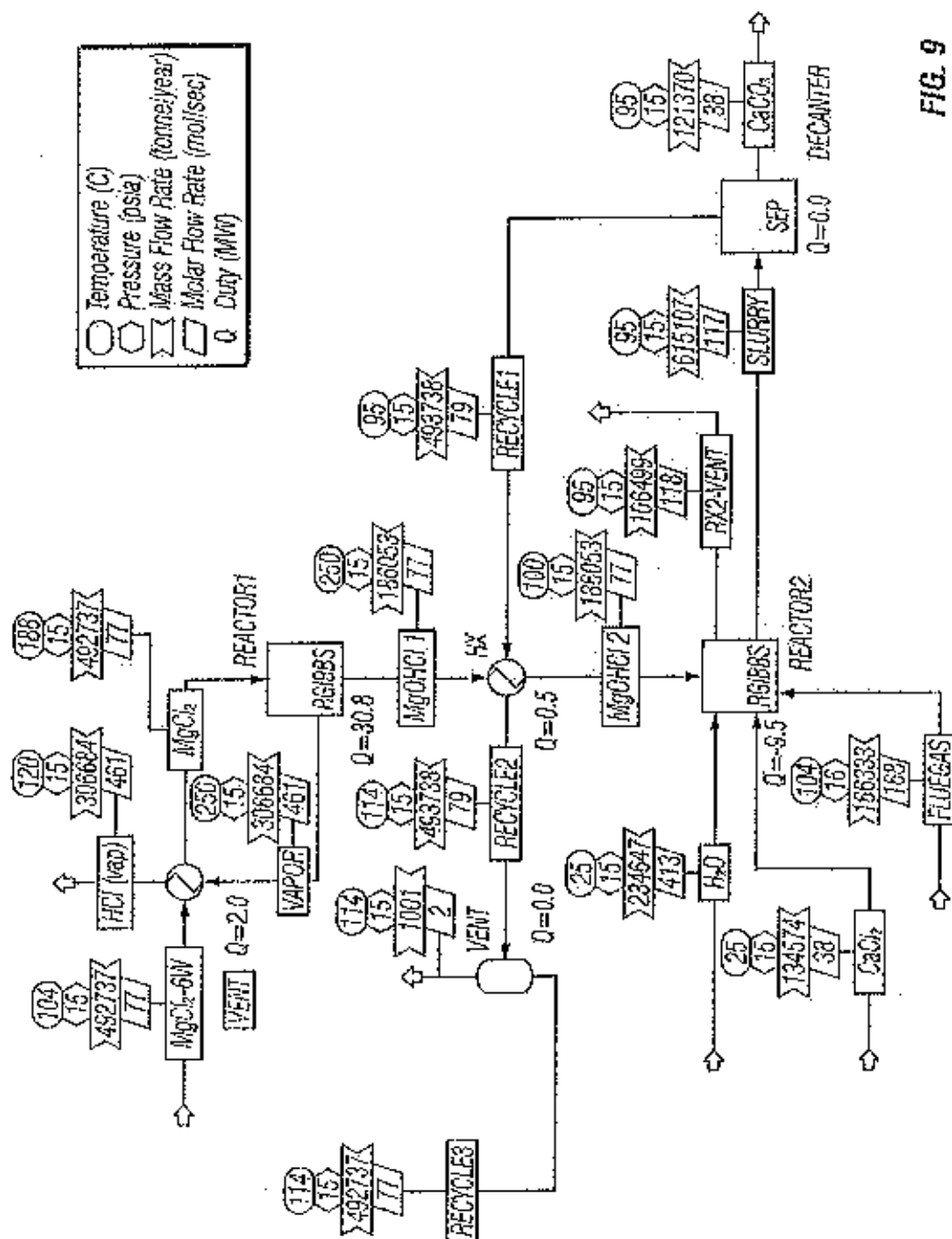


FIG. 9

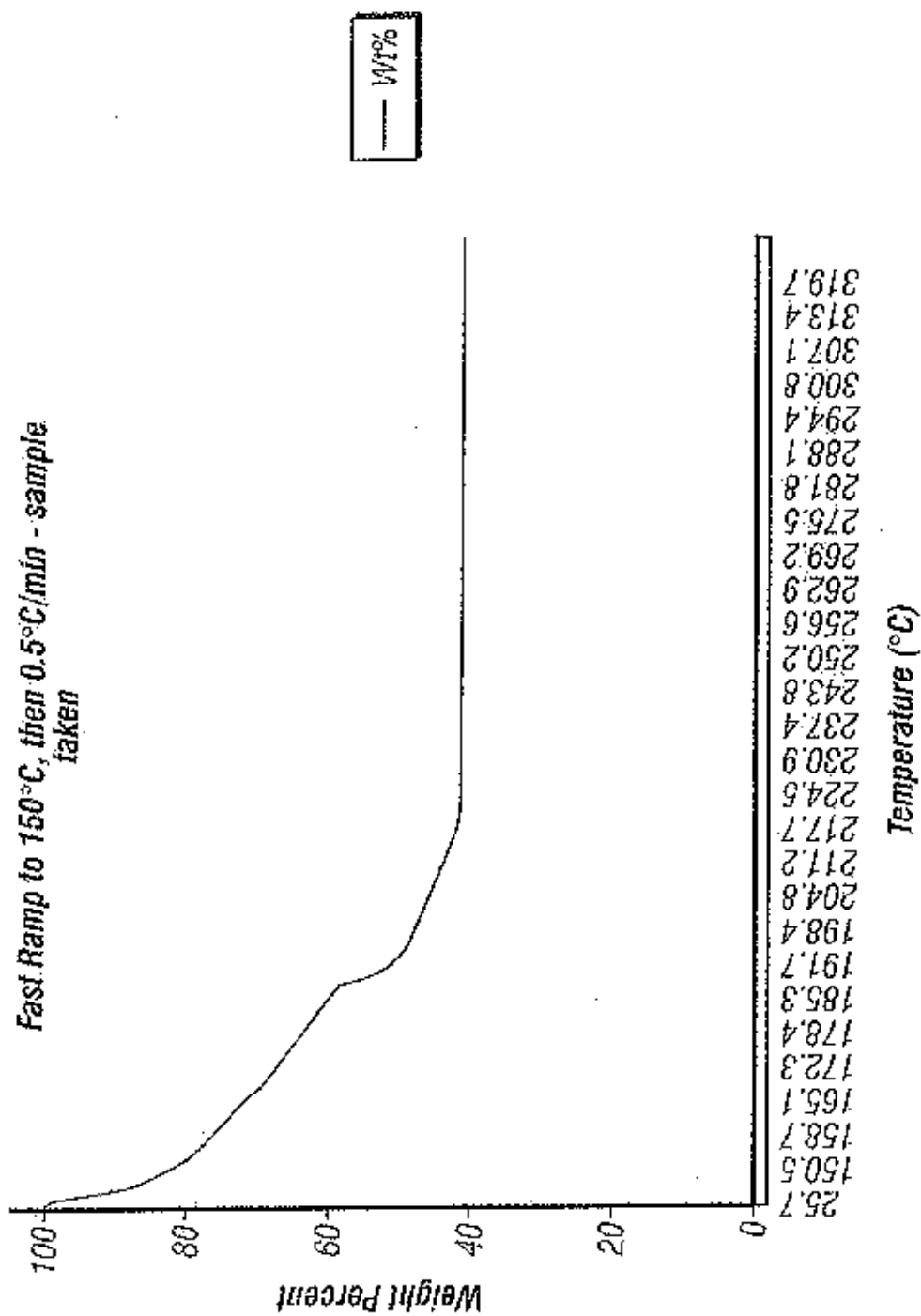


FIG. 10

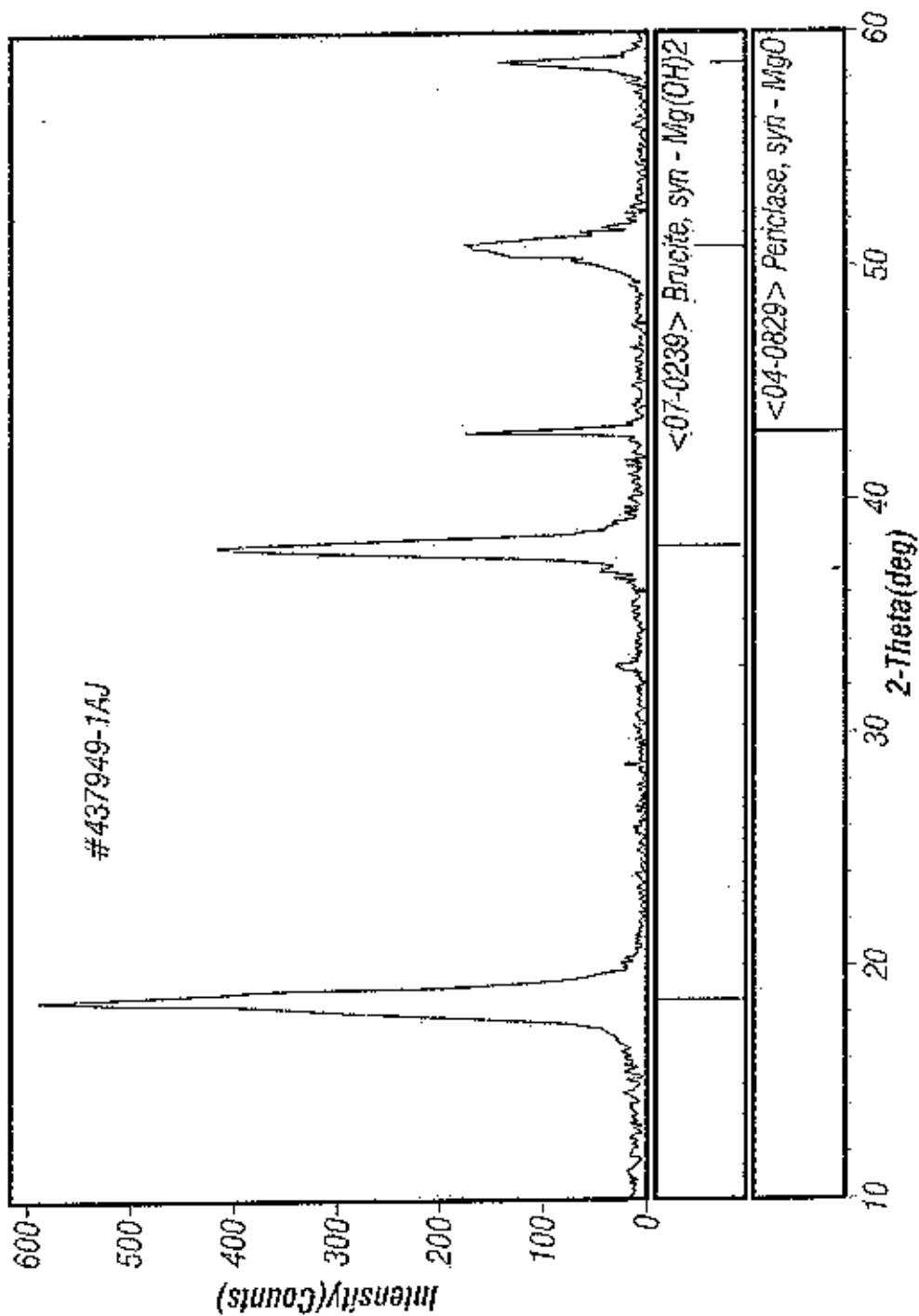


FIG. 11

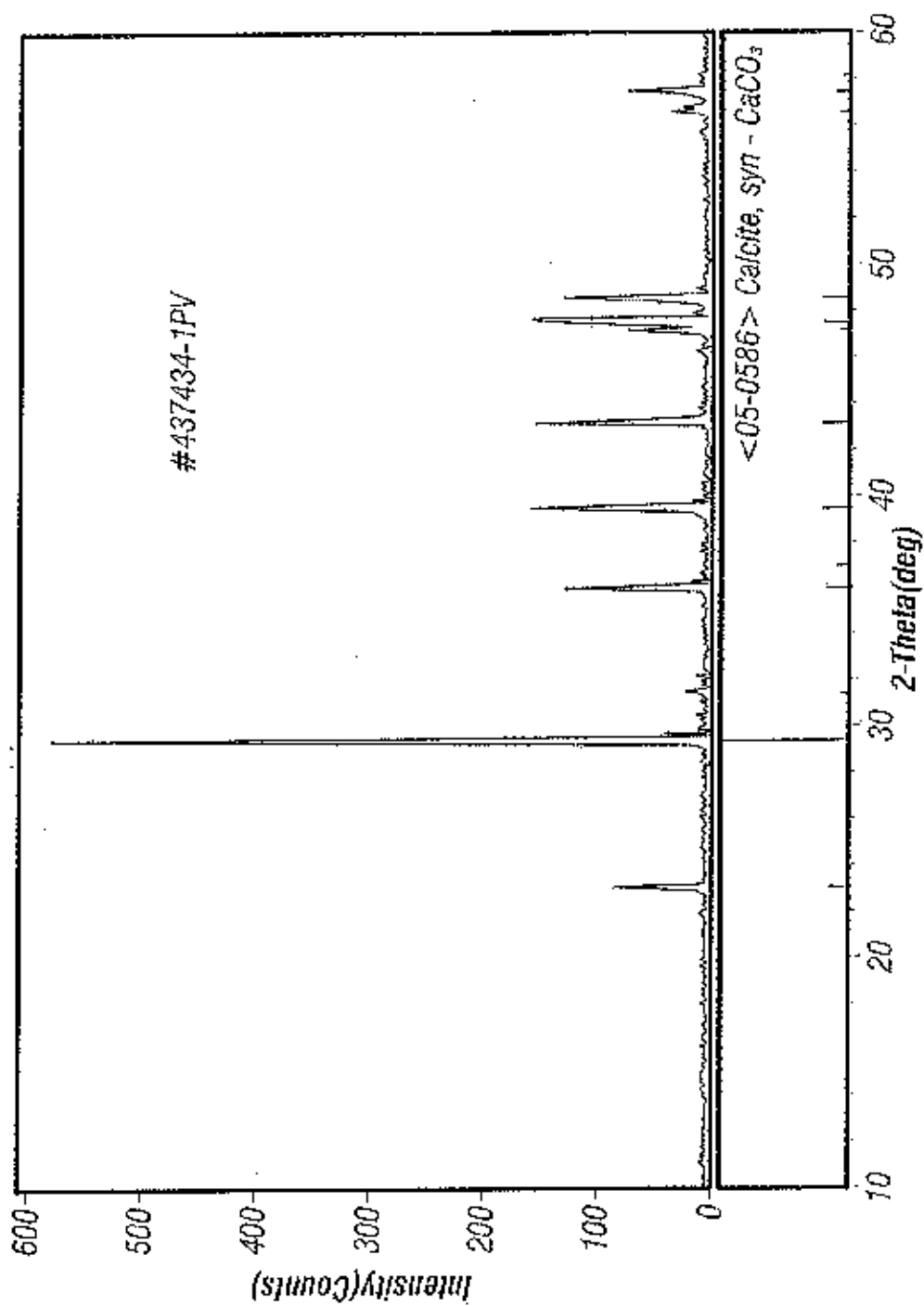


FIG. 12

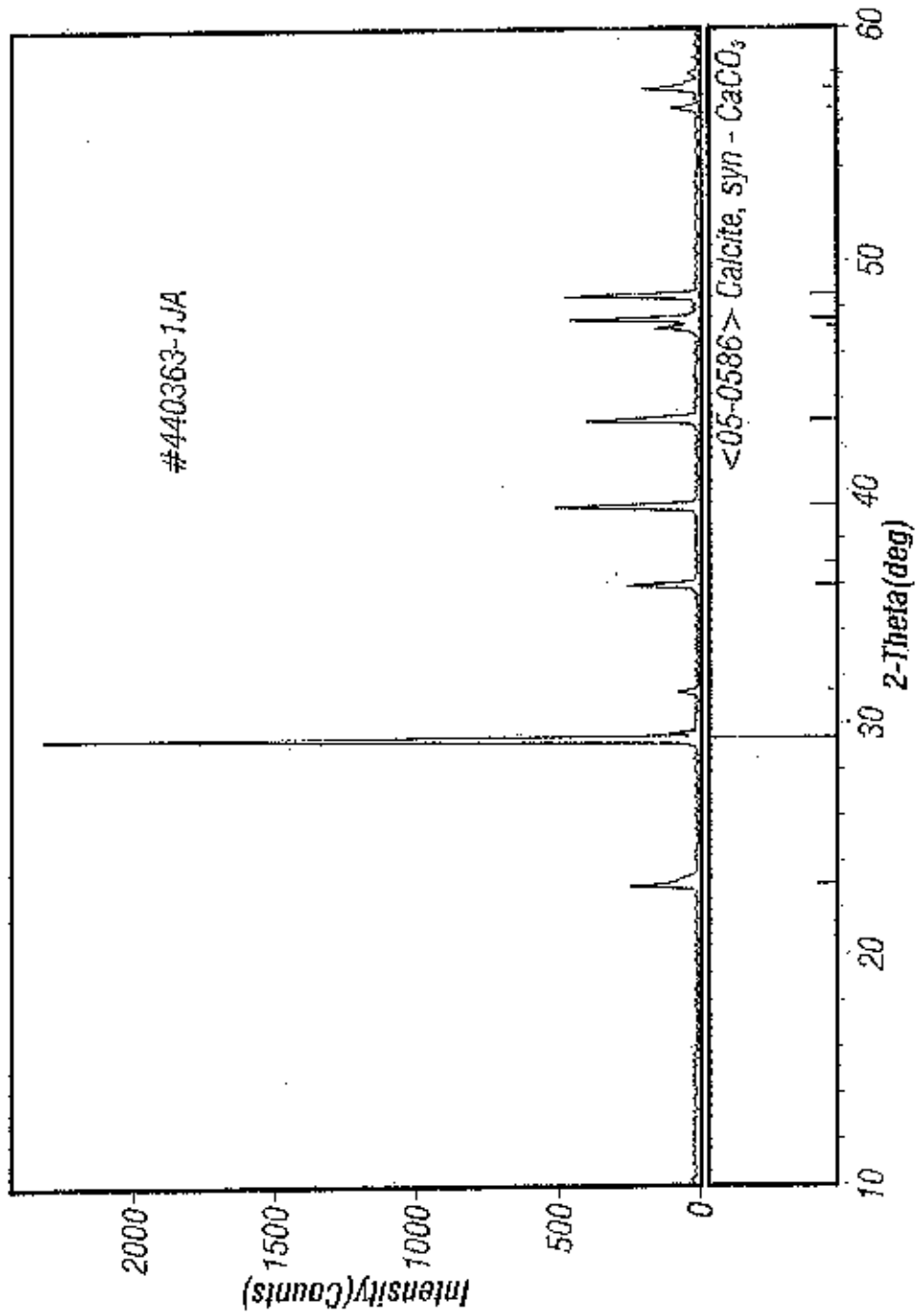


FIG. 13

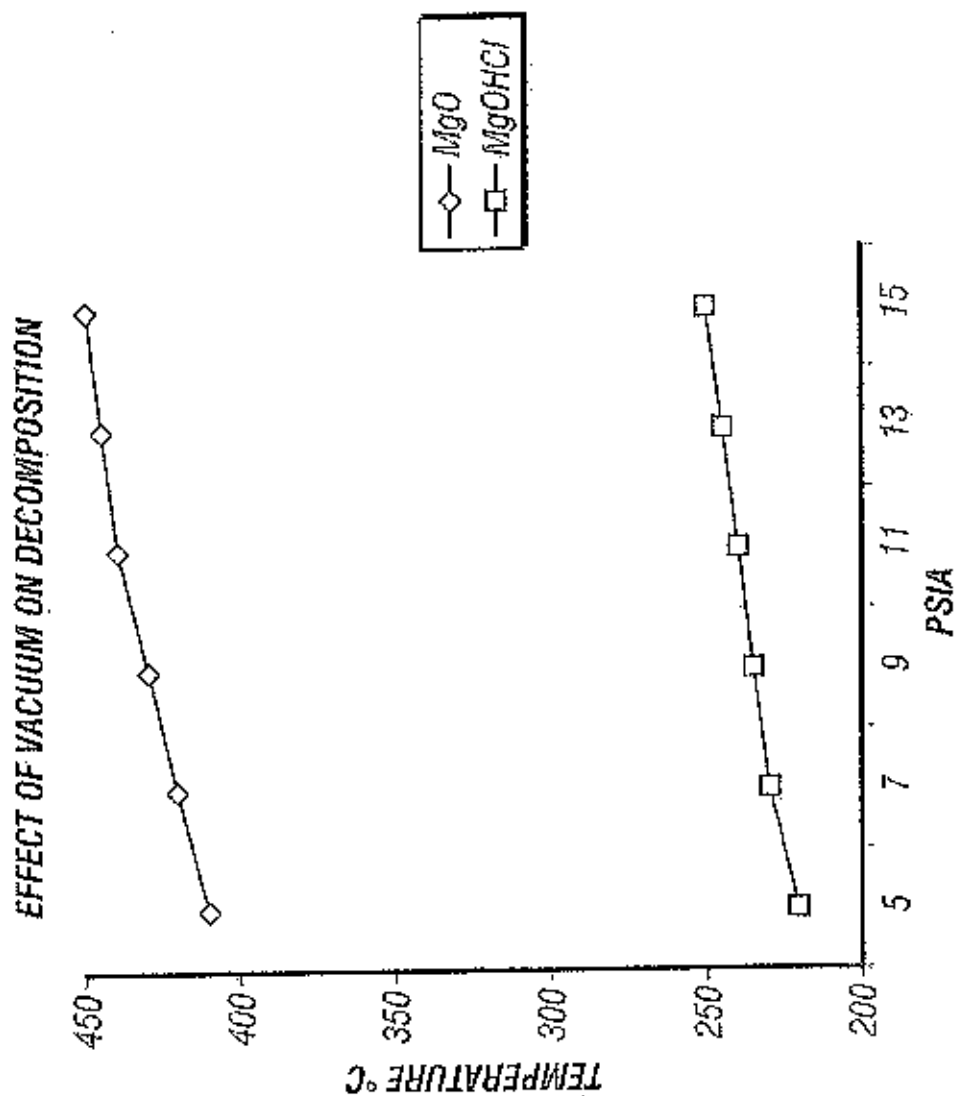


FIG. 14

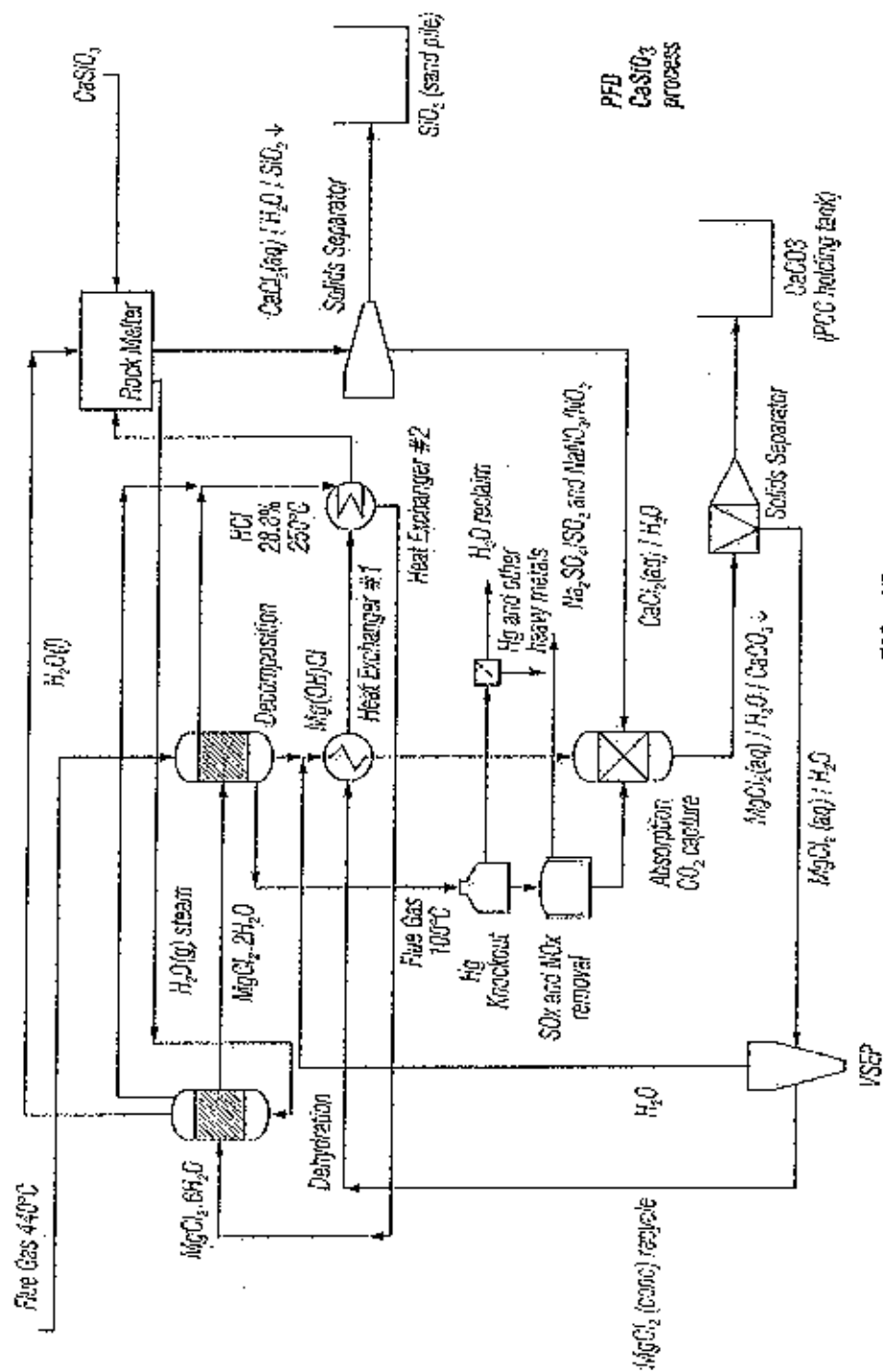
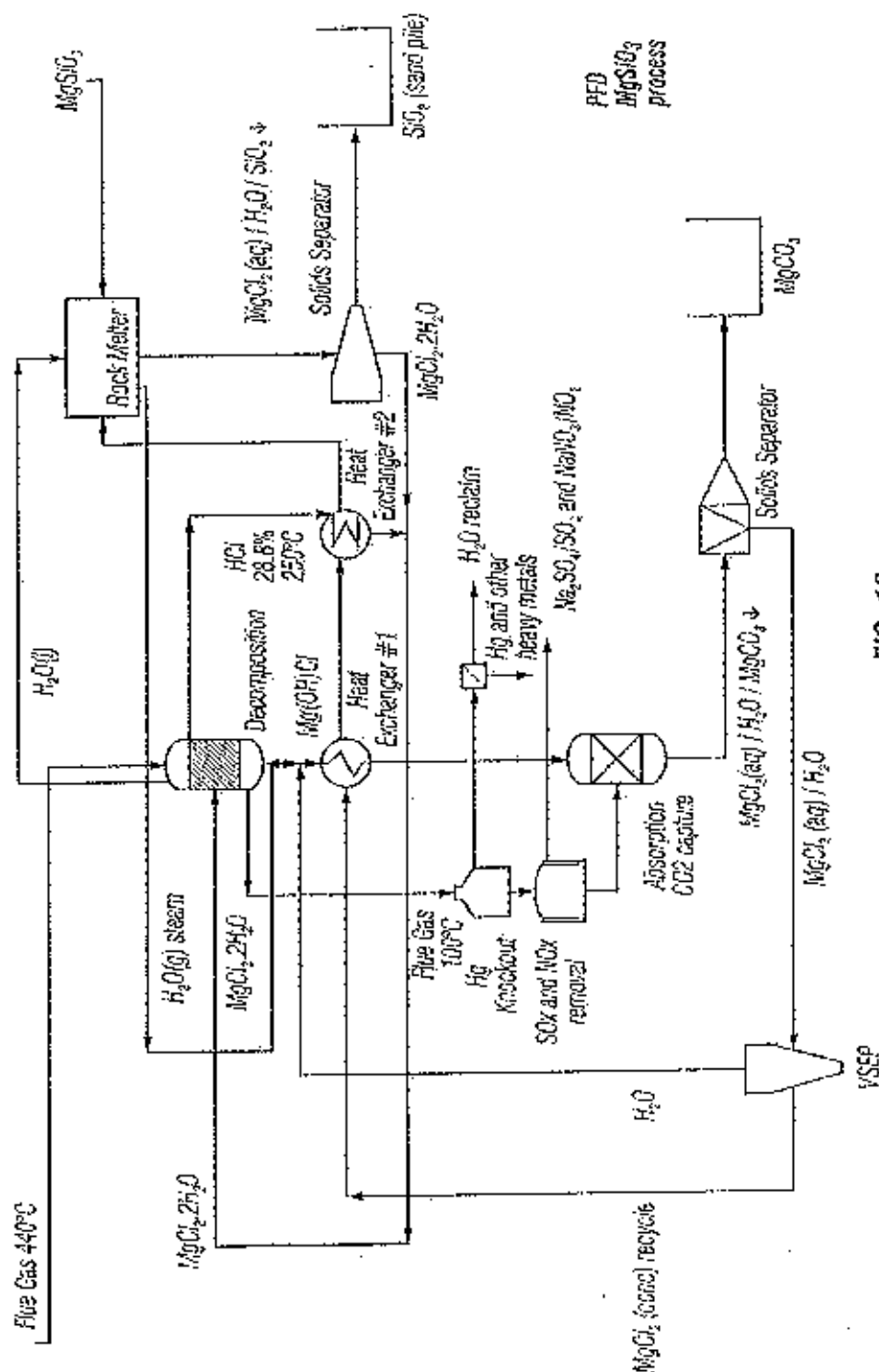
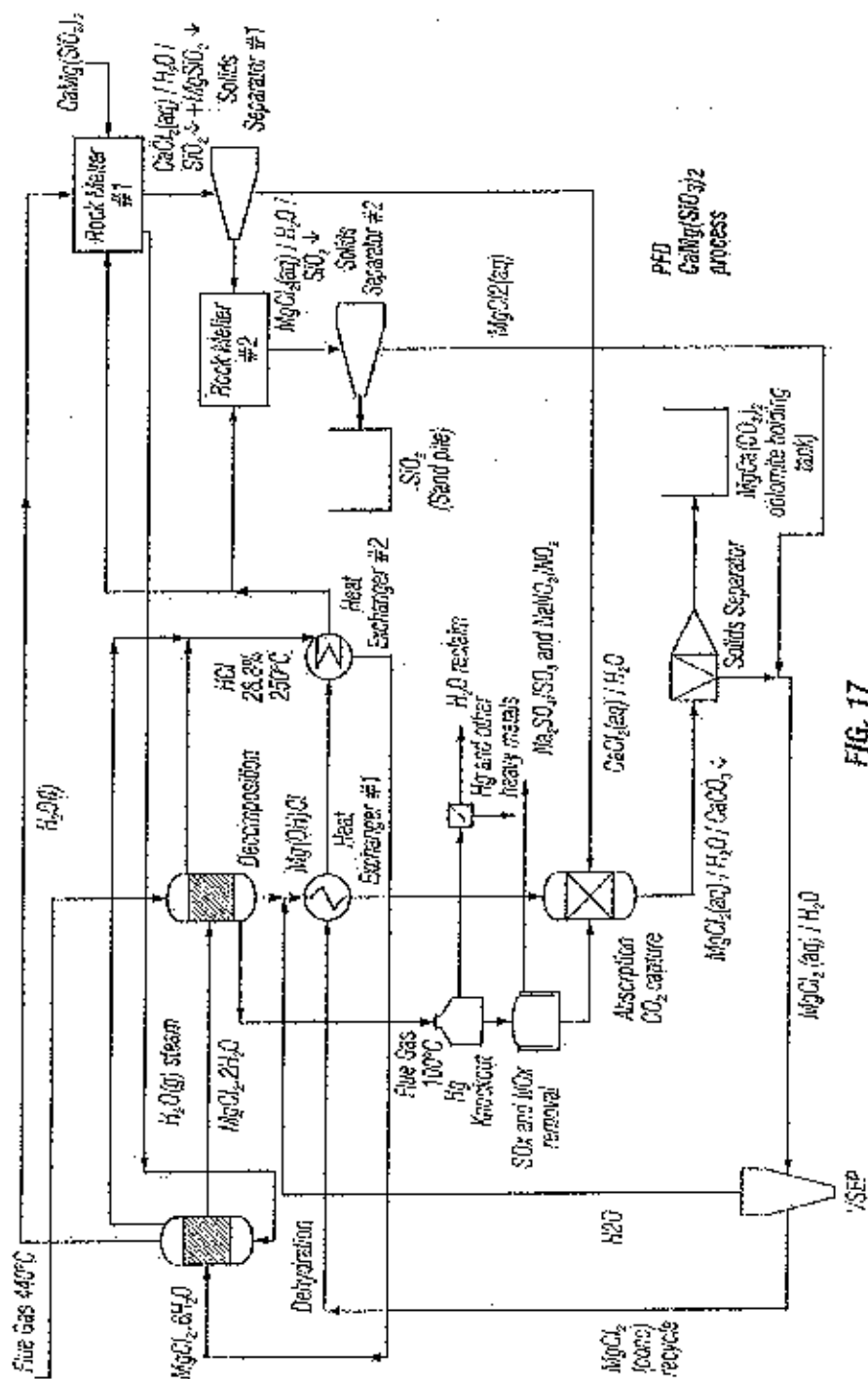


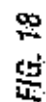
FIG. 15



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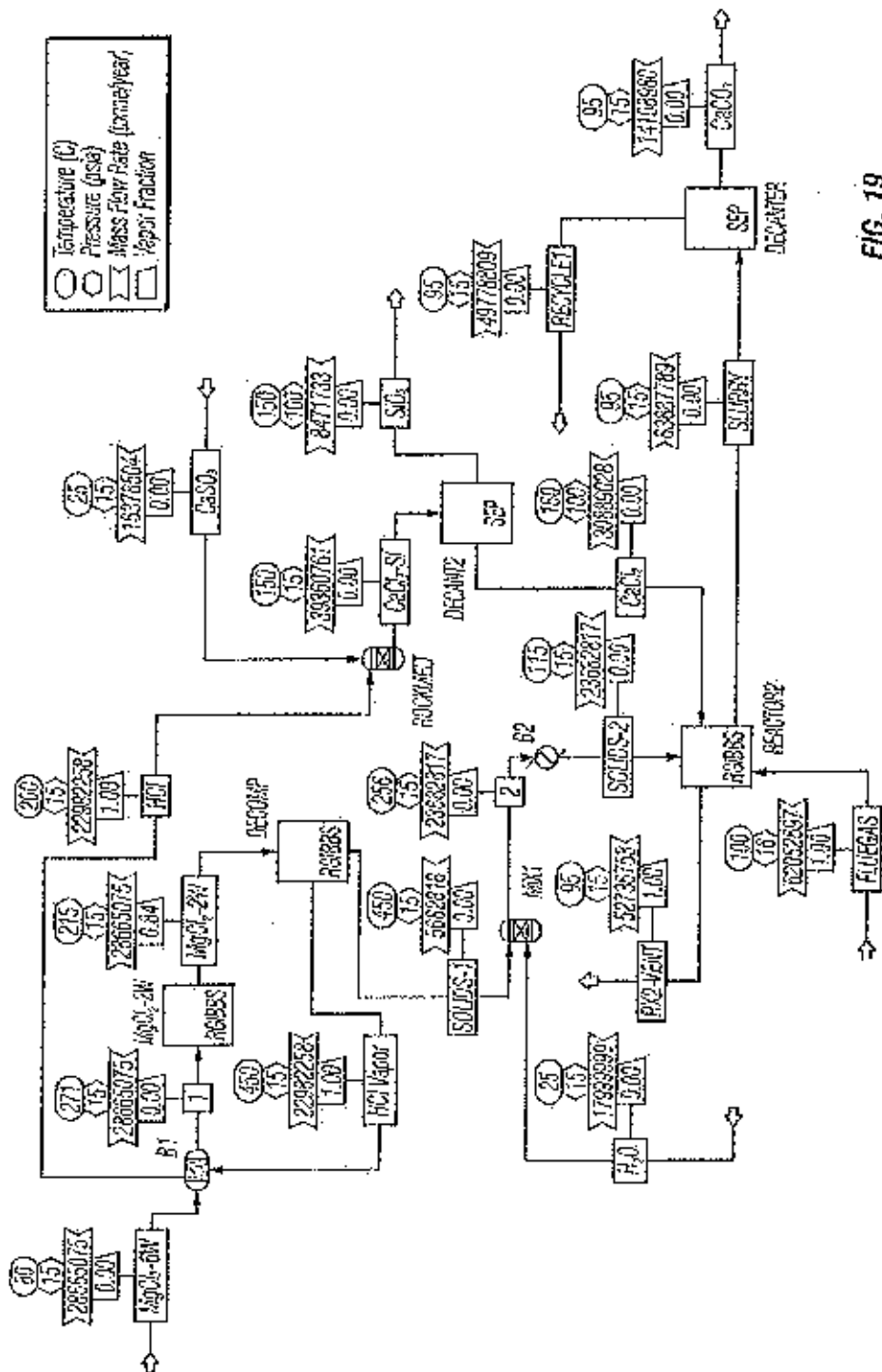
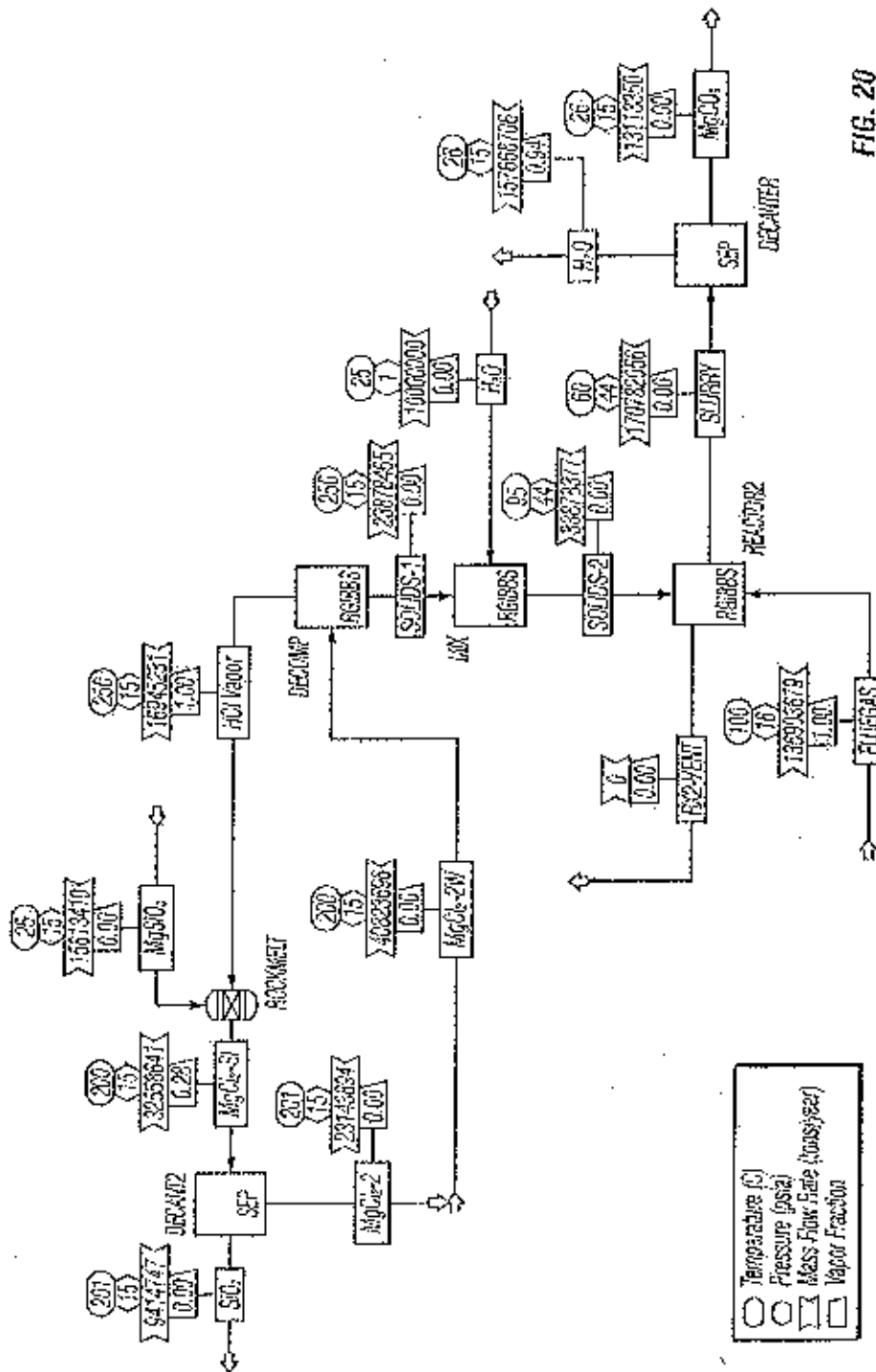
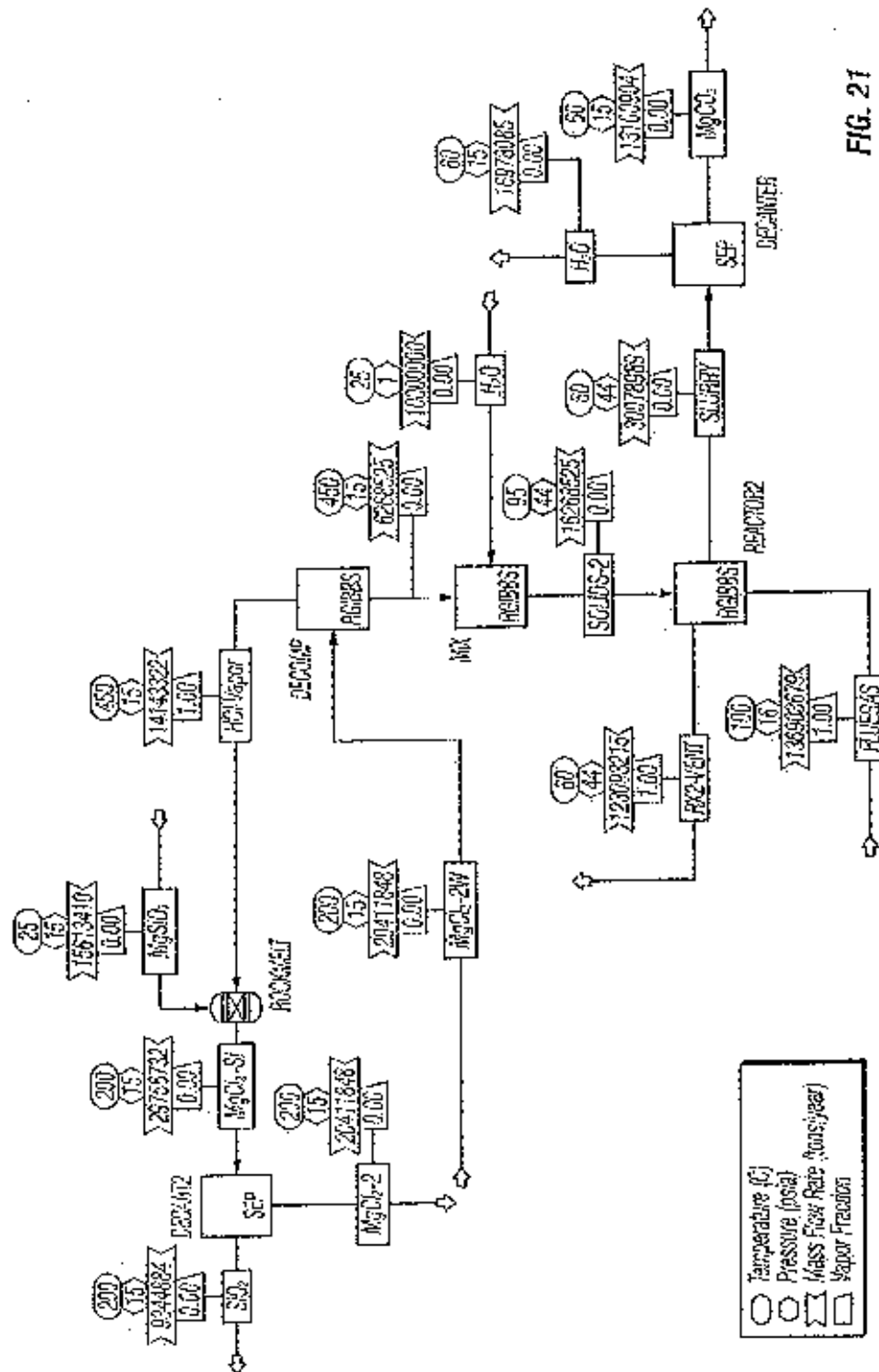
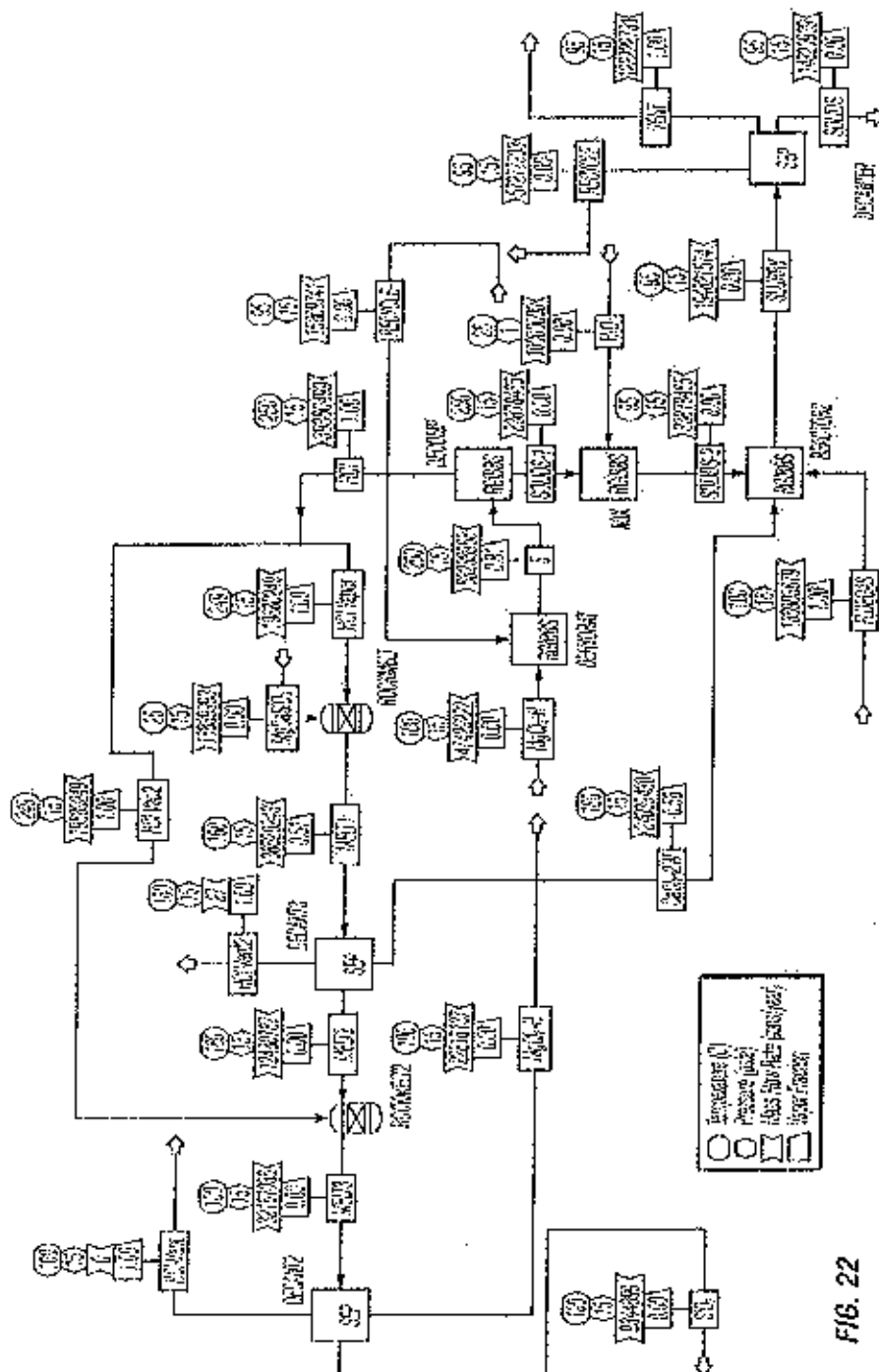


FIG. 19







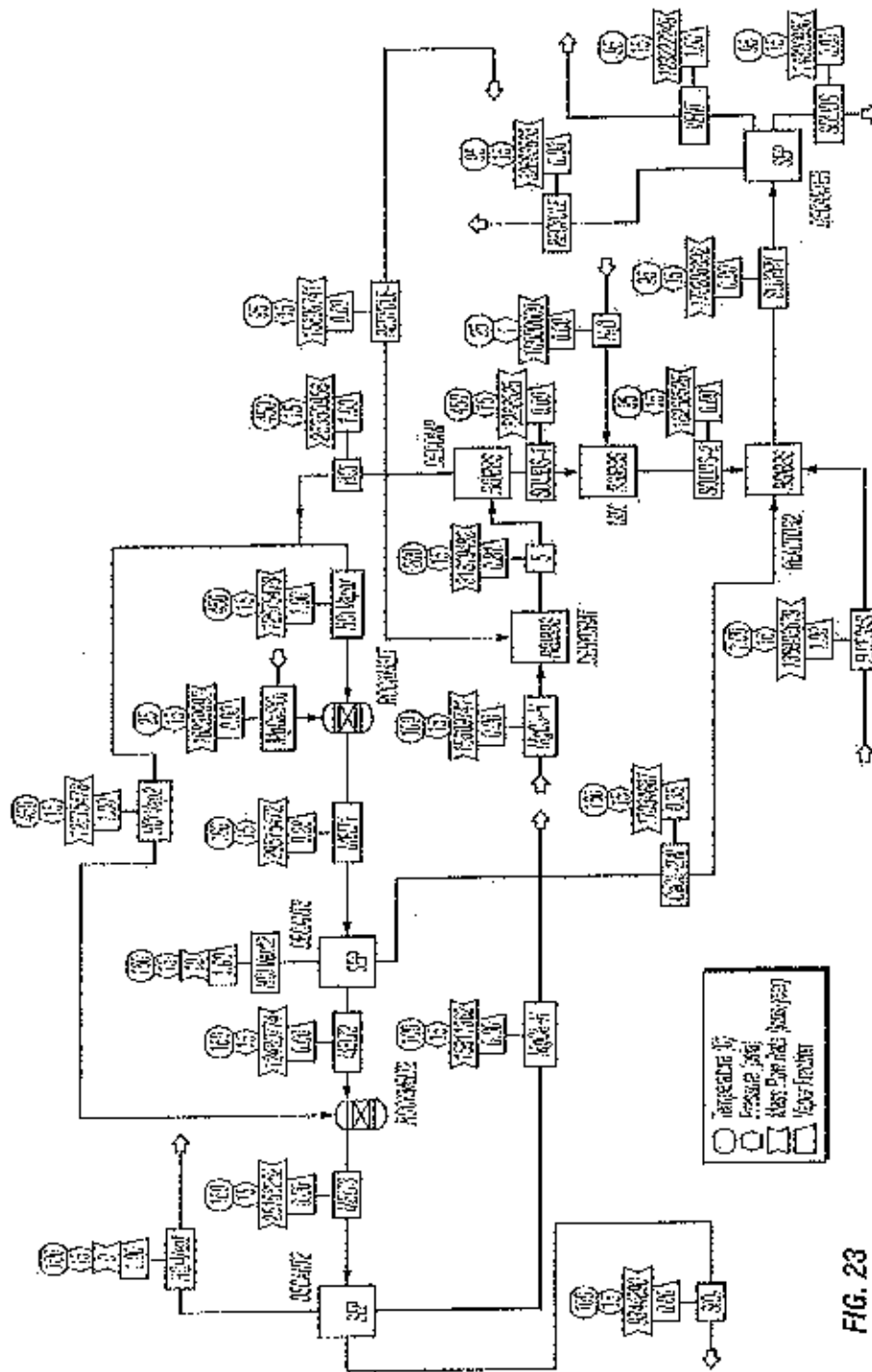


FIG. 23

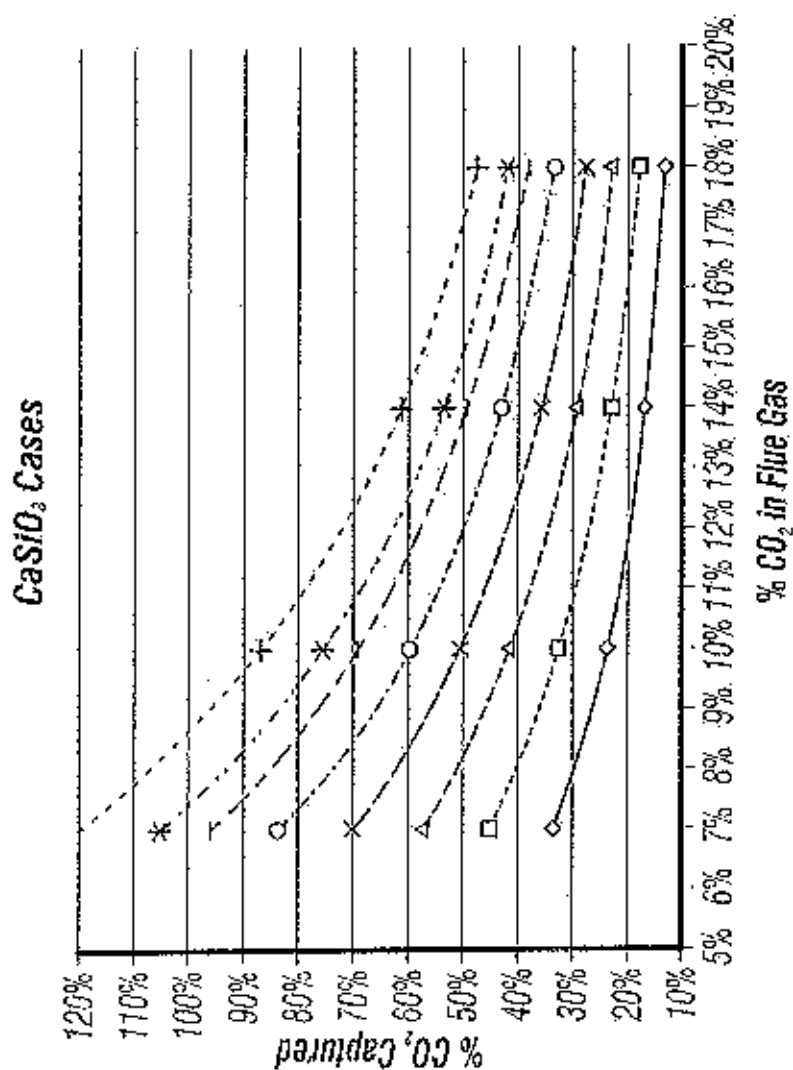
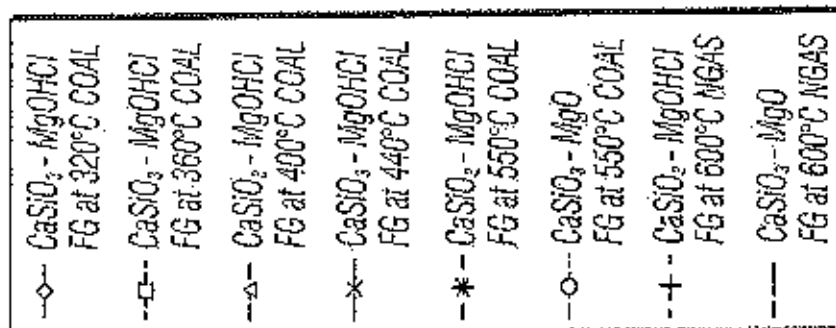


FIG. 24

—◇—	MgSiO ₃ - MgOHCl FG at 320°C COAL
- - □ - -	MgSiO ₃ - MgOHCl FG at 350°C COAL
- - △ - -	MgSiO ₃ - MgOHCl FG at 400°C COAL
- - × - -	MgSiO ₃ - MgOHCl FG at 440°C COAL
- - * - -	MgSiO ₃ - MgOHCl FG at 550°C COAL
- - ○ - -	MgSiO ₃ - MgO FG at 550°C COAL
- - + - -	MgSiO ₃ - MgO FG at 600°C NGAS
—	MgSiO ₃ - MgOHCl FG at 600°C NGAS

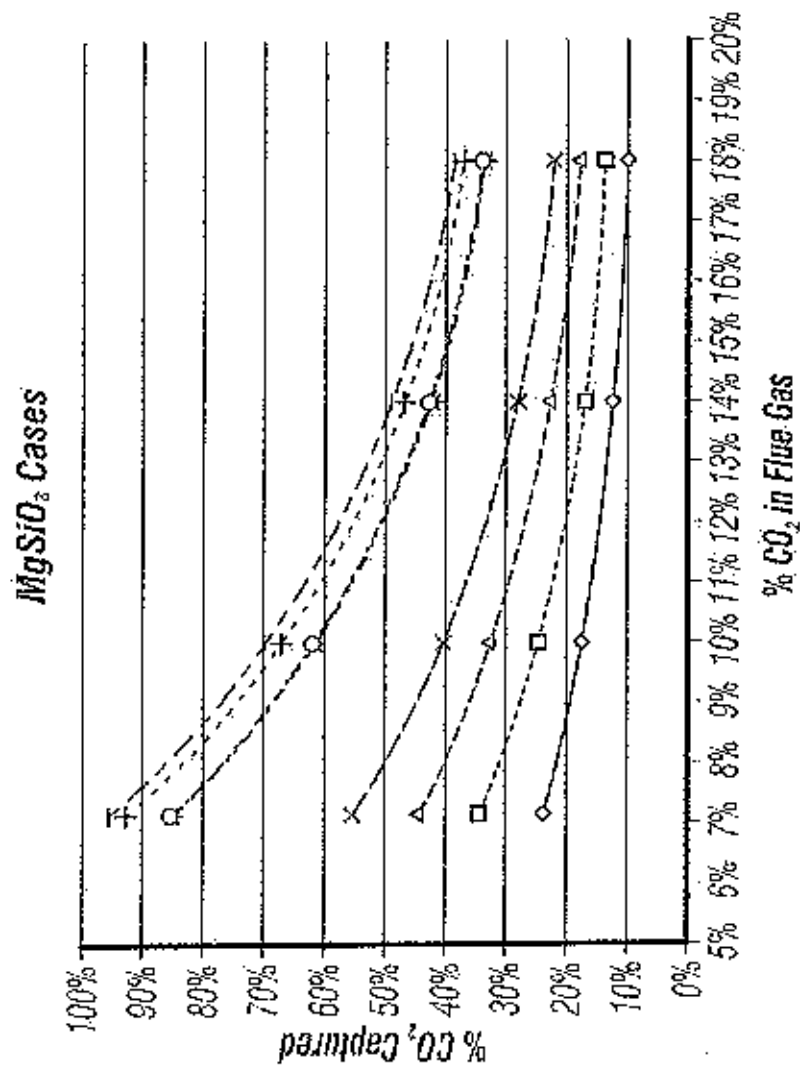


FIG. 25

—◇—	Diopside - MgOHCl FG at 320°C COAL
—□—	Diopside - MgOHCl FG at 360°C COAL
—△—	Diopside - MgOHCl FG at 400°C COAL
—×—	Diopside - MgOHCl FG at 440°C COAL
—*—	Diopside - MgOHCl FG at 550°C COAL
—○—	Diopside - MgO FG at 550°C COAL
—+—	Diopside - MgOHCl FG at 600°C NGAS
— — —	Diopside - MgO FG at 600°C NGAS

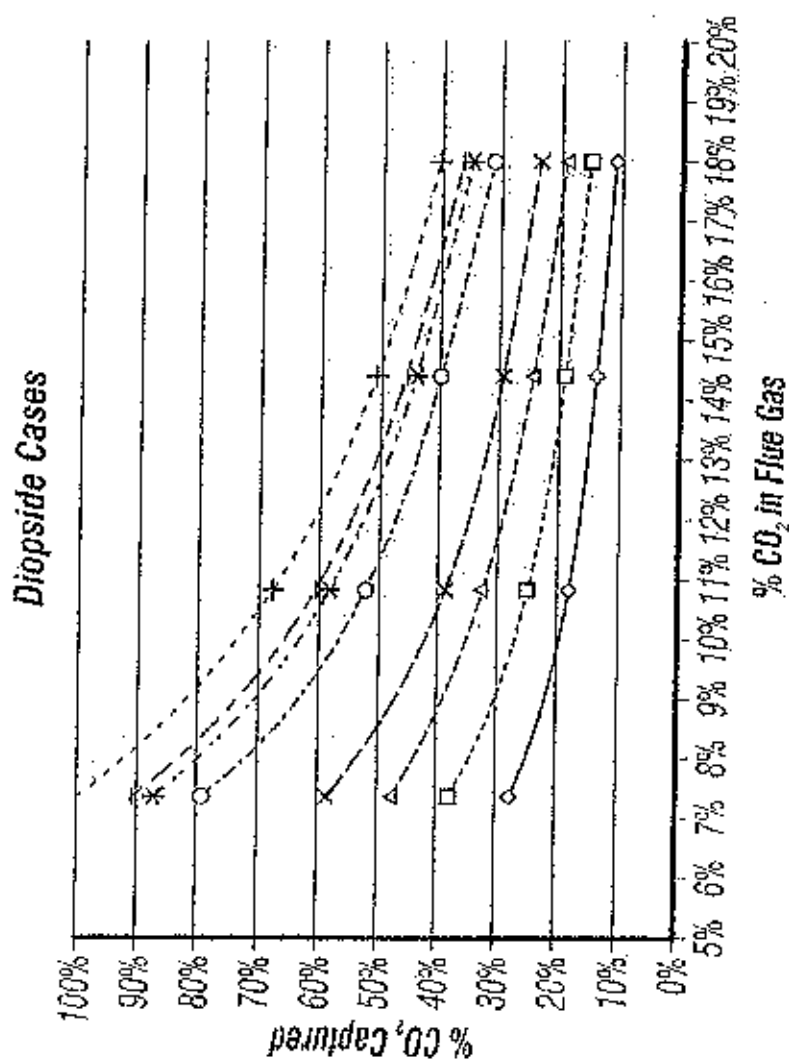


FIG. 26

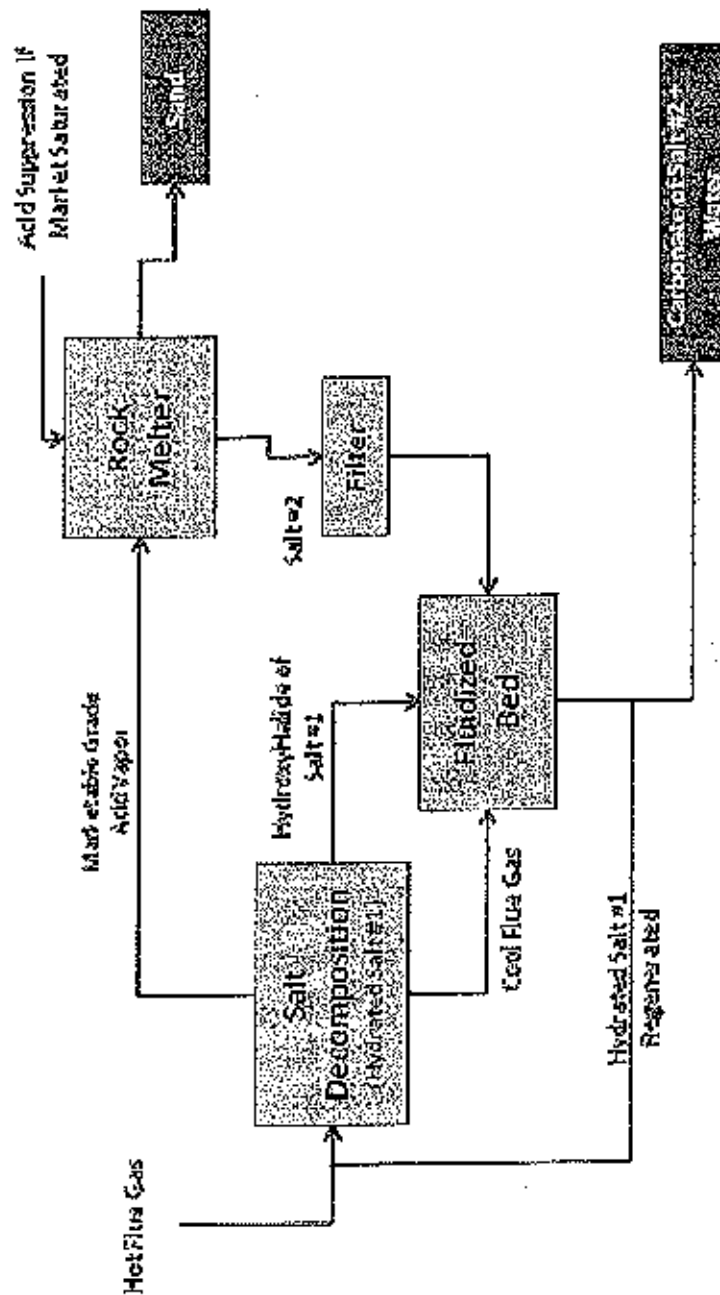


FIG. 27

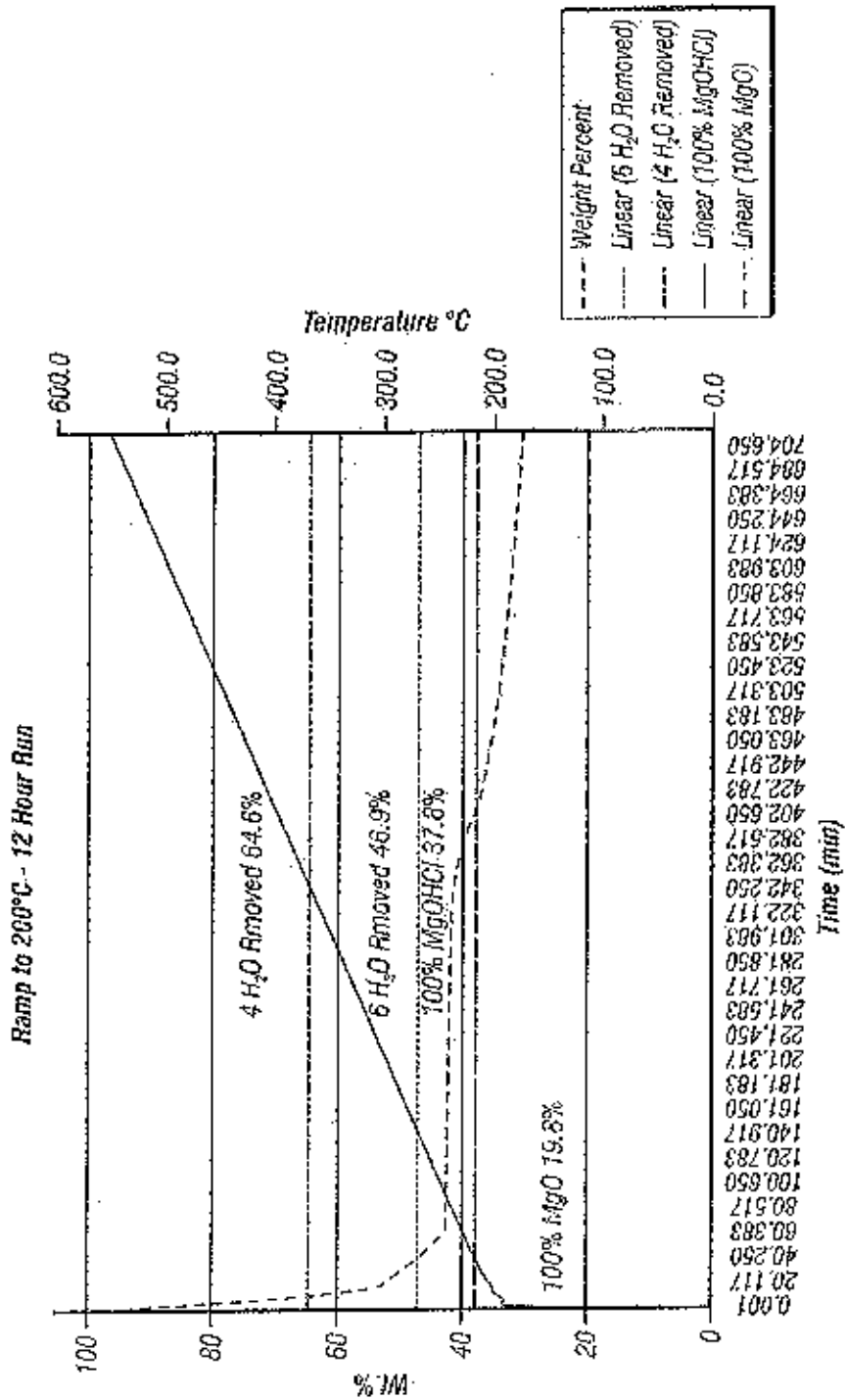


FIG. 28

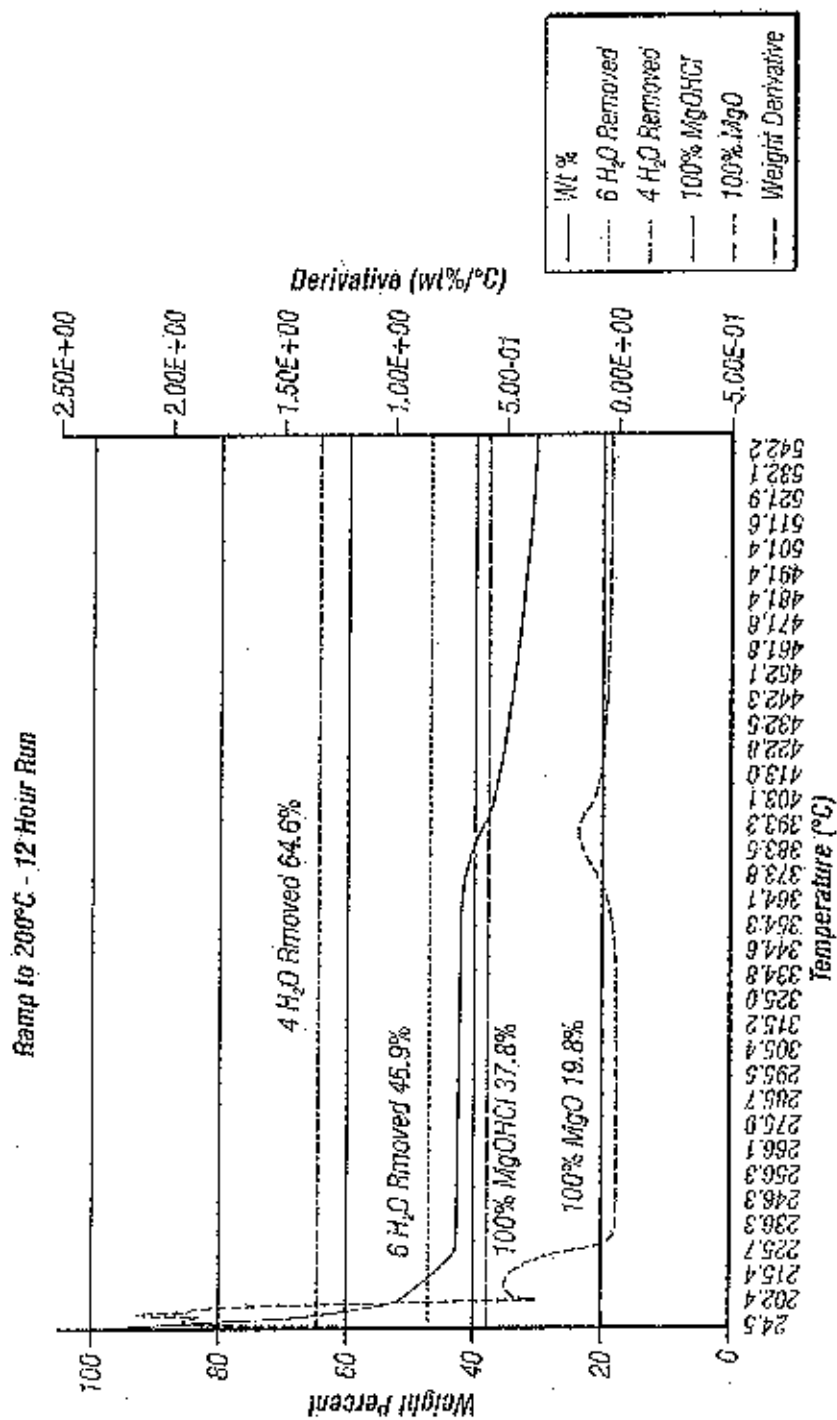


FIG. 29

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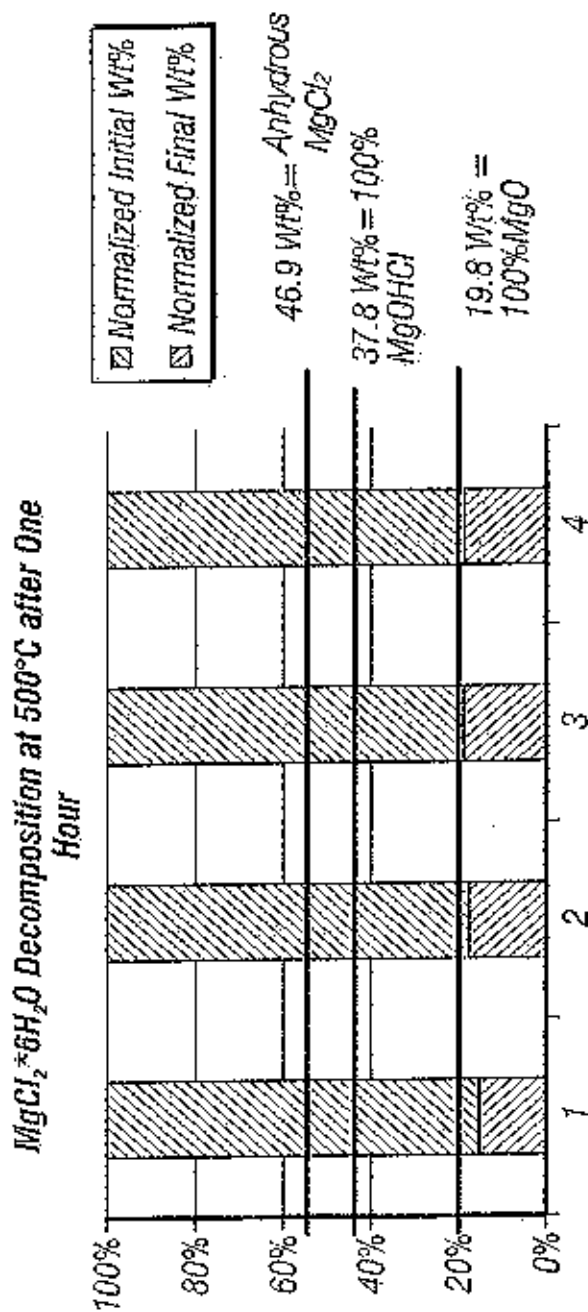


FIG. 30

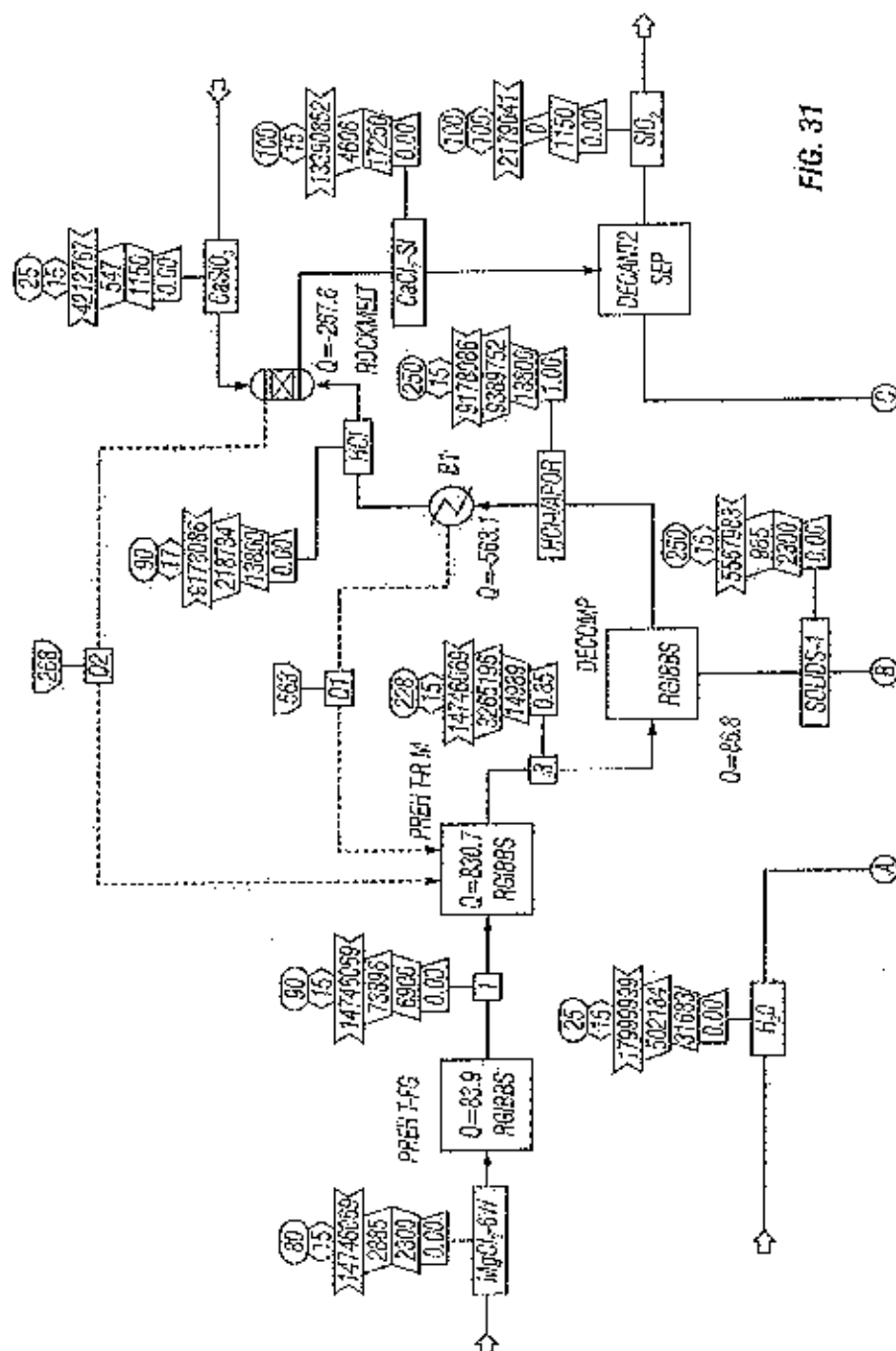
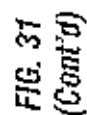


FIG. 31

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of Lal Lahiri & Salhotra
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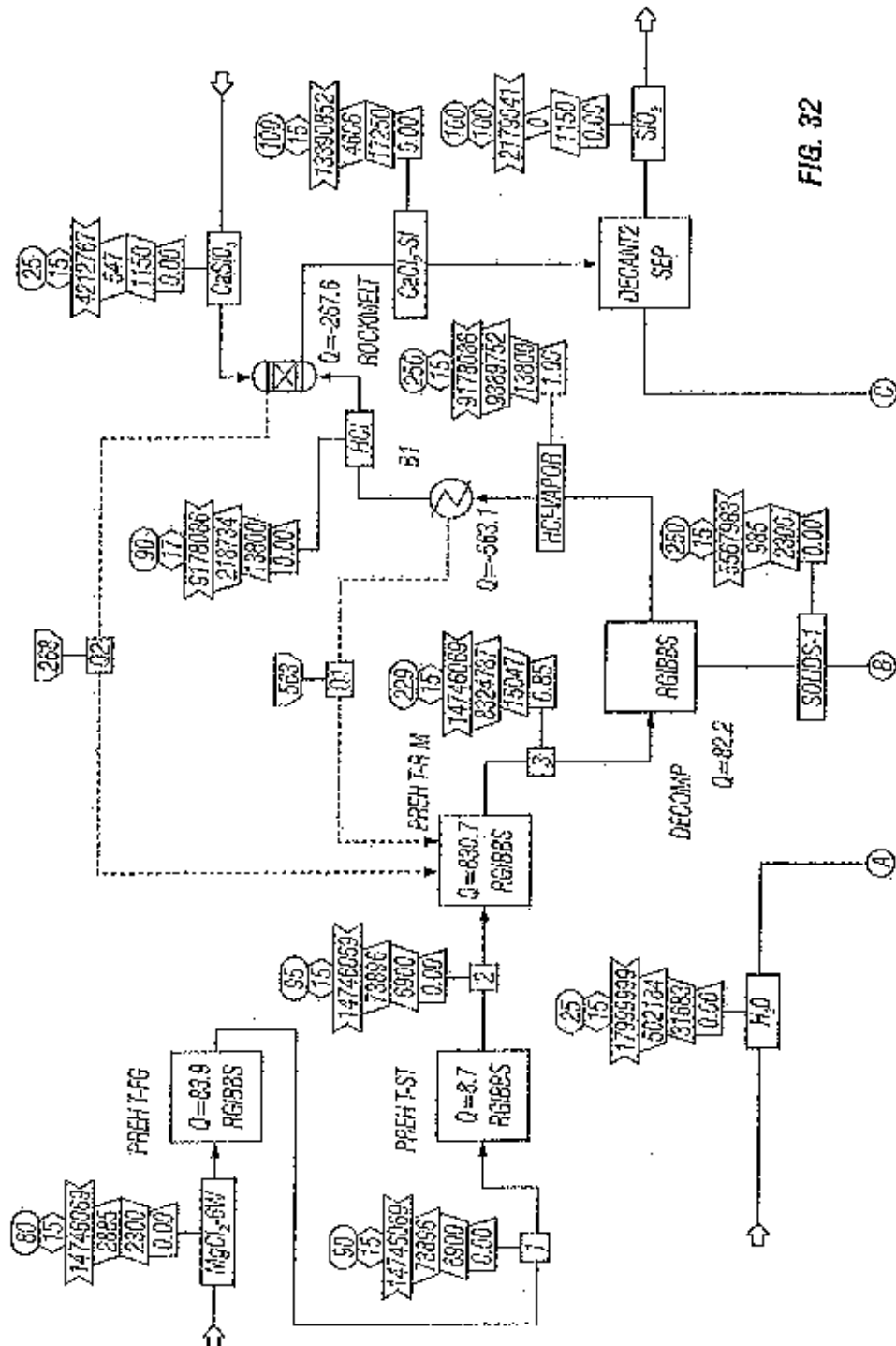
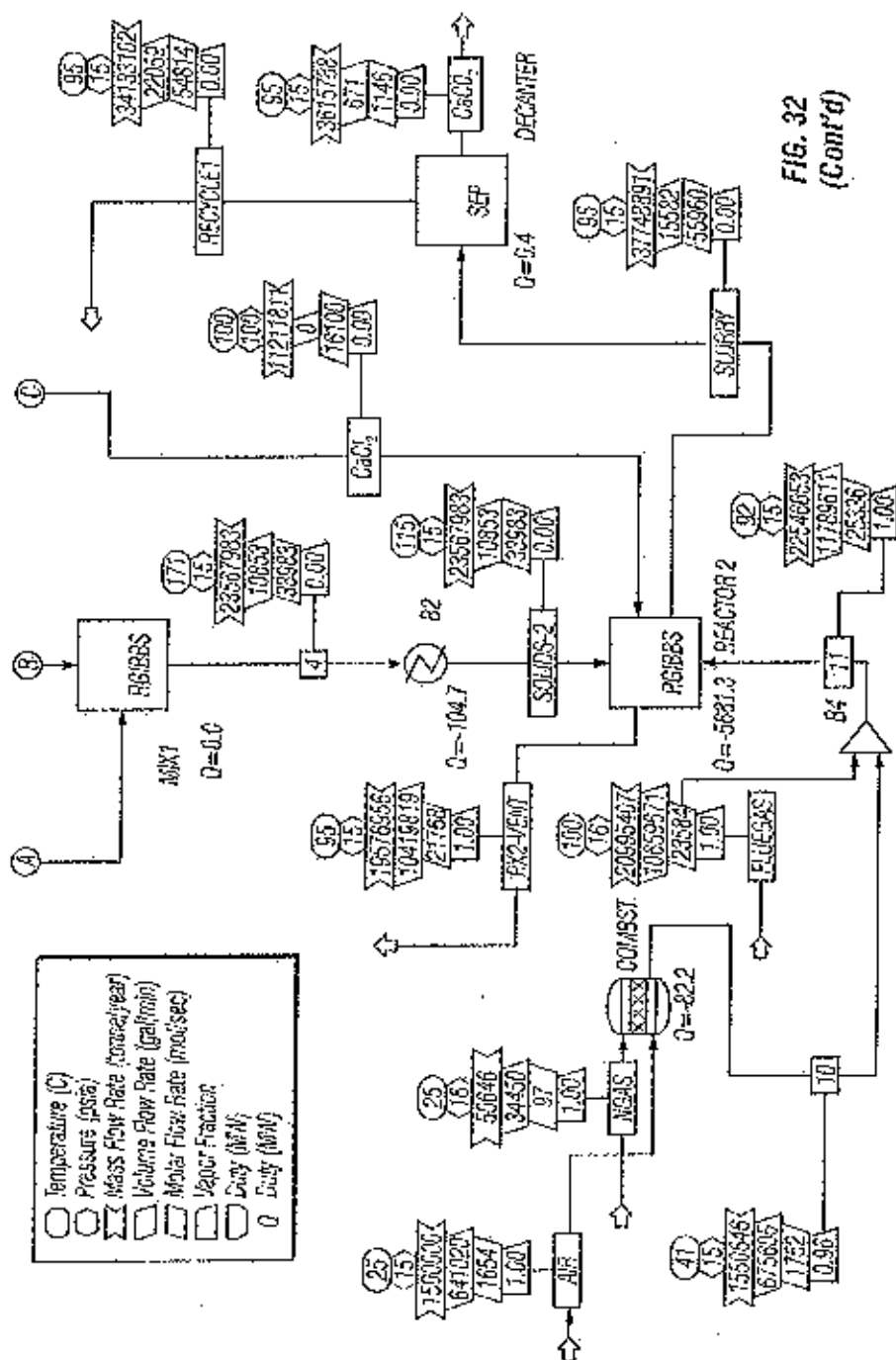


FIG. 32



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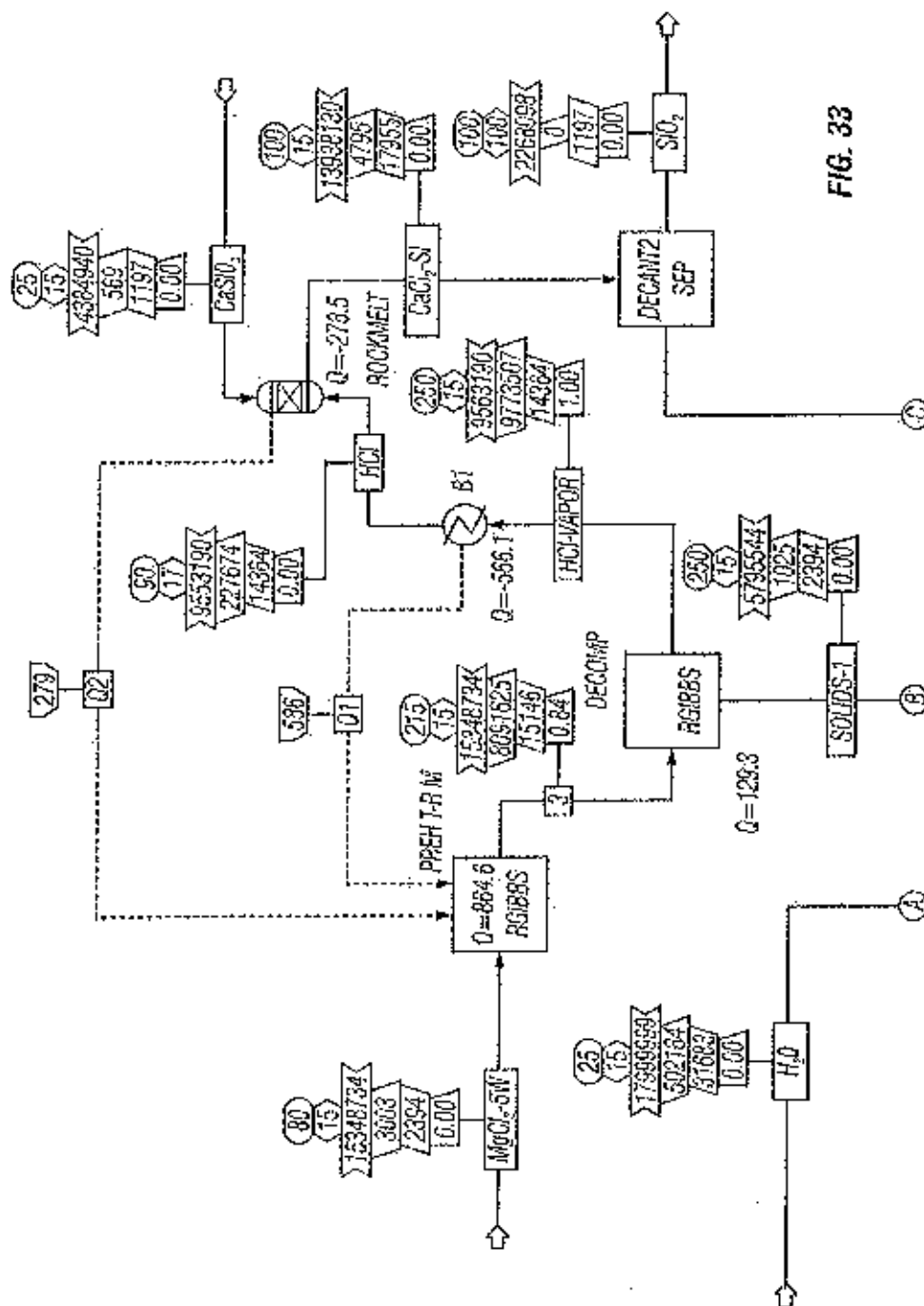


FIG. 33

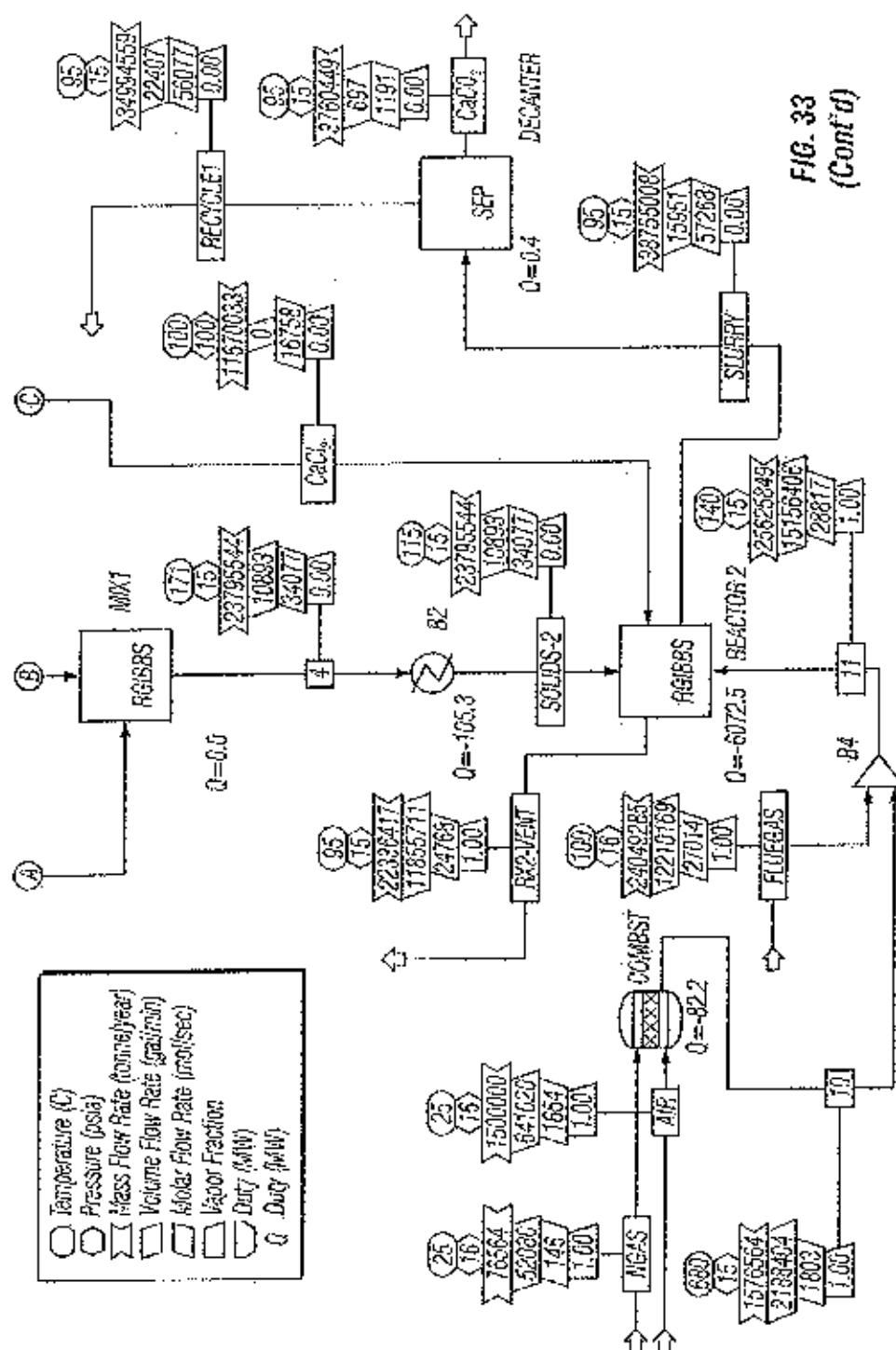


FIG. 33
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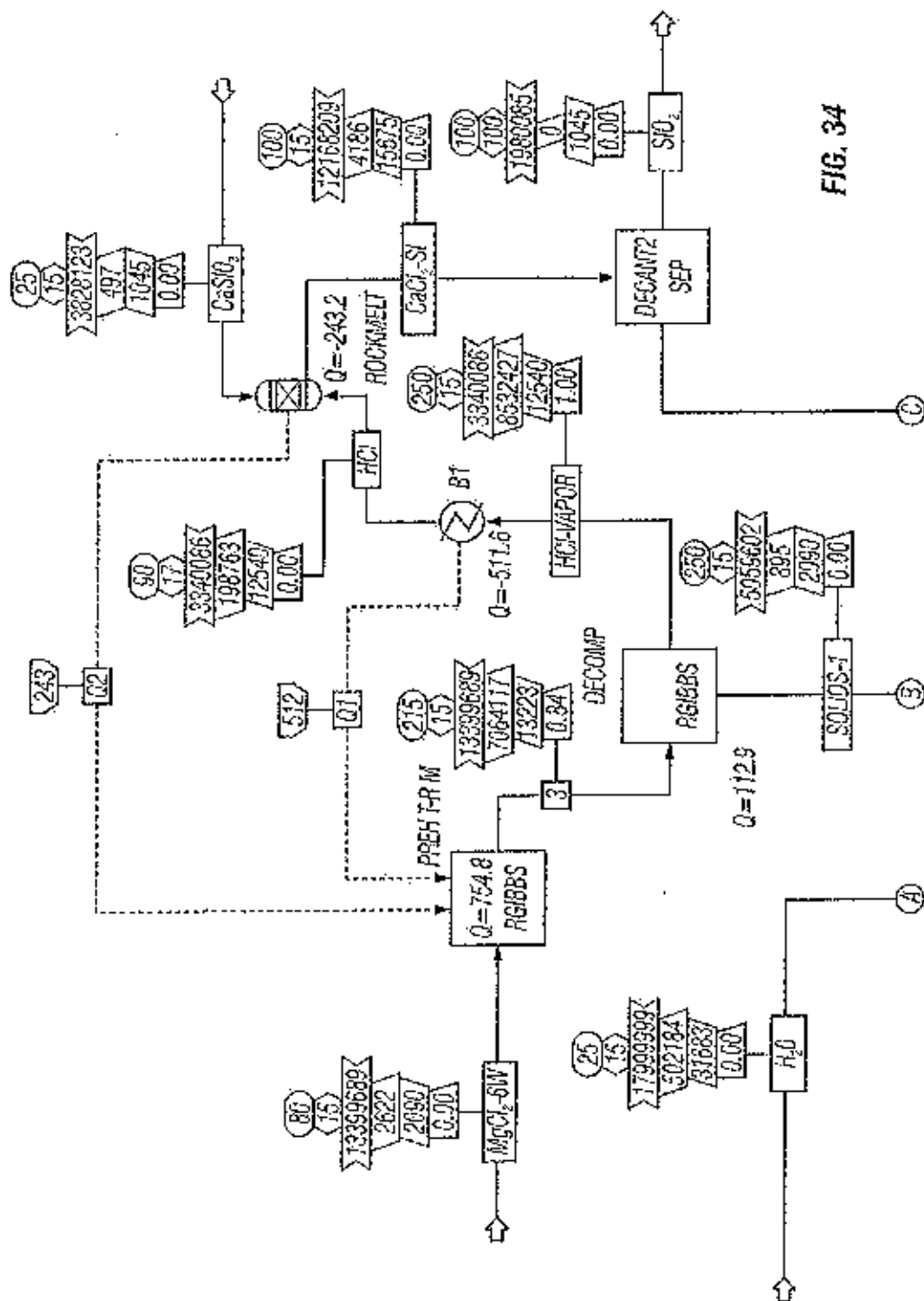
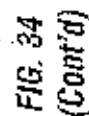


FIG. 34



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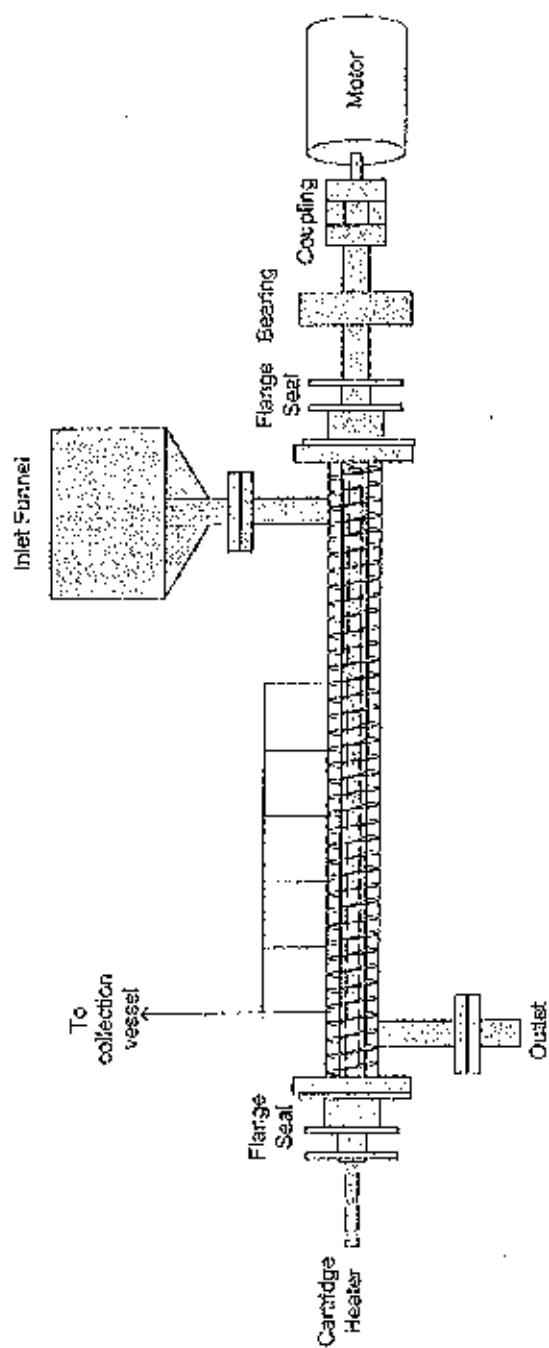


FIG. 35

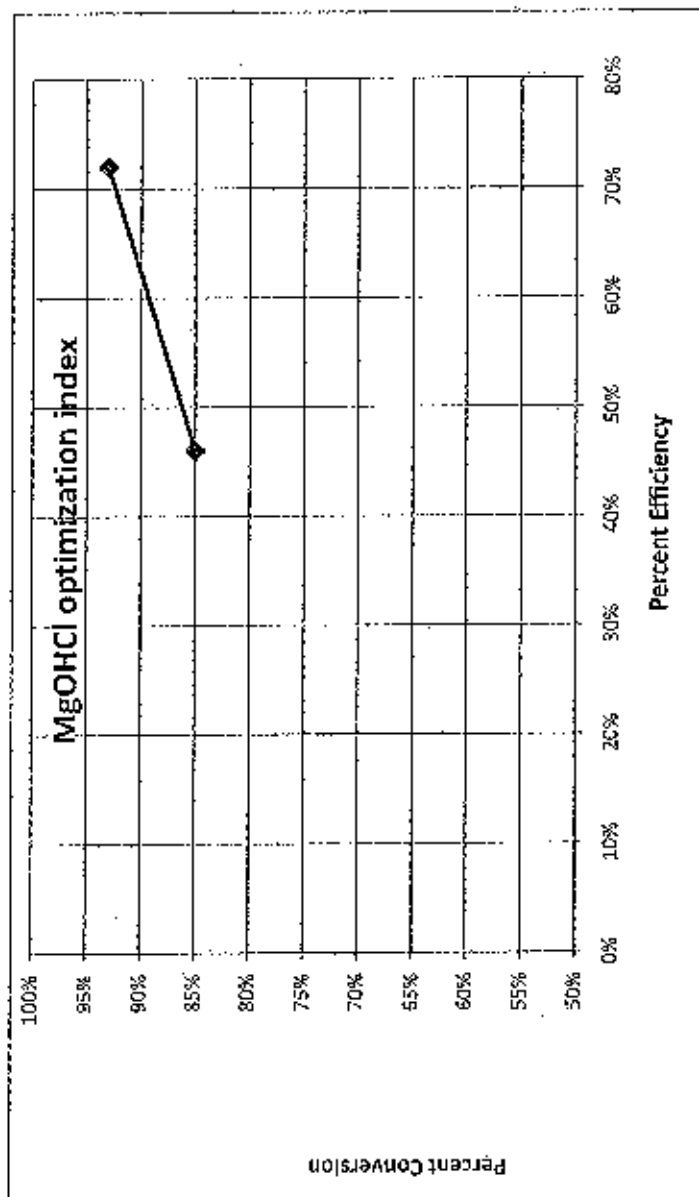


FIG. 36

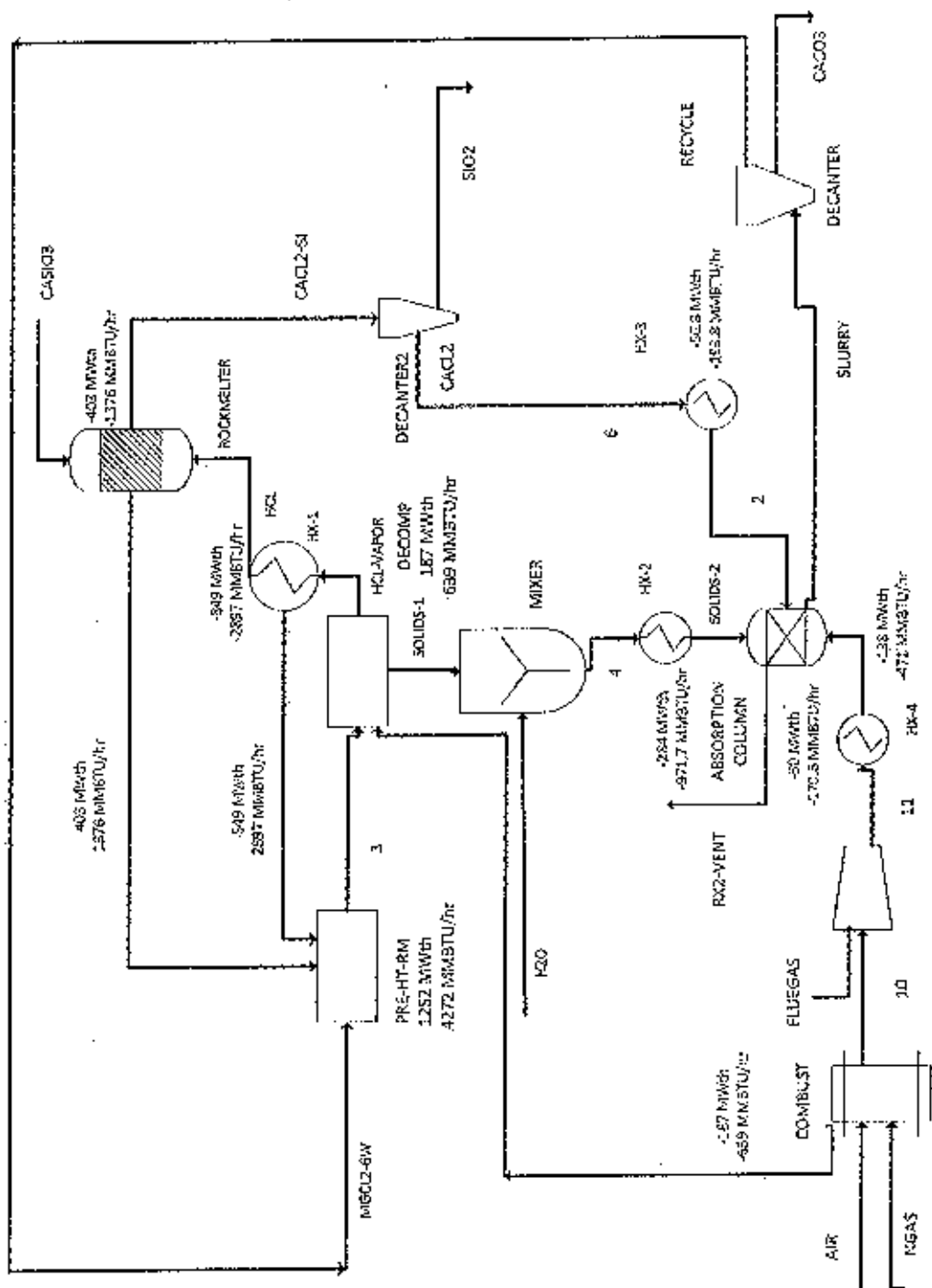


FIG. 37

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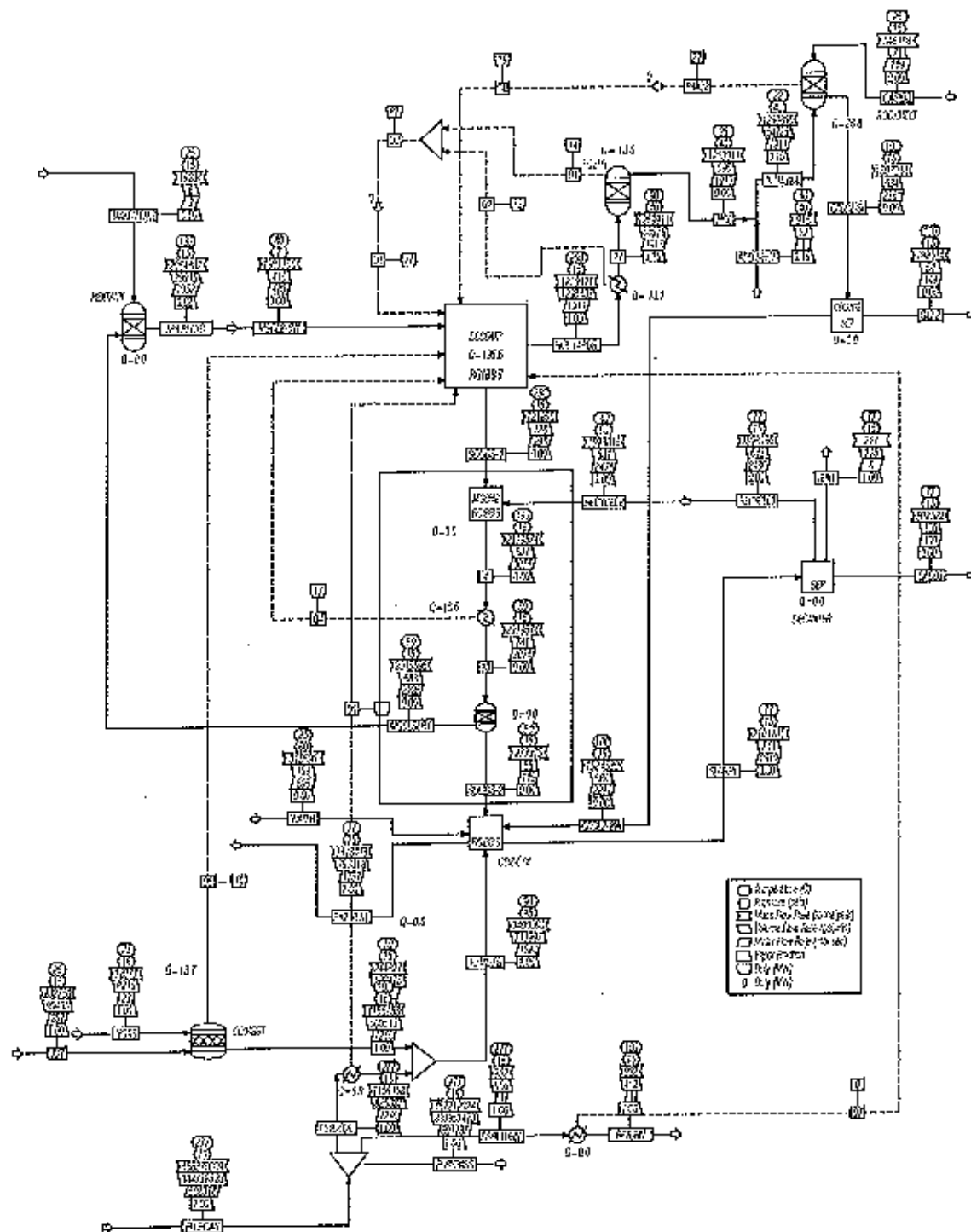


FIG. 38A

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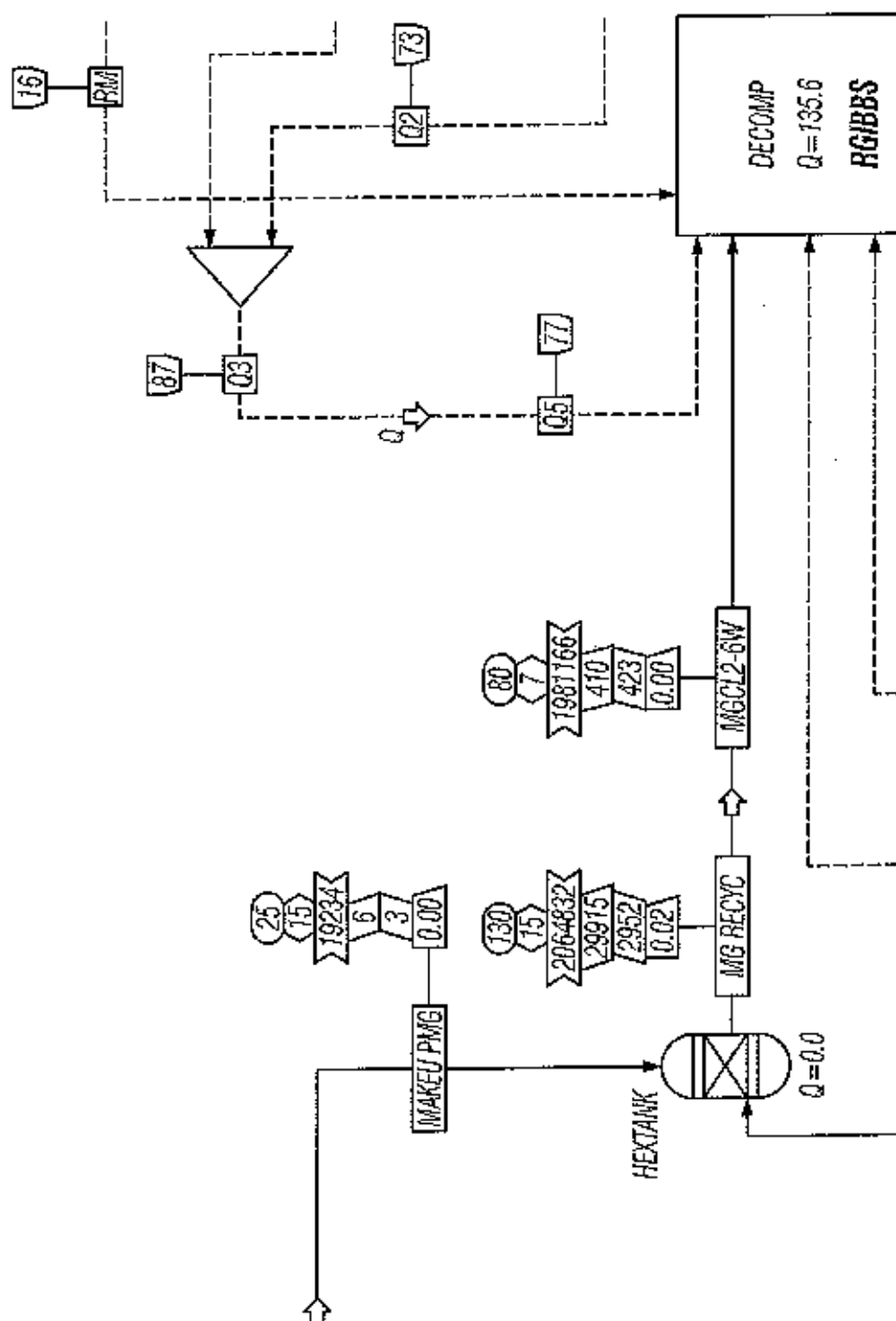


FIG. 38B

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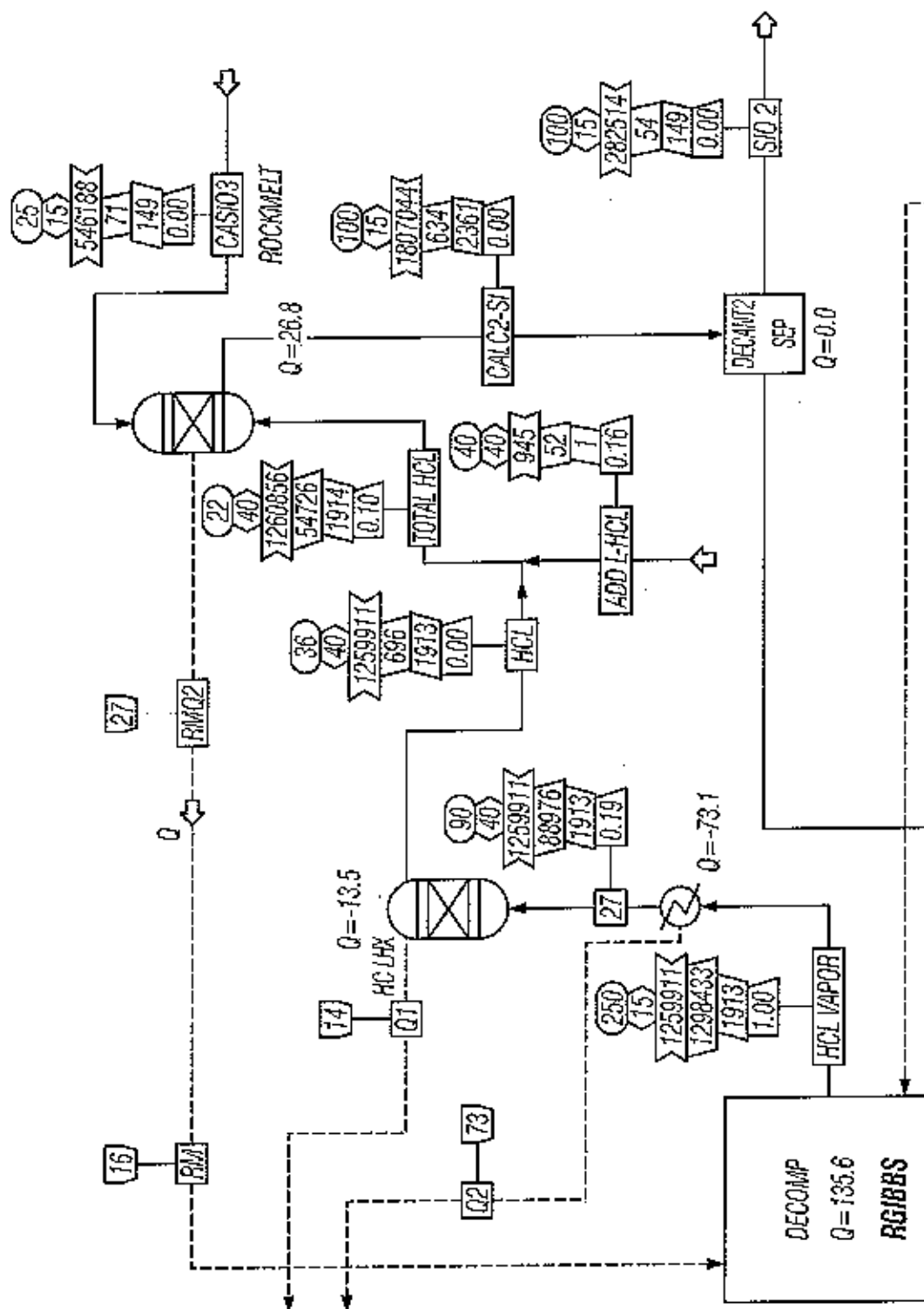


FIG. 38C

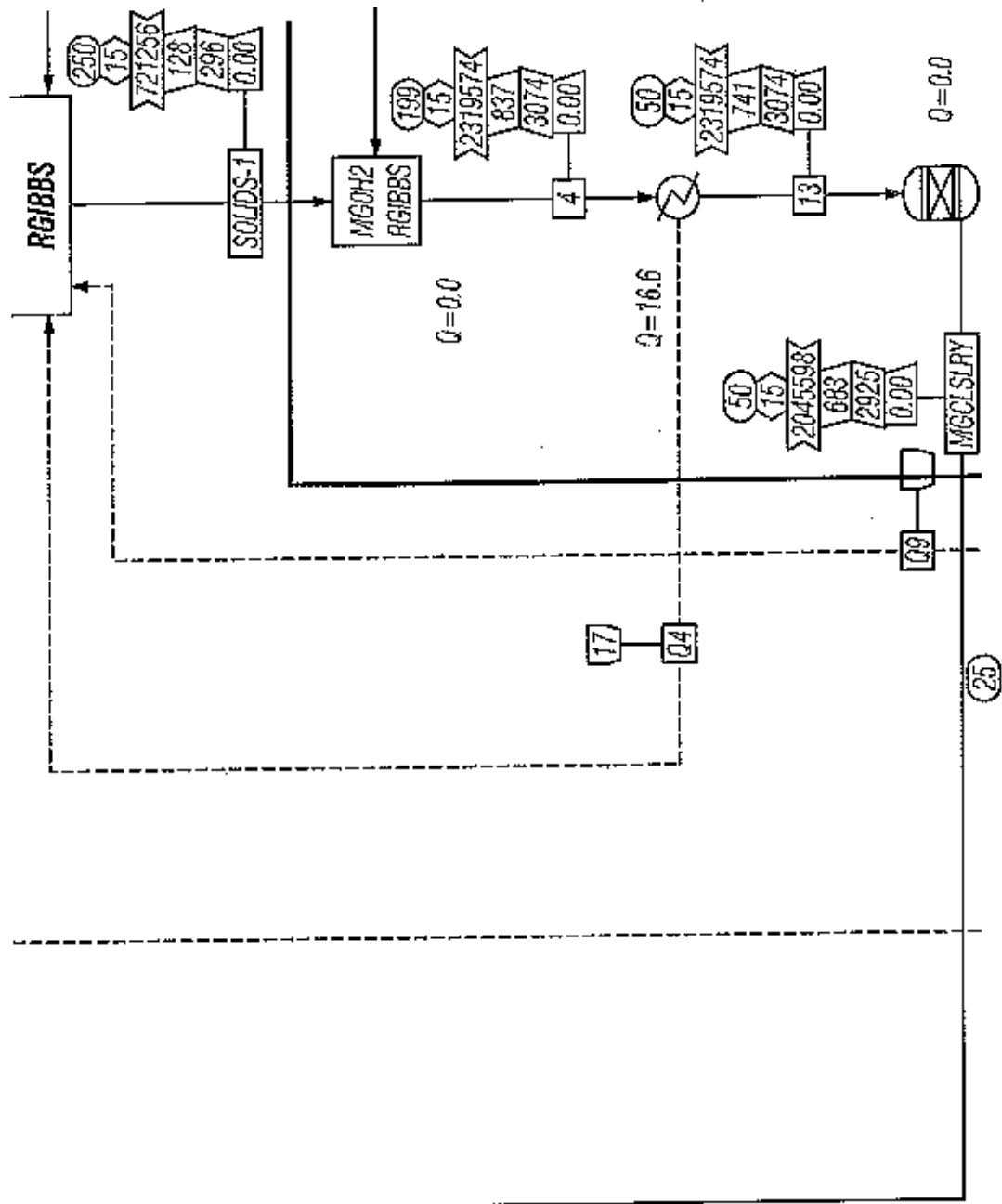


FIG. 38D

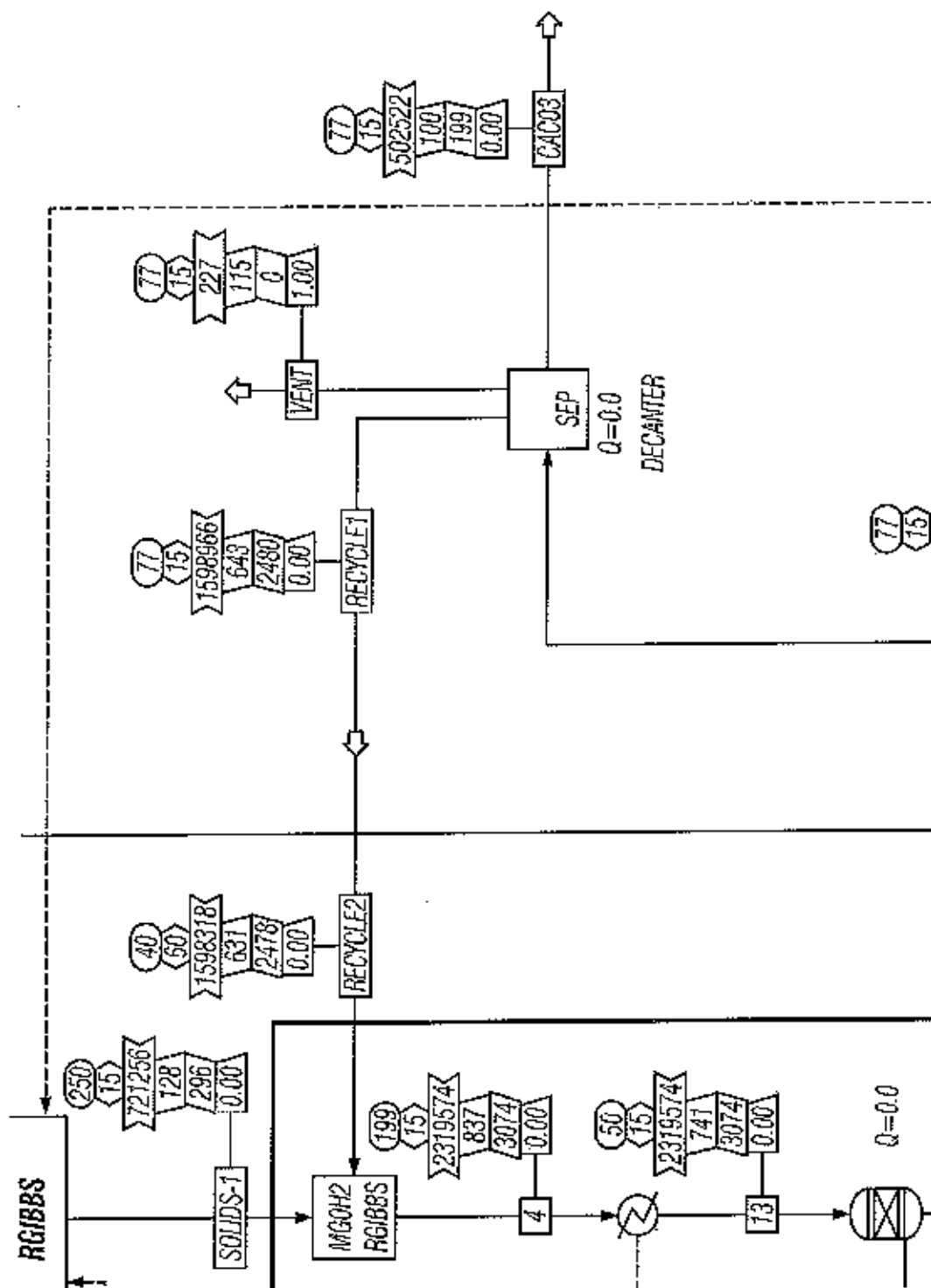
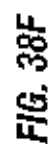


FIG. 38E



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Agents for the Applicant

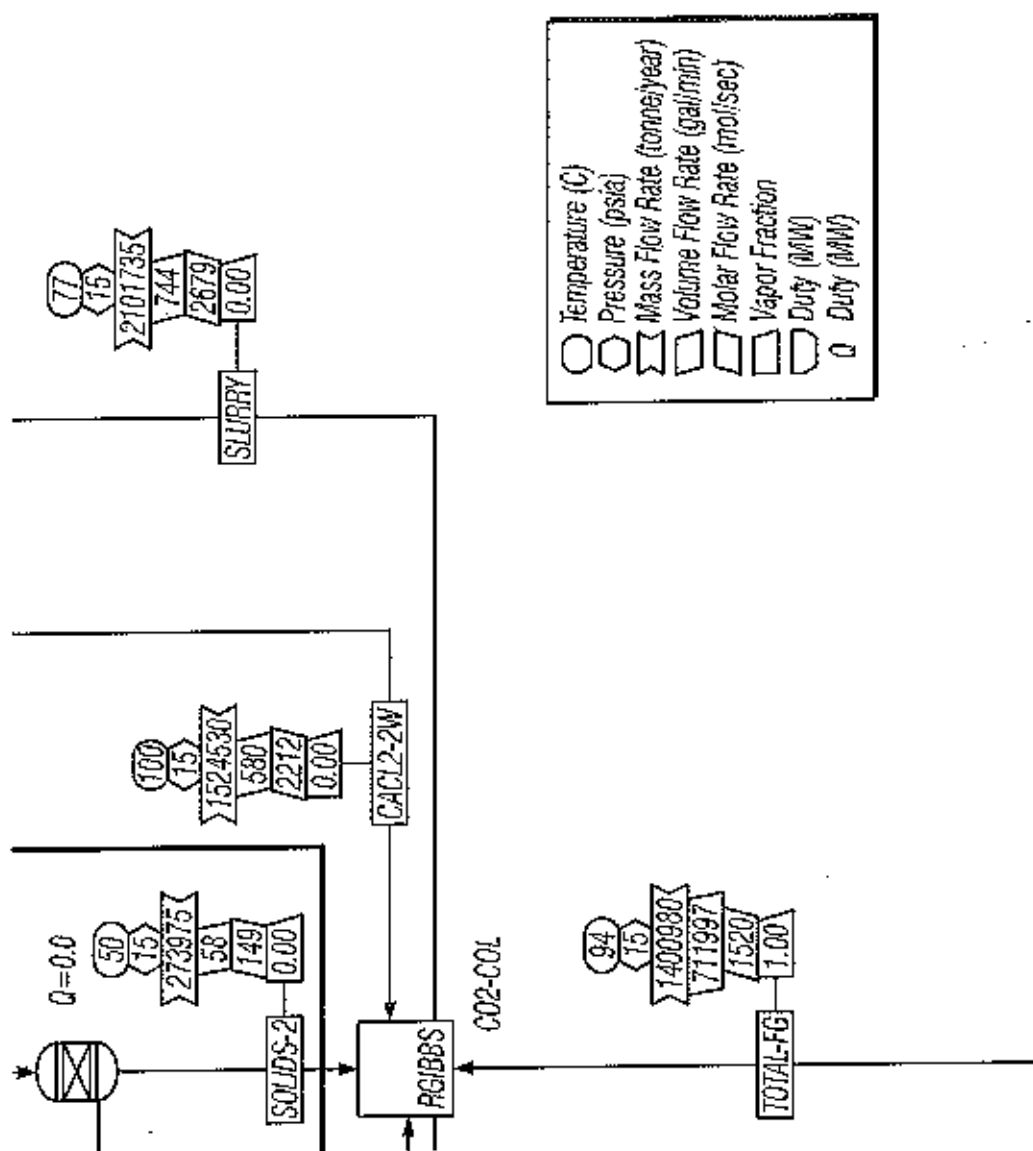
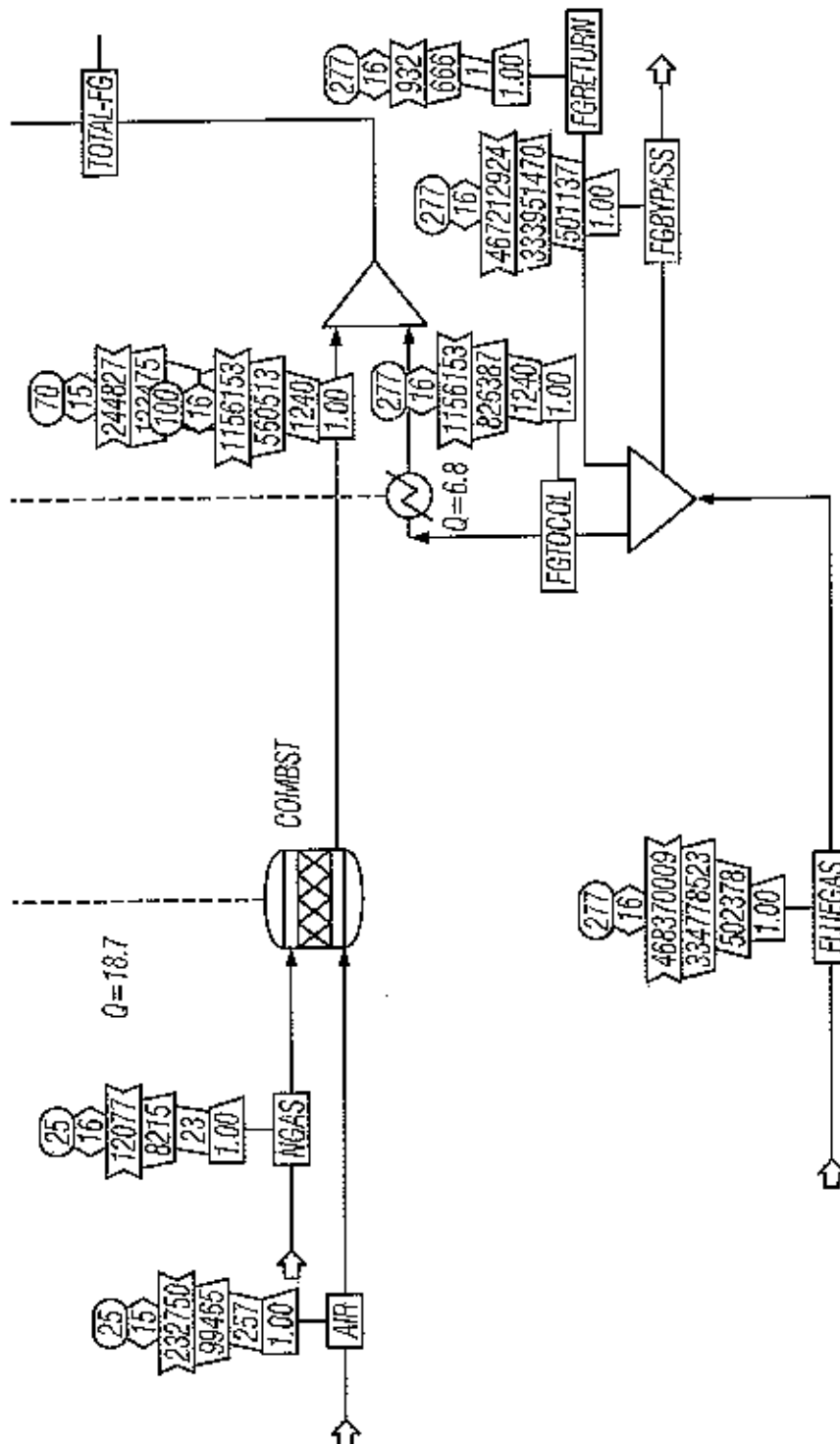


FIG. 38G



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Agents for the Applicant

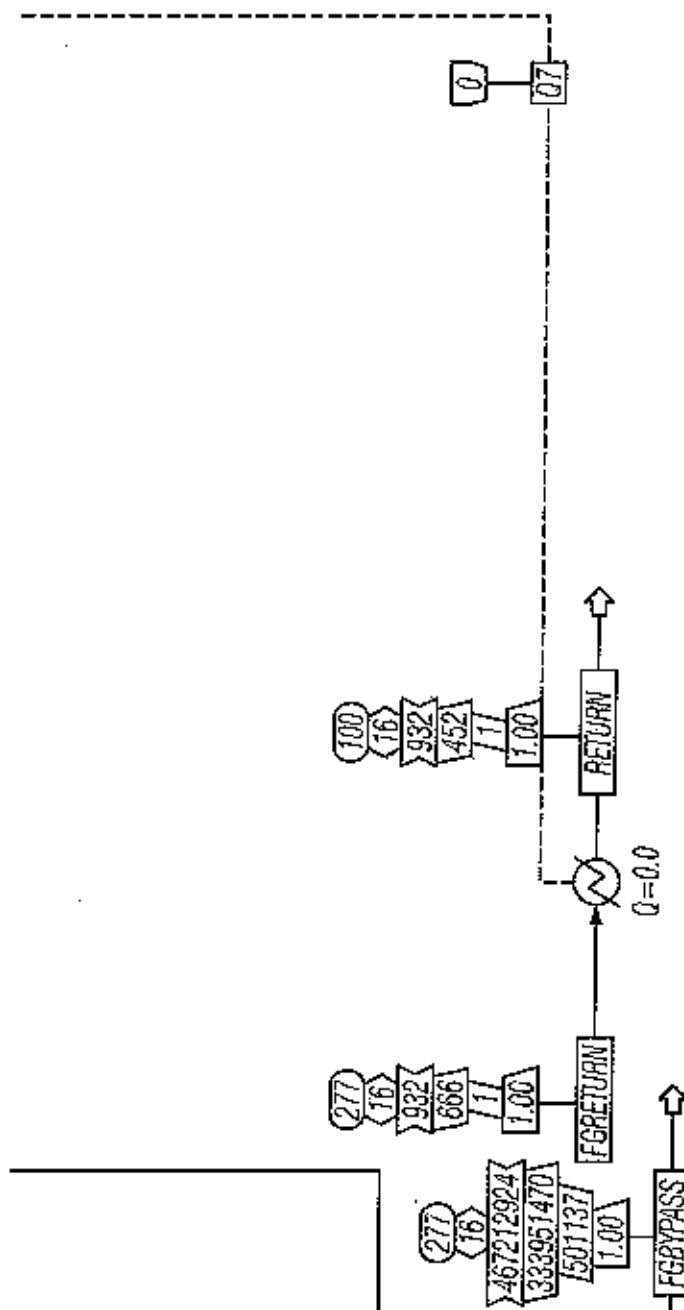


FIG. 38I

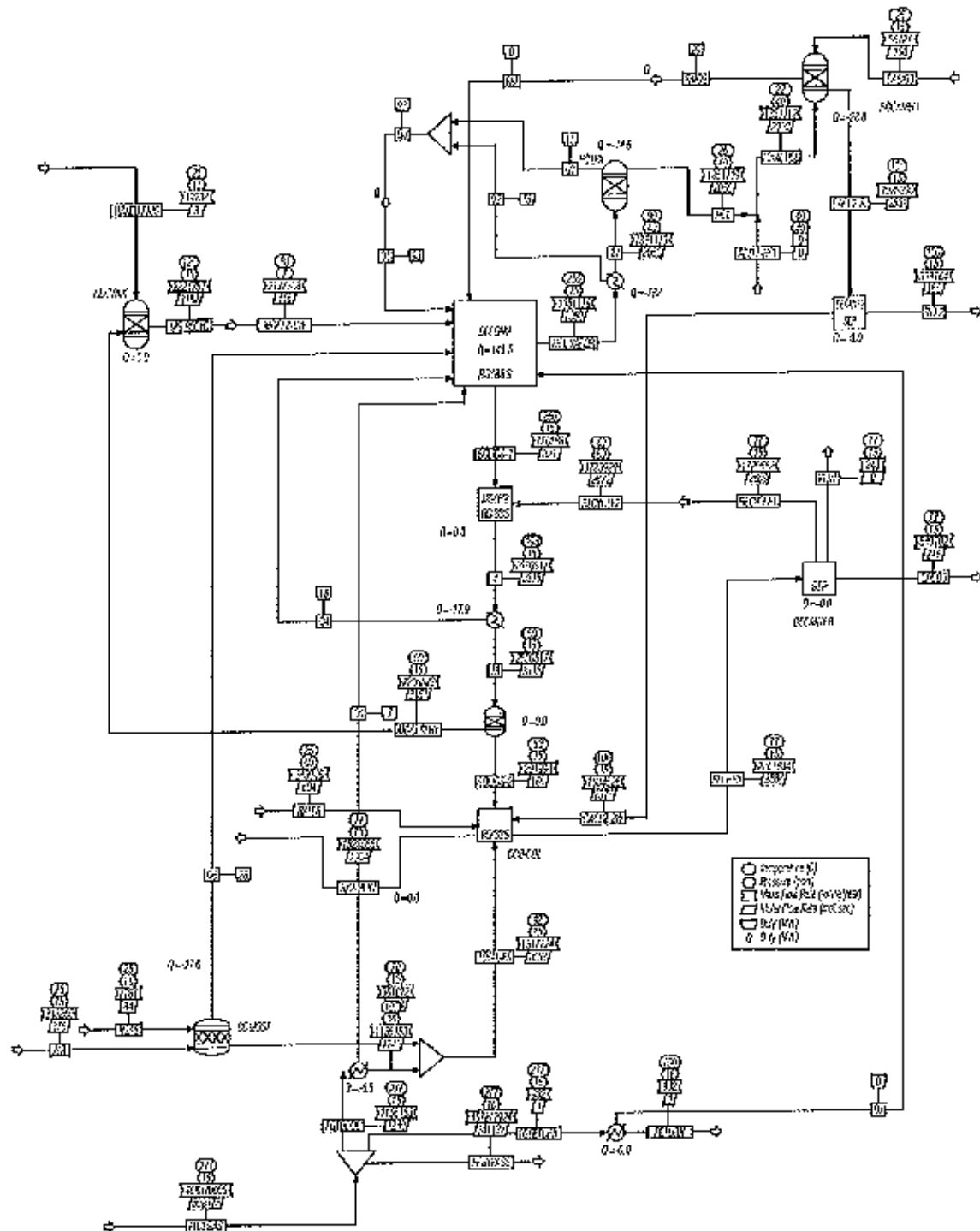


FIG. 39A

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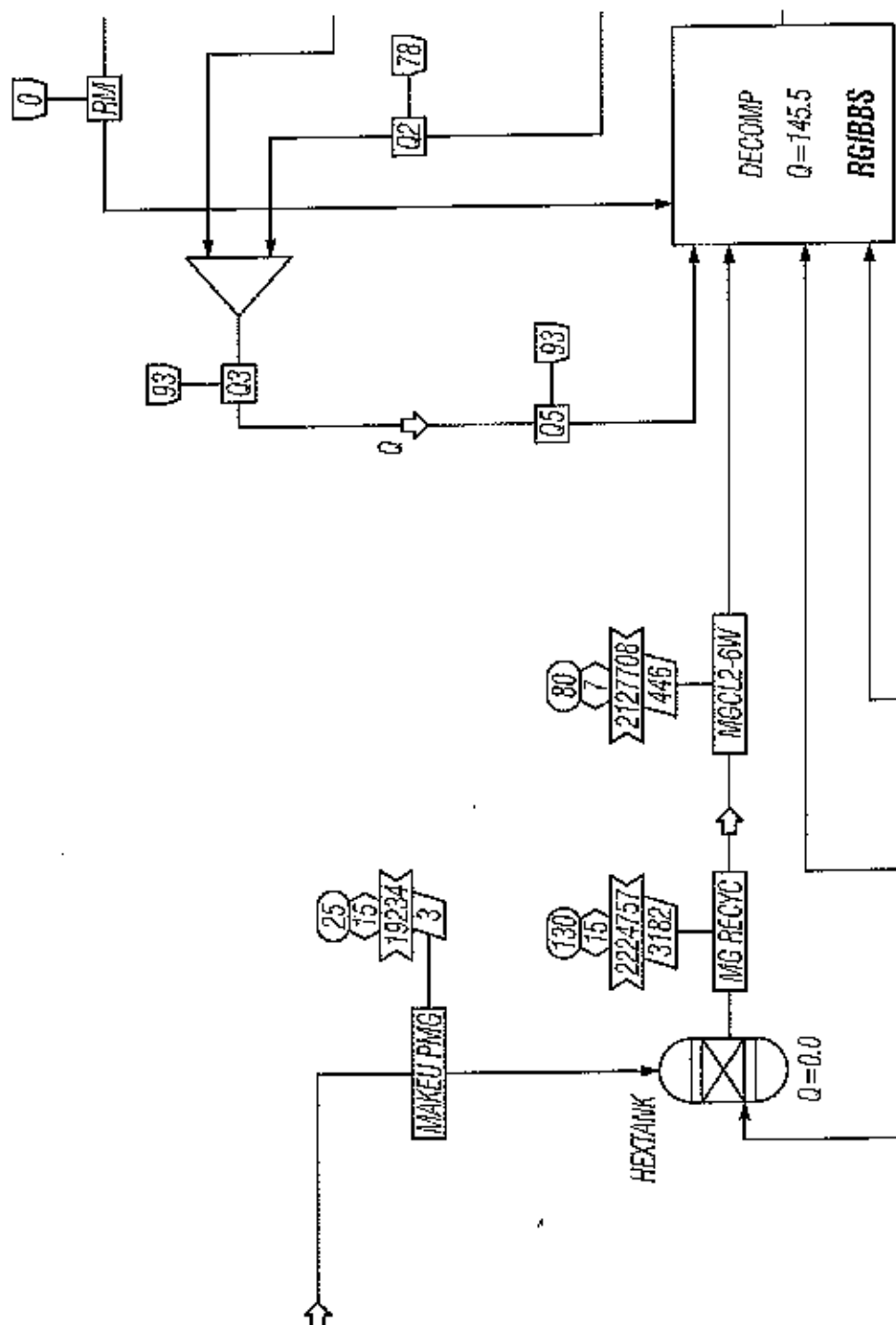
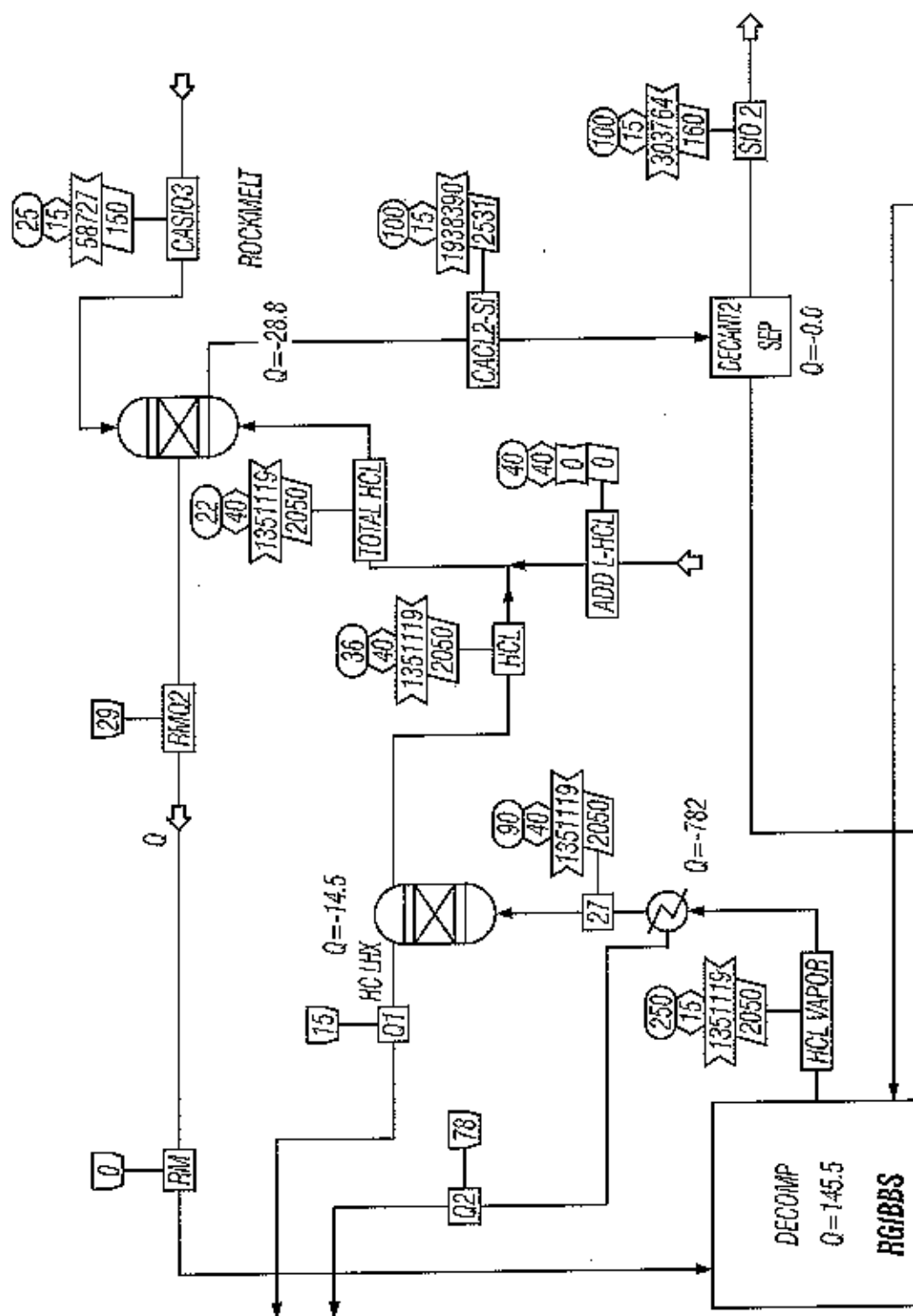


FIG. 39B

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of Lall Lahiri & Salhotra
Agents for the Applicant

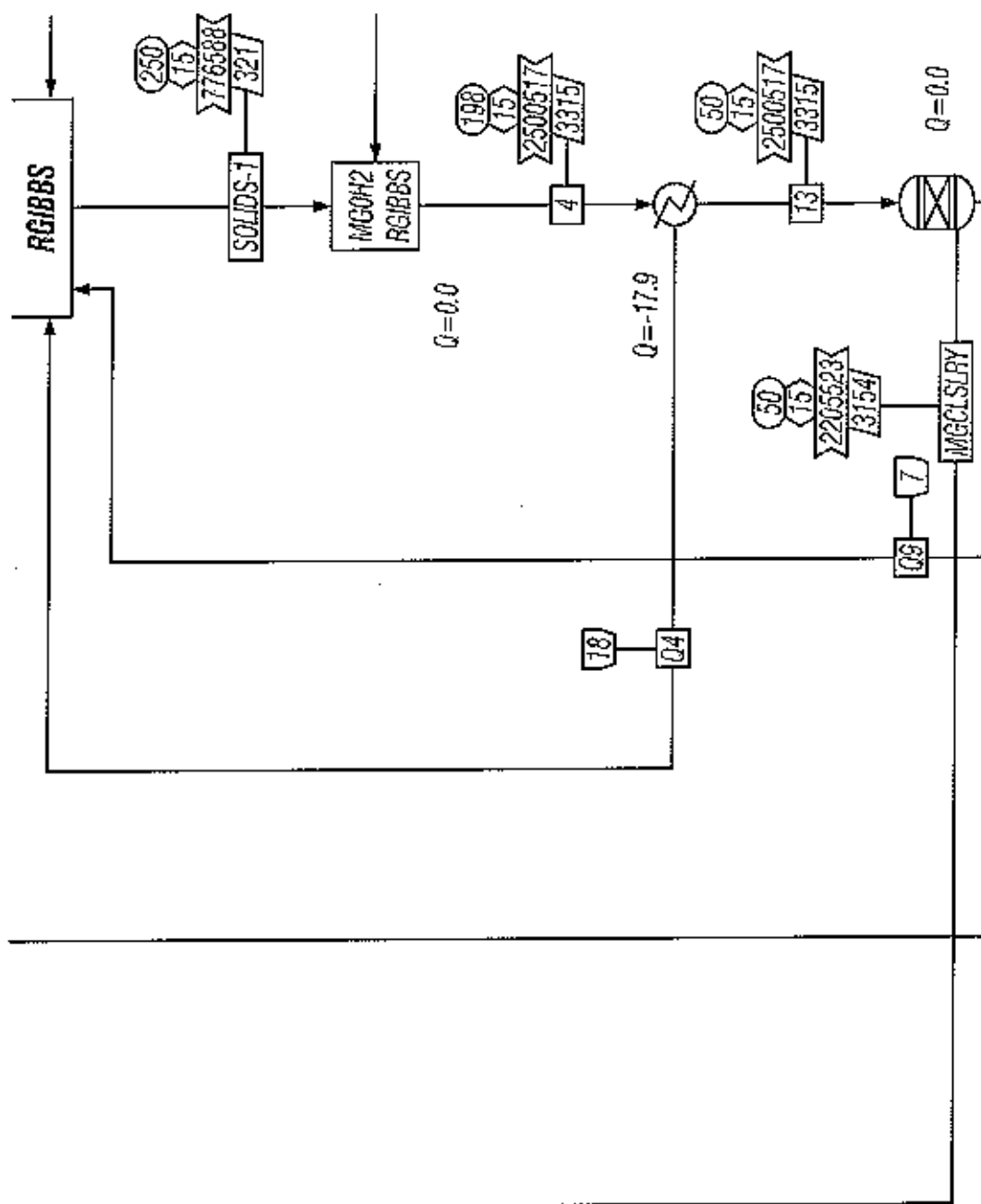


FIG. 39D

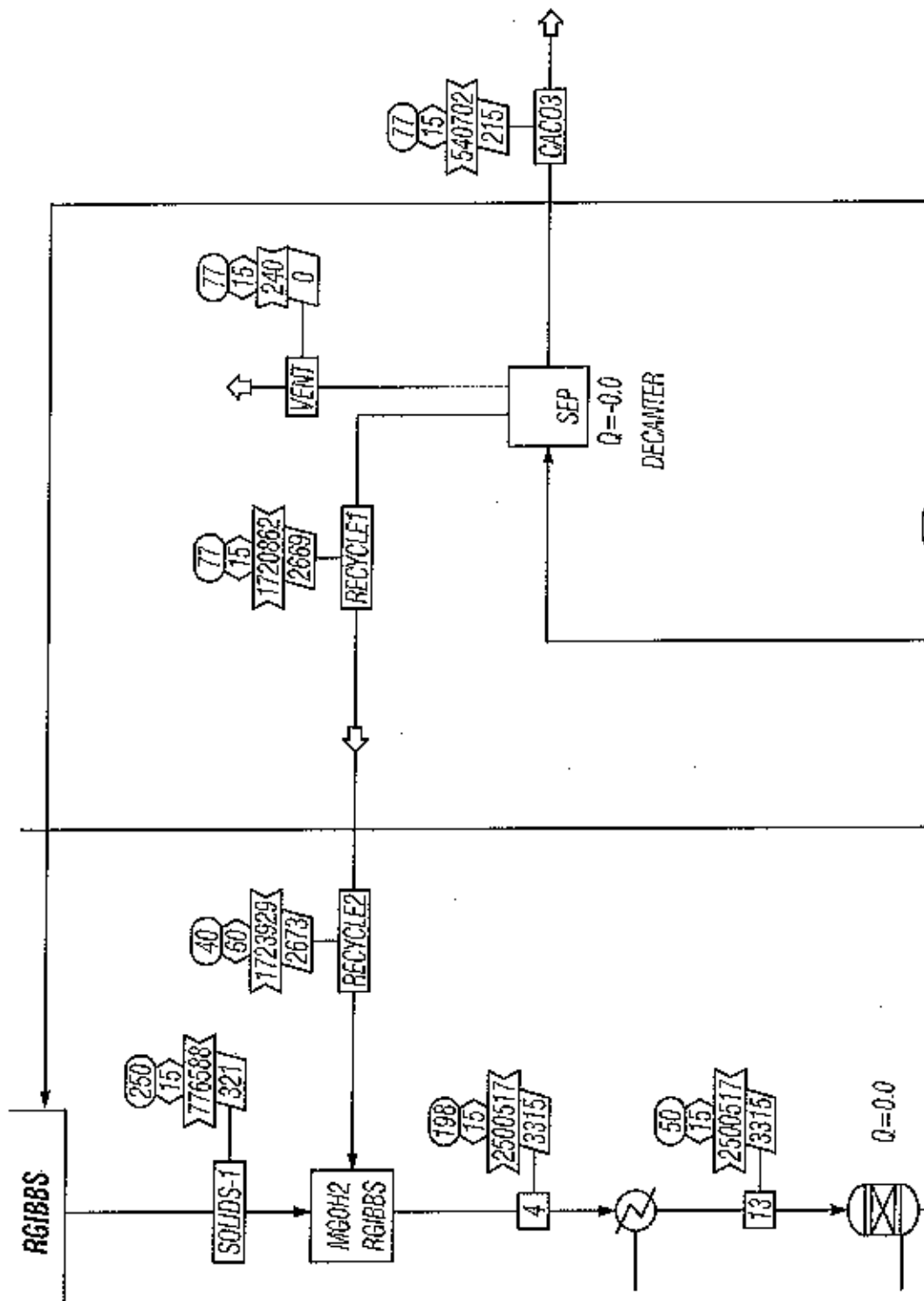


FIG. 39E

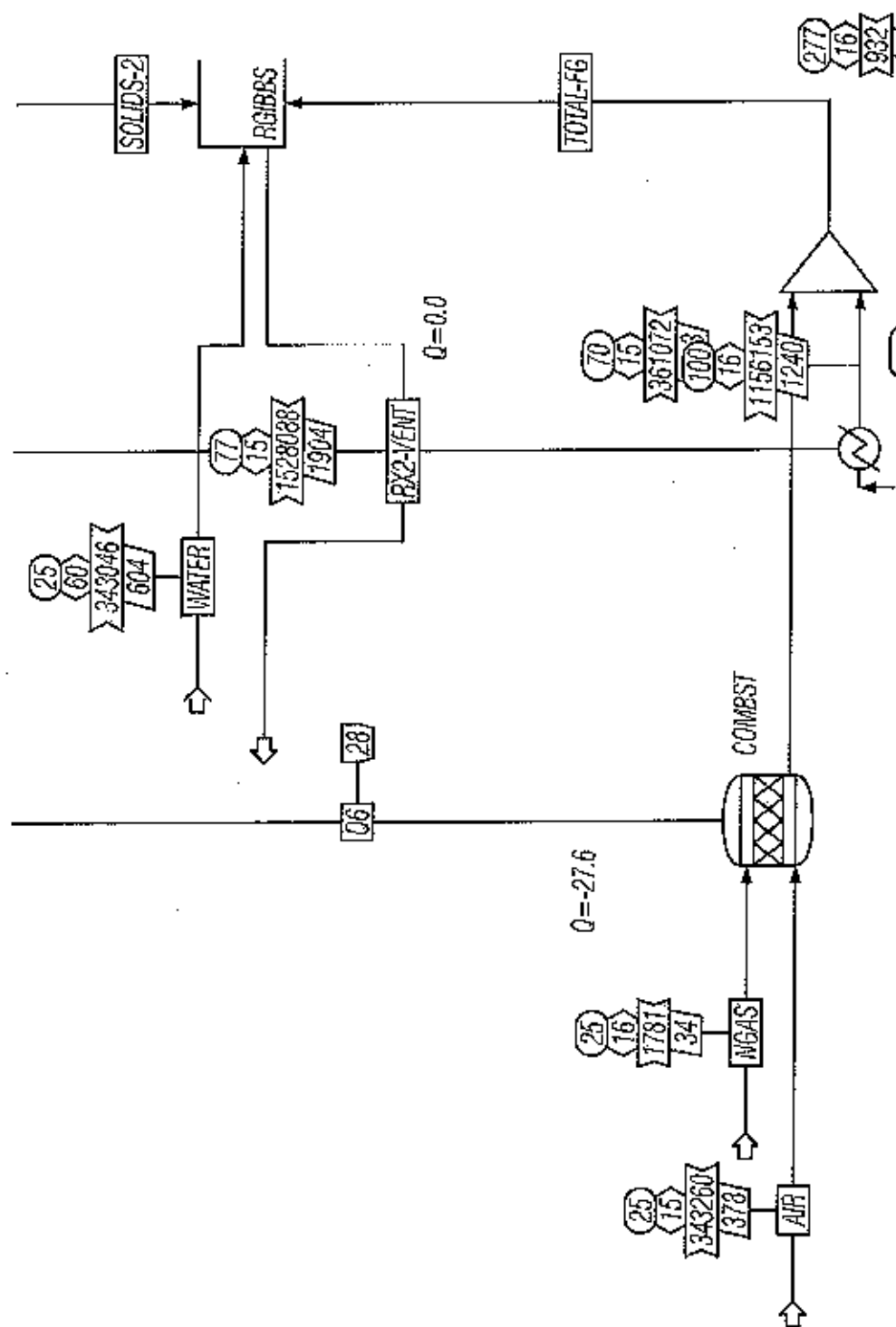


FIG. 39F

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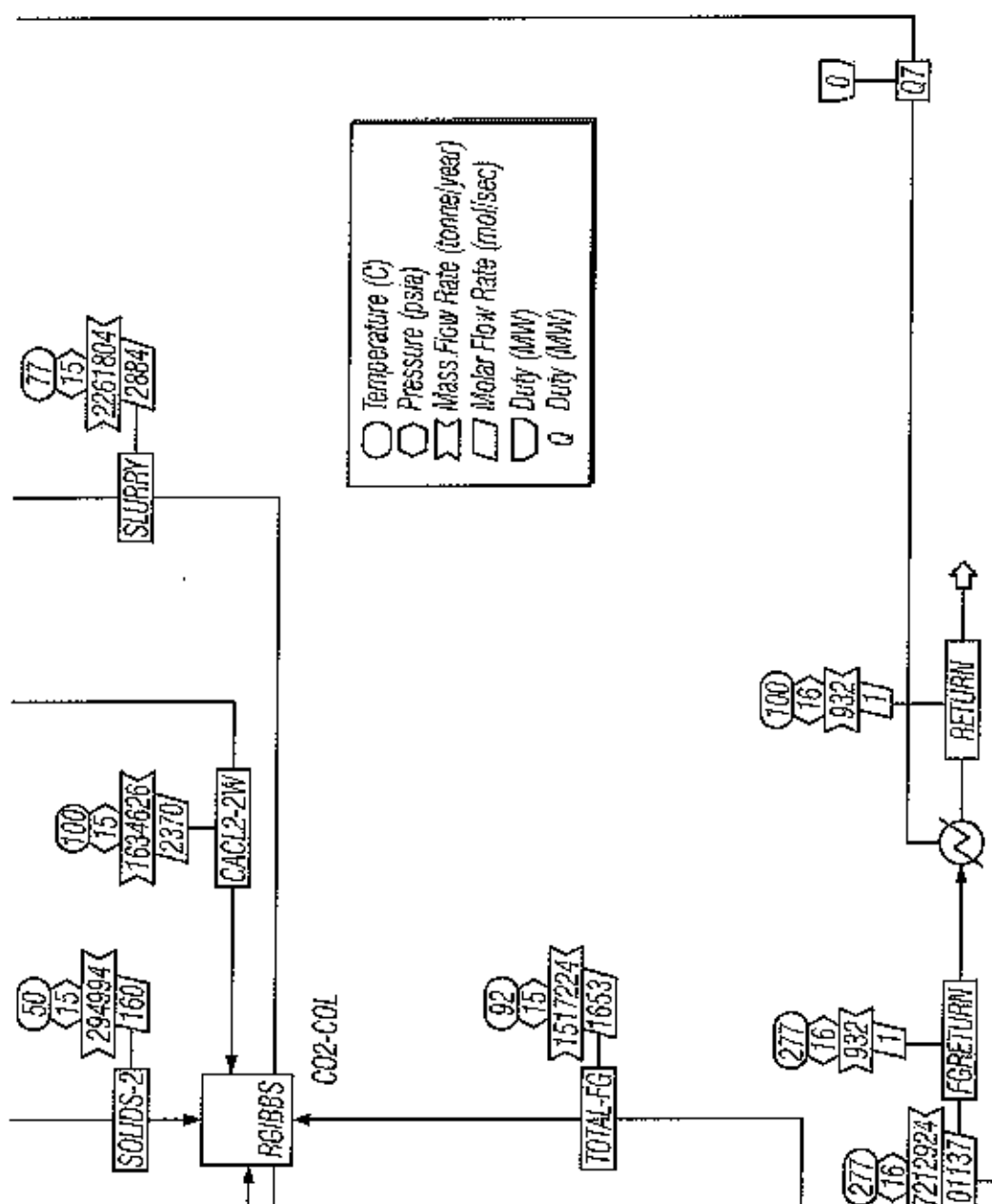


FIG. 39G

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Agents for the Applicant

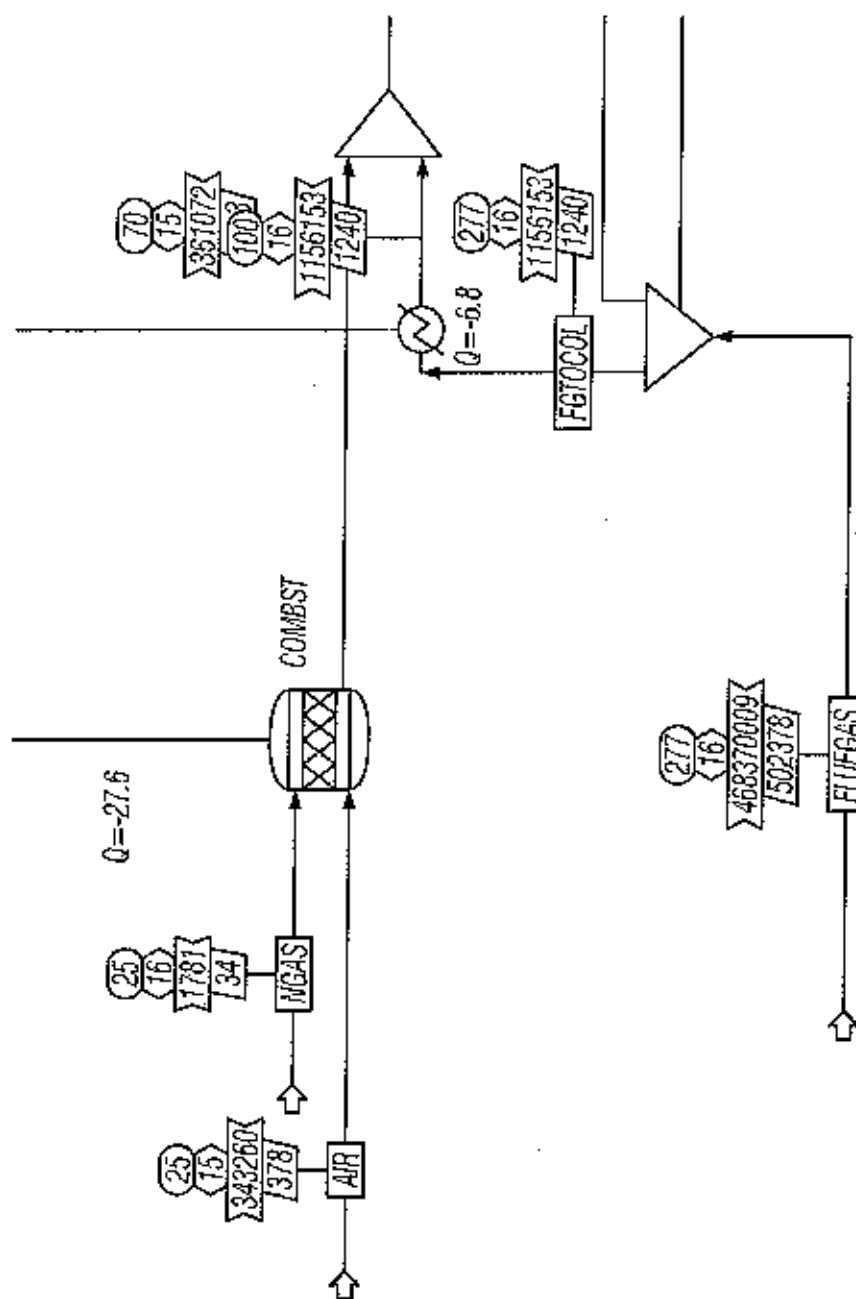


FIG. 39H

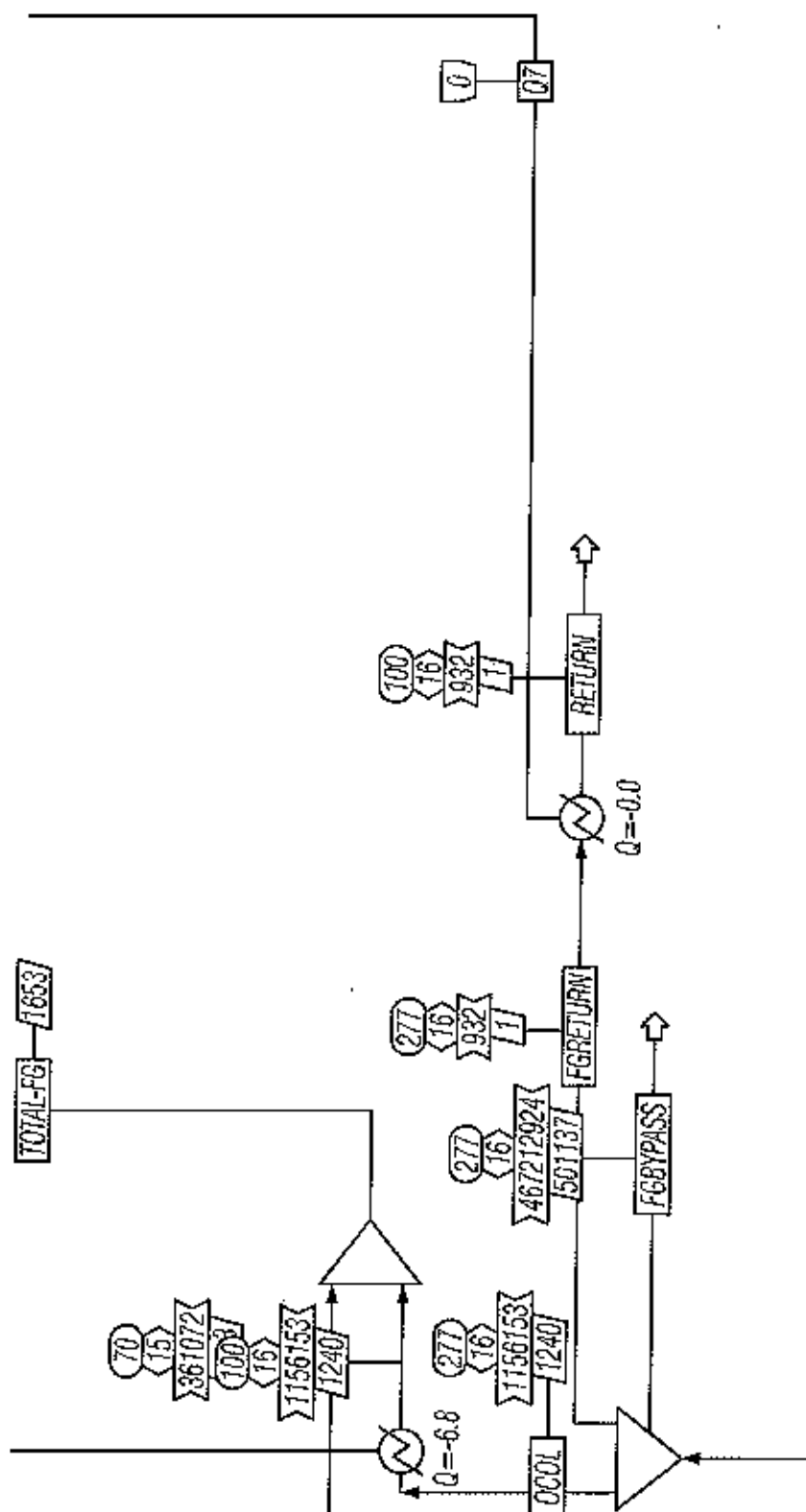


FIG. 39I