

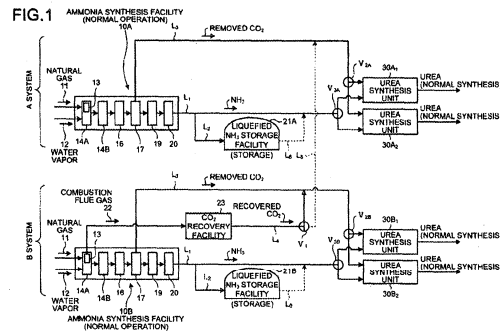
ABSTRACT

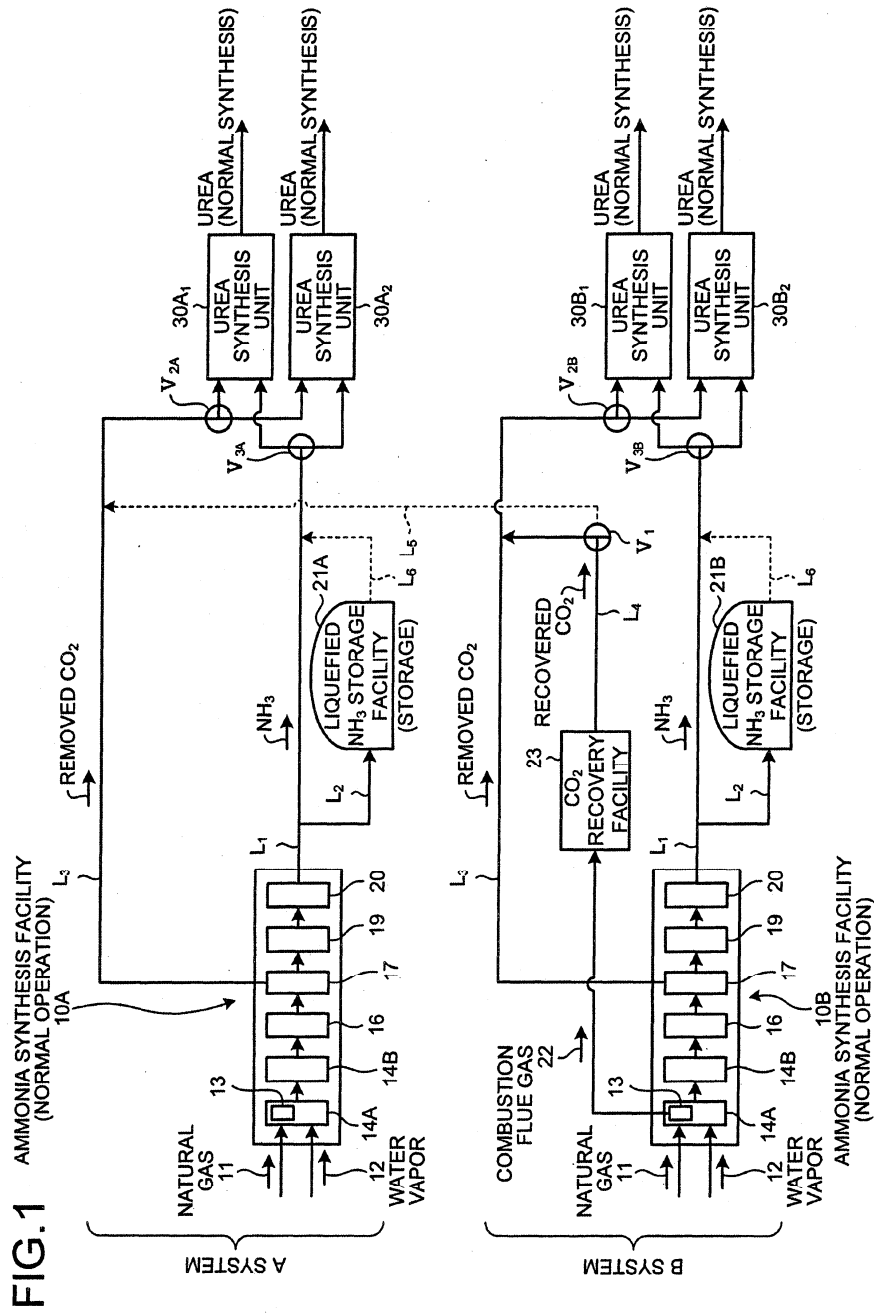
OPERATING METHOD FOR UREA MANUFACTURING PLANT FORMED FROM MULTIPLE SYSTEMS

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To provide an operation method of a urea production plant including multiple systems that can prevent a considerable decrease in urea production even when an ammonia synthesis facility is shut down. At a time of producing urea from CO₂ and ammonia, in a case where urea production plants including at least two systems are arranged in parallel, when an ammonia production facility (10A) of one of the systems is shut down, liquefied ammonia stored in the shut down system is used, and a CO₂ recovery amount in a CO₂ recovery facility (23) in an ammonia synthesis facility (10B) of the other system is increased. Synthesis of urea can be then continued by a urea synthesis unit (30A₁) in the shut down system by using the increased recovered CO₂ and the liquefied ammonia. As a result, operations of the remaining one of the two systems are normally performed to synthesize urea, and urea synthesis can be continued until restart even in the urea production plant of the one system, which has been conventionally shut down.

25 **Fig.1**





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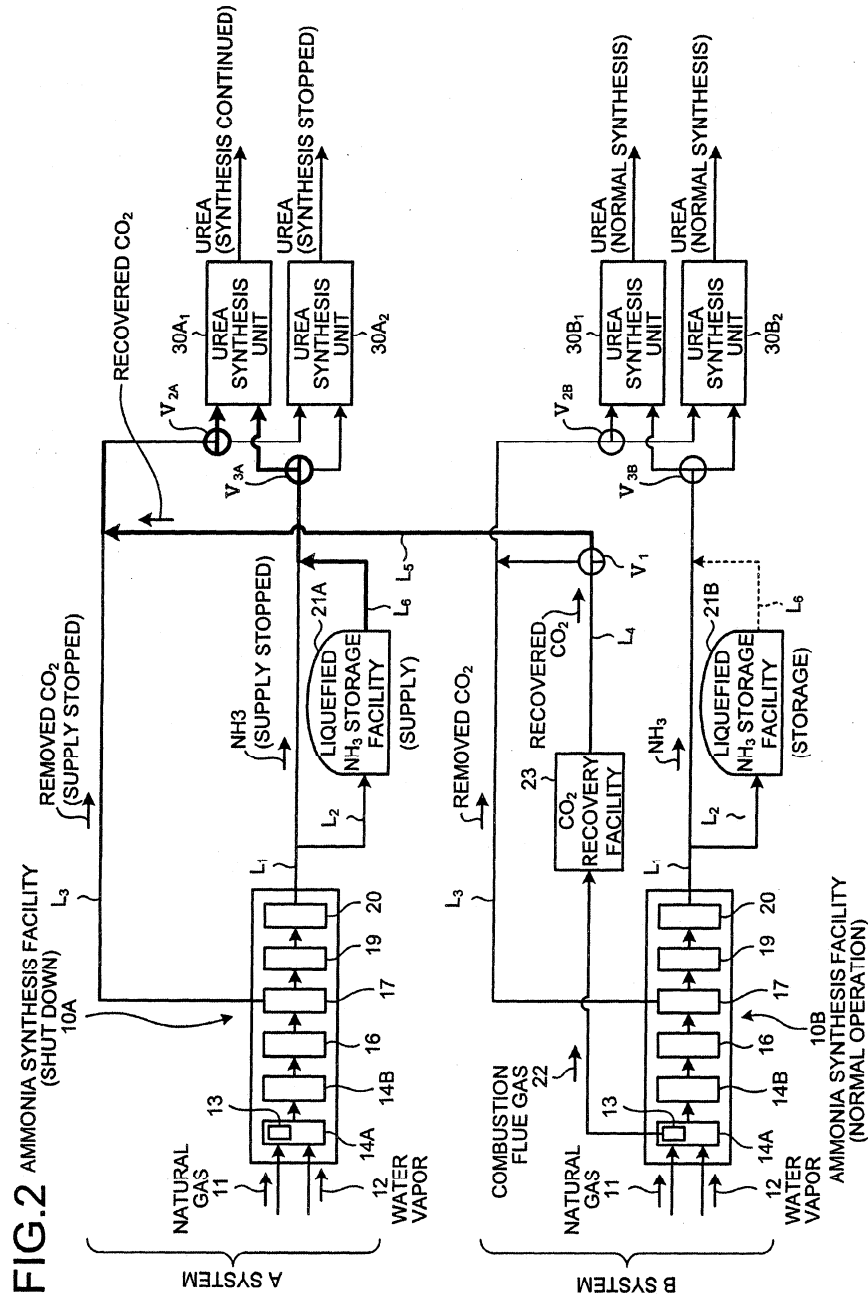
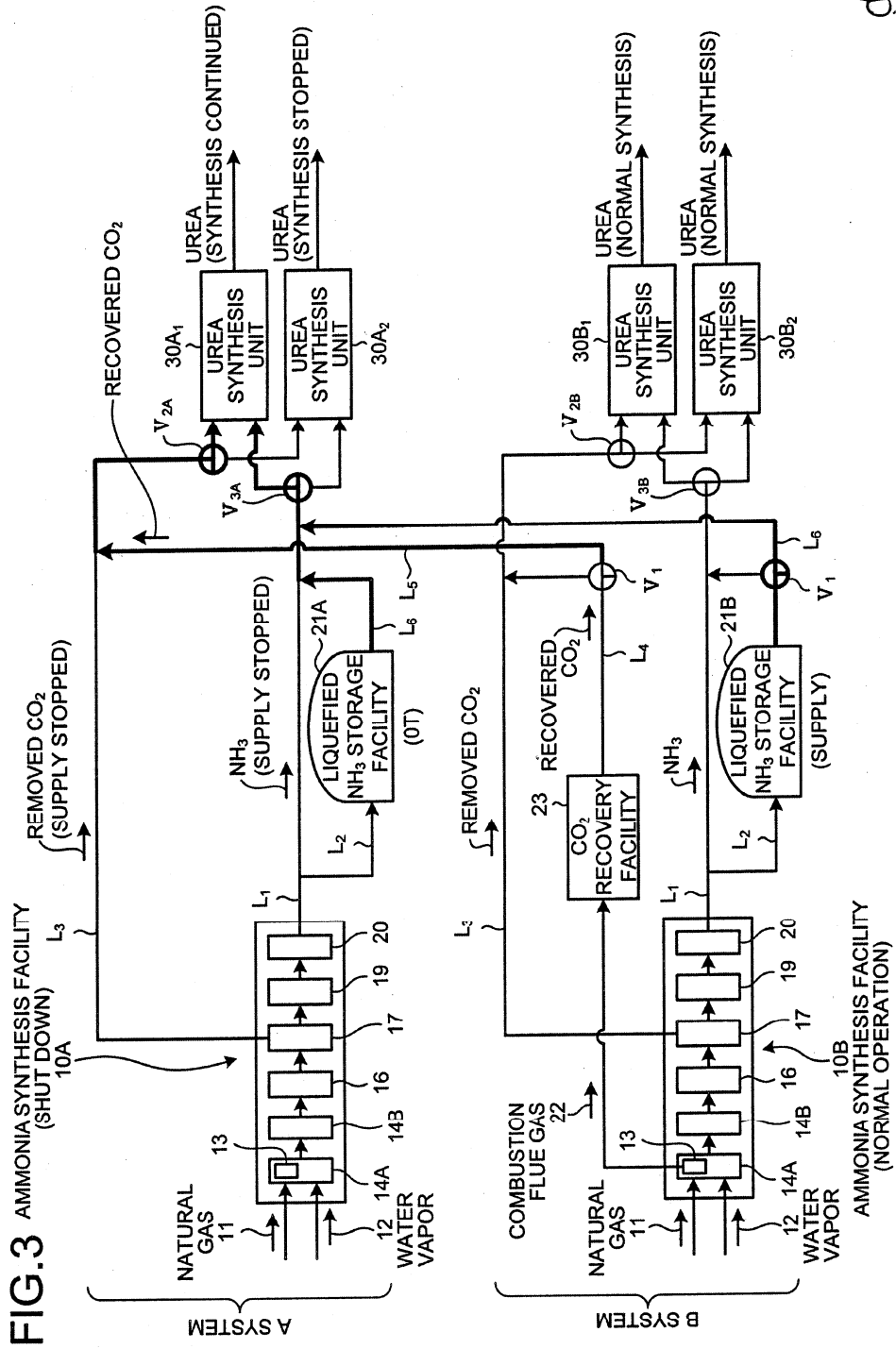


FIG.2 AMMONIA SYNTHESIS FACILITY (SHUT DOWN)

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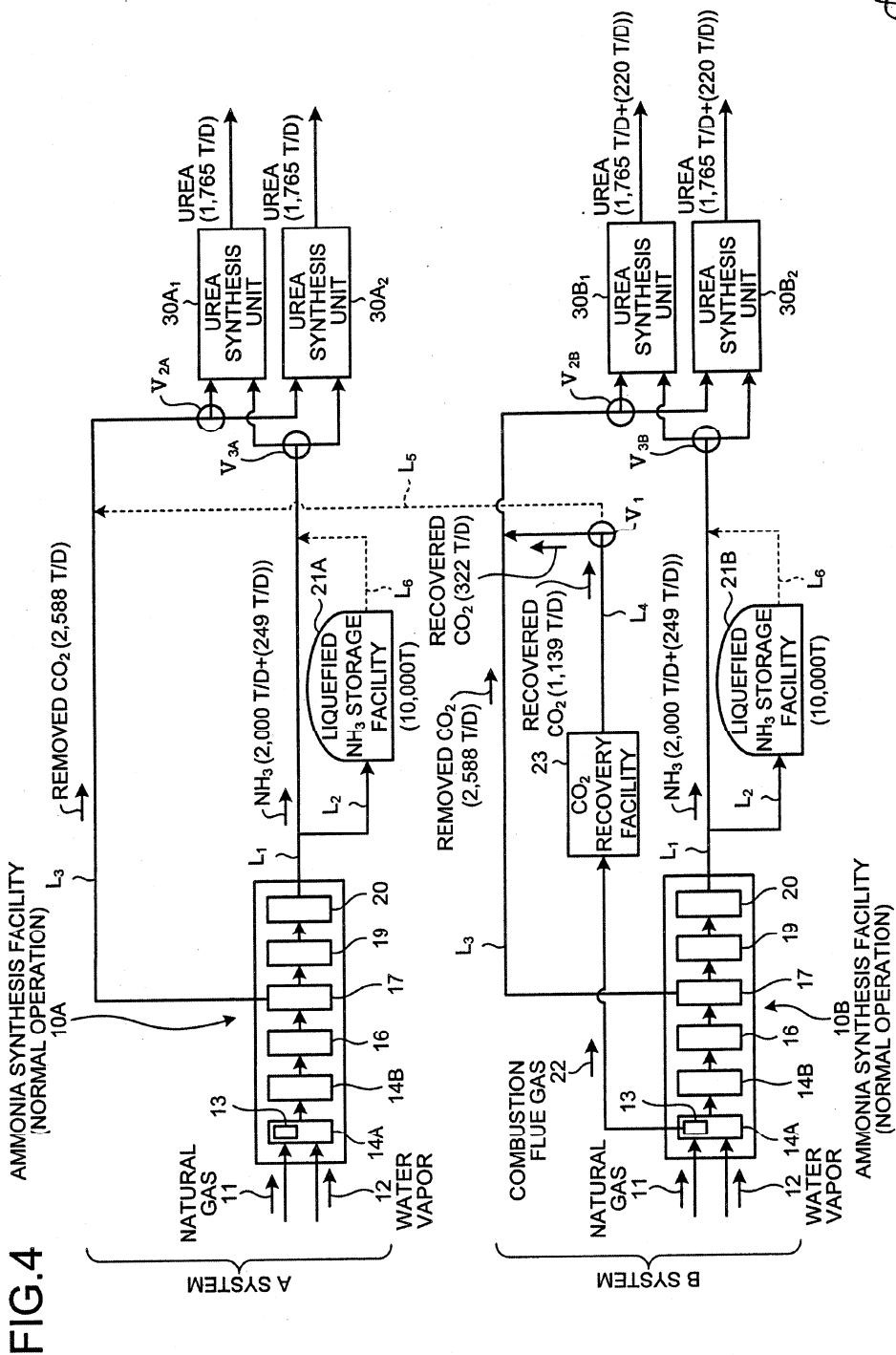
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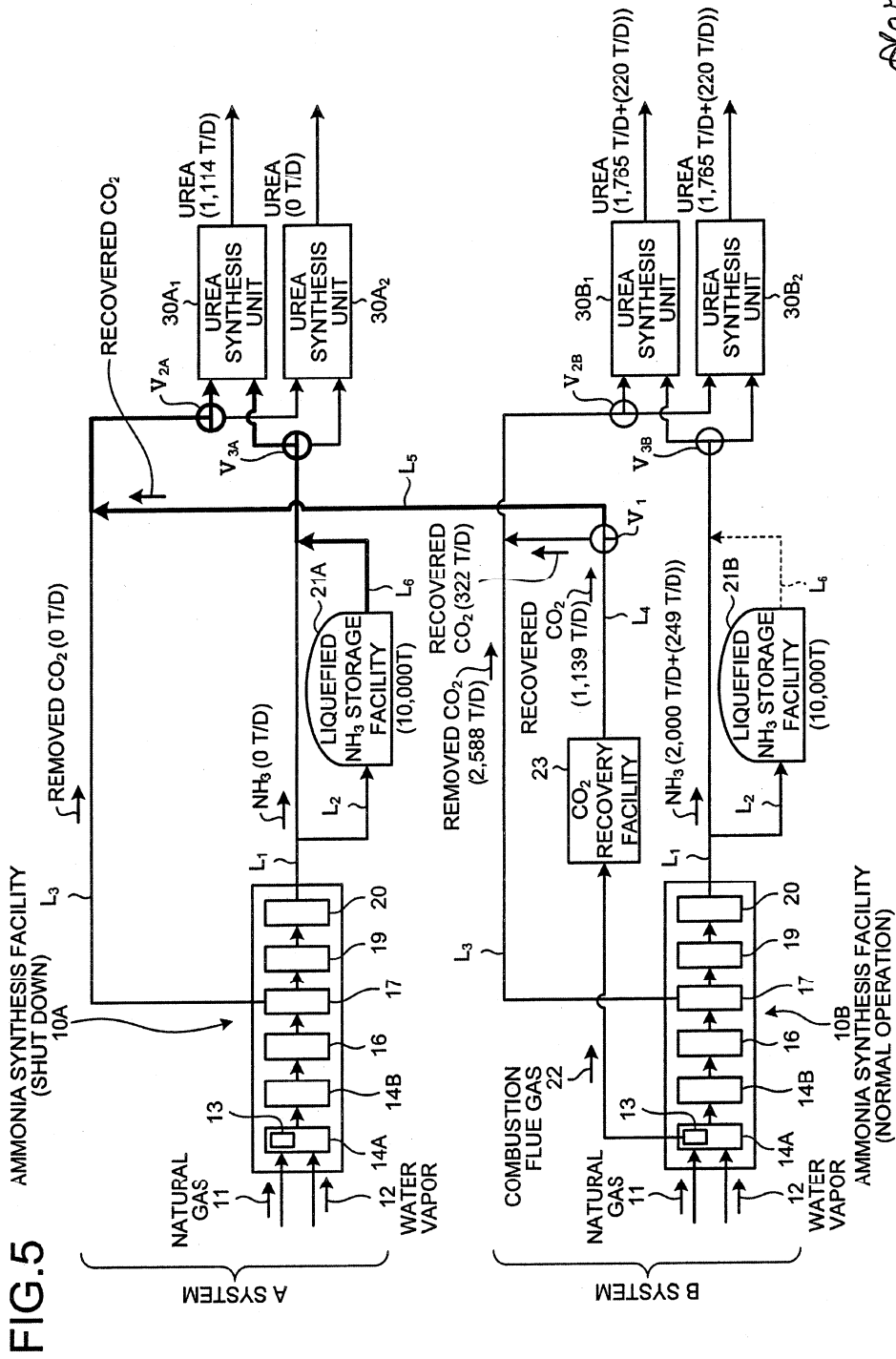
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Mitsubishi Heavy Industries, Ltd.



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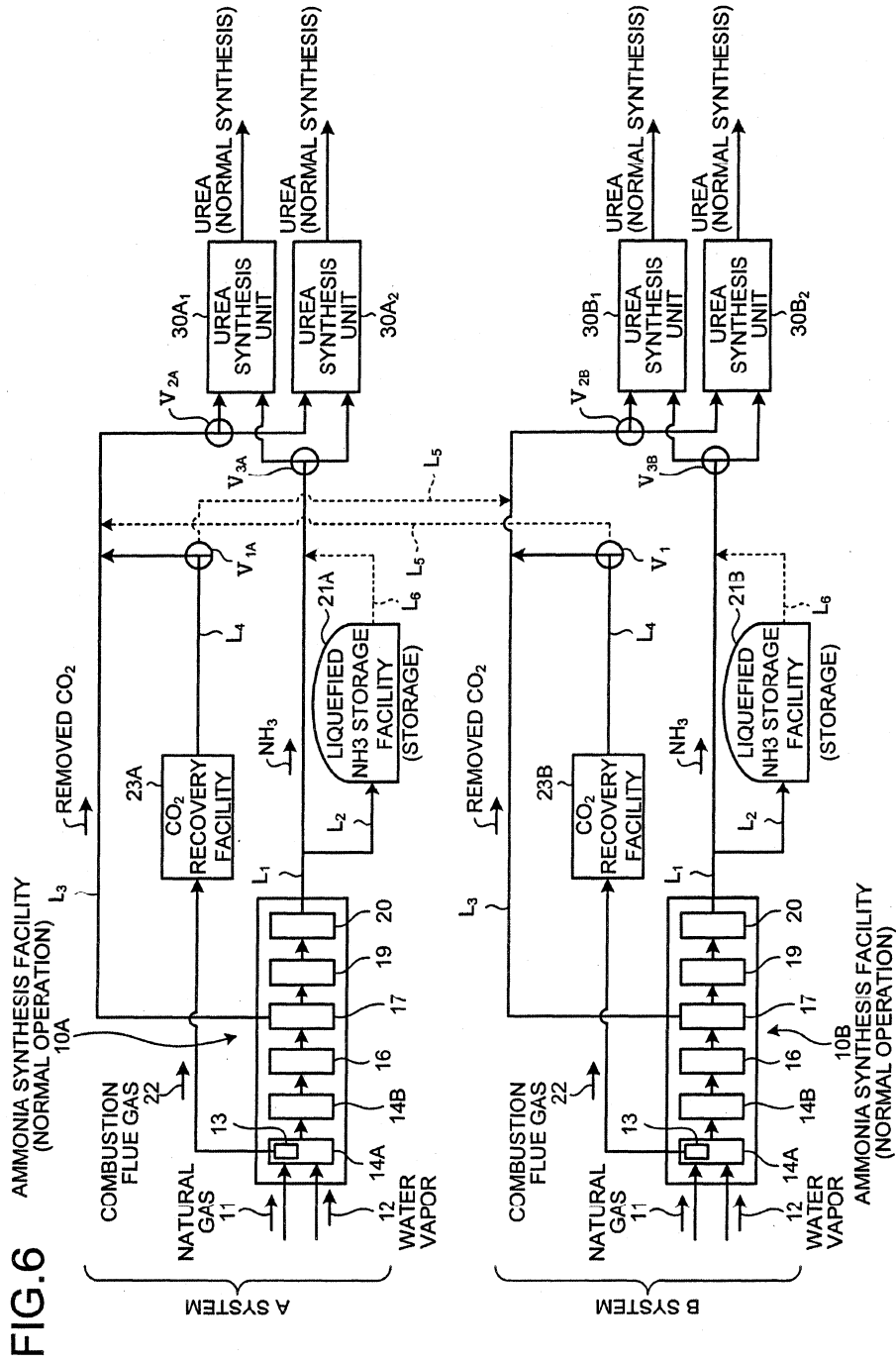
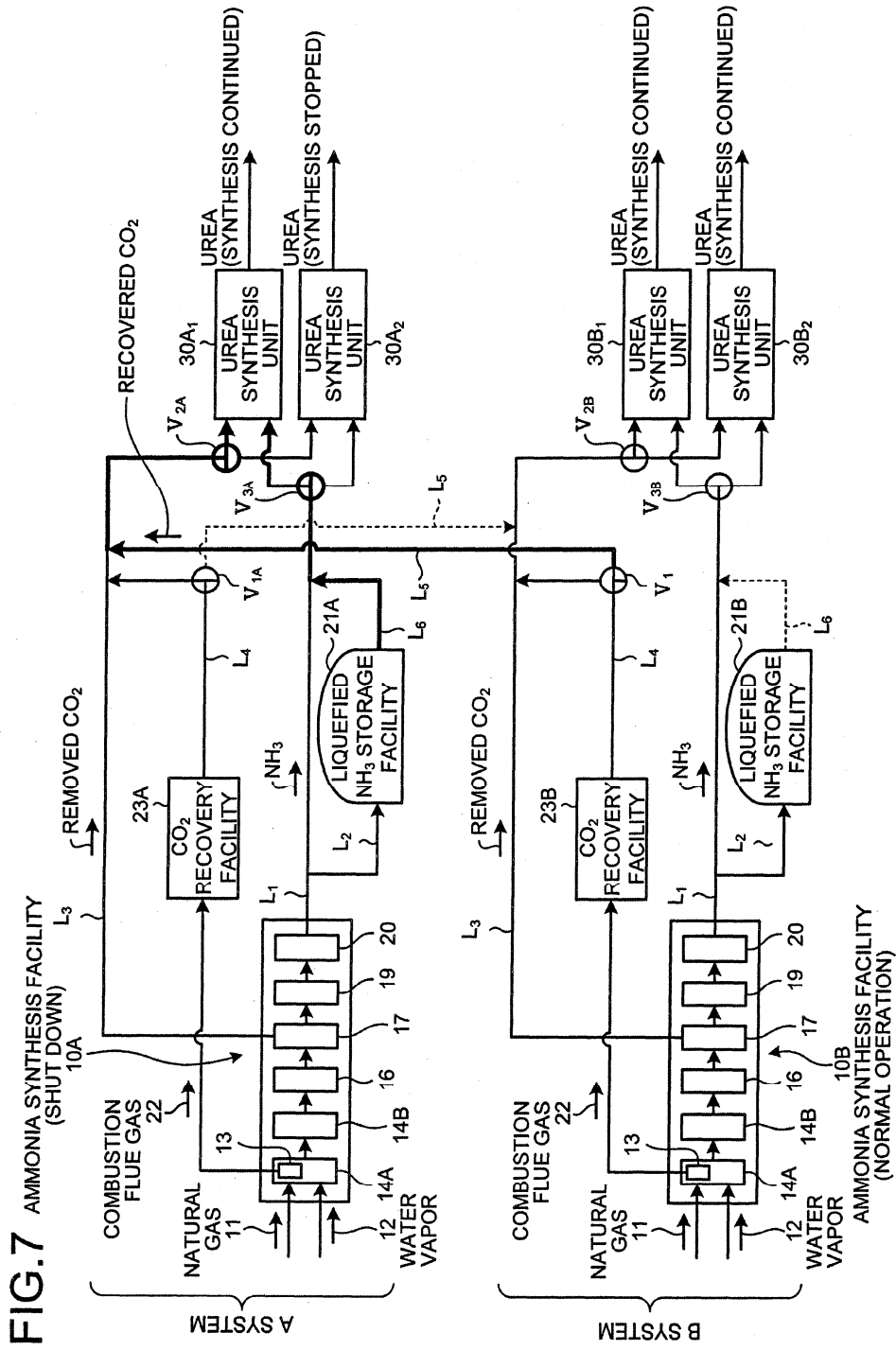


FIG.6

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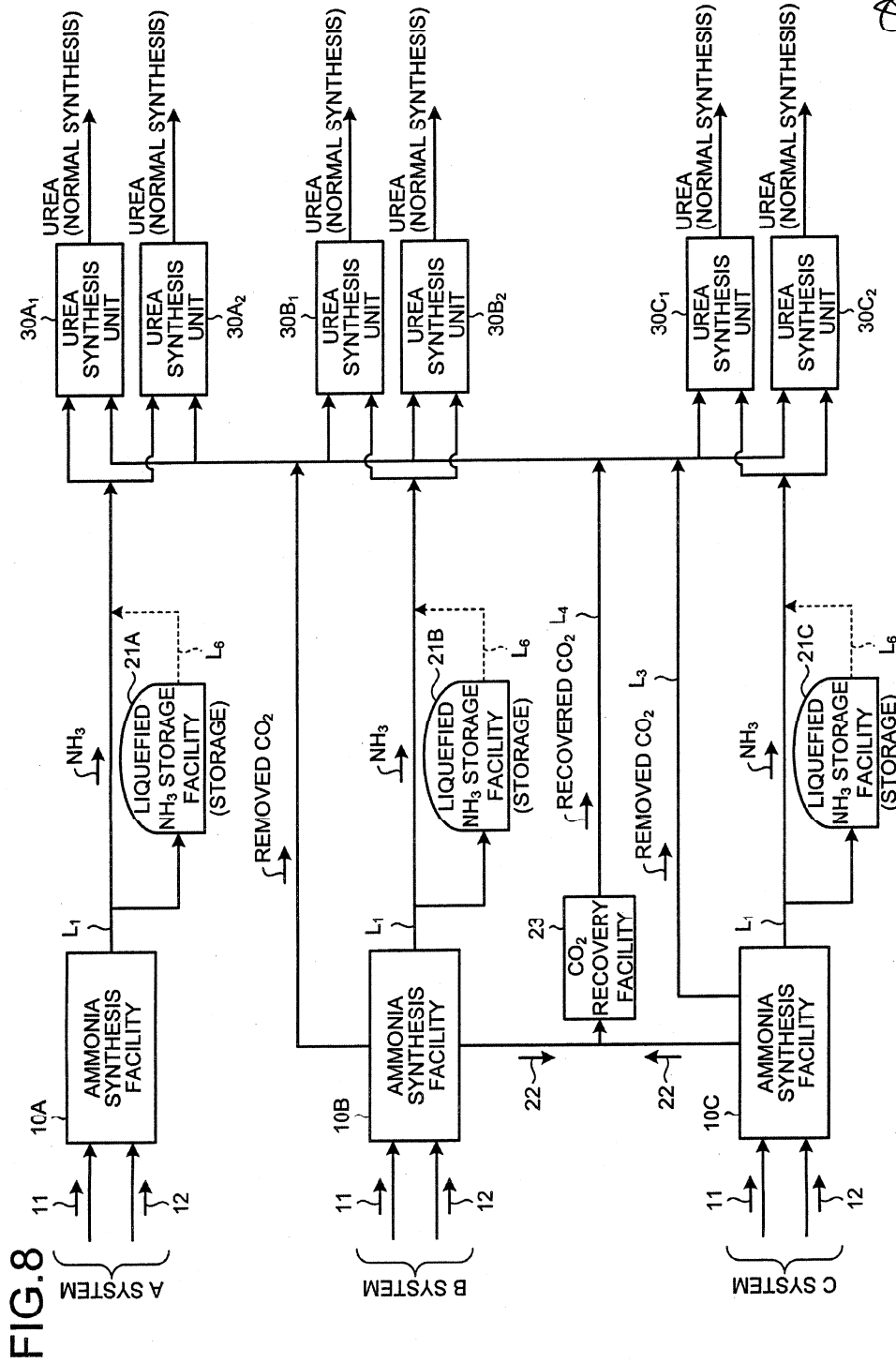
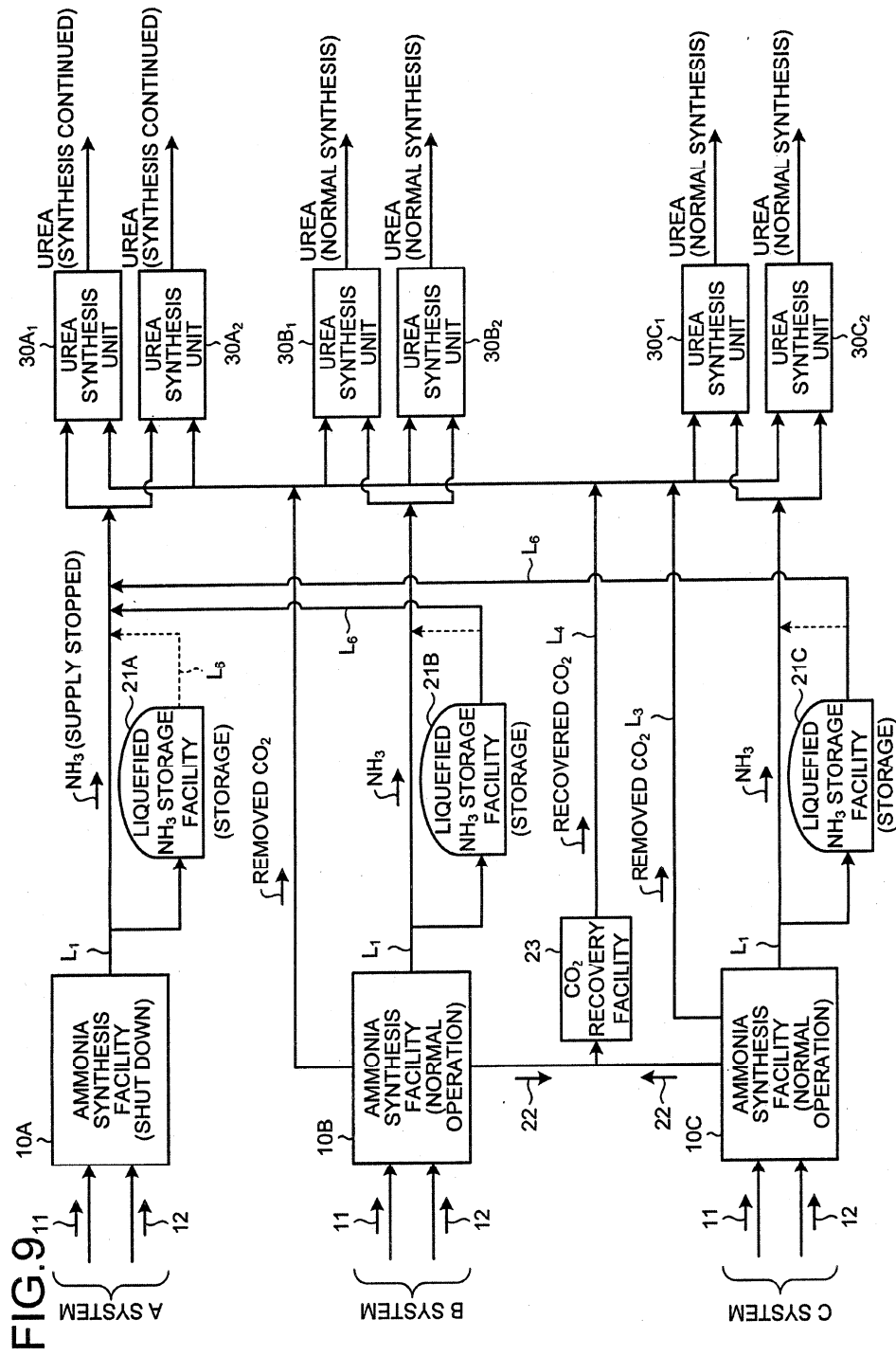


FIG. 8

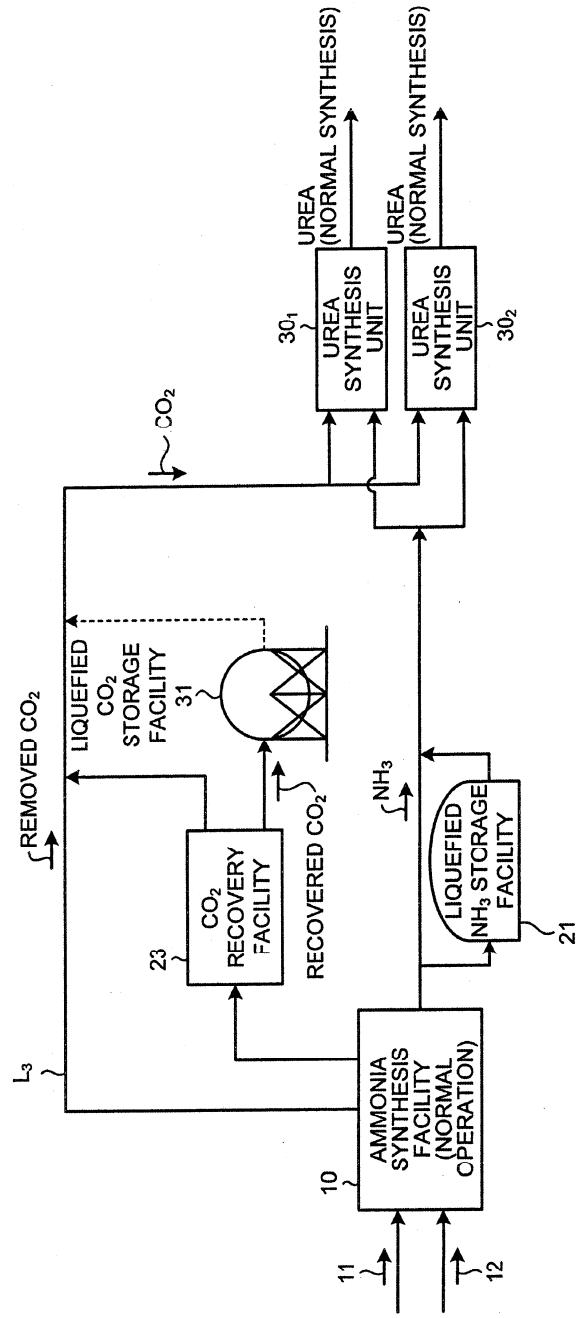
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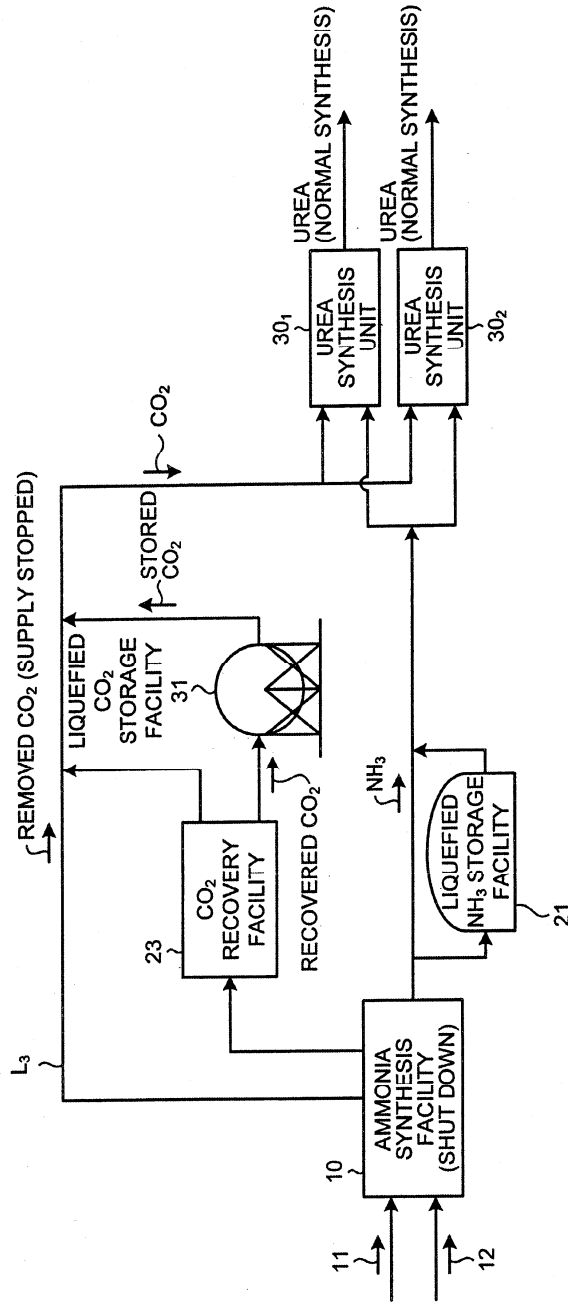
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FIG.10



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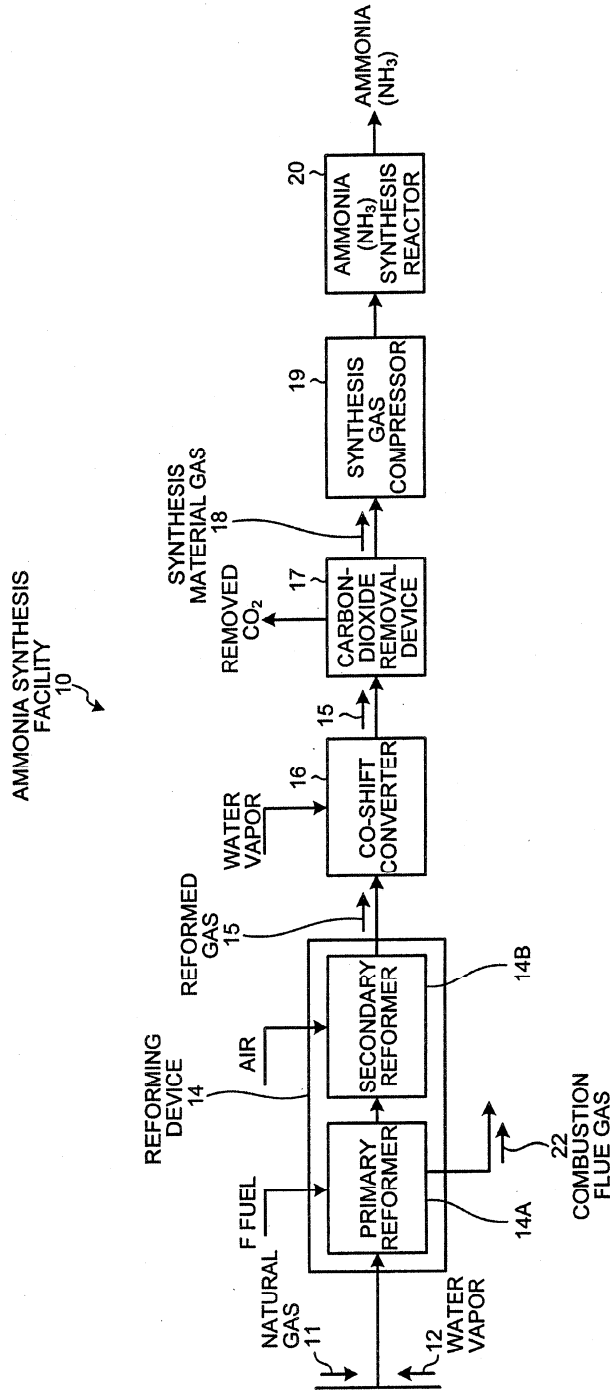
FIG.11



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FIG.12



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Reference Signs List

- 10, 10A to 10C ammonia synthesis facility
- 11 natural gas
- 5 12 water vapor
- 13 reforming furnace
- 14 reforming device
- 15 reformed gas
- 16 CO-shift converter
- 10 17 carbon-dioxide removal device
- 18 synthesis material gas
- 19 synthesis gas compressor
- 20 ammonia synthesis reactor
- 30A₁, 30A₂, 30B₁, 30B₂, 30C₁, 30C₂ urea synthesis unit