

Drawings

Fig. 1

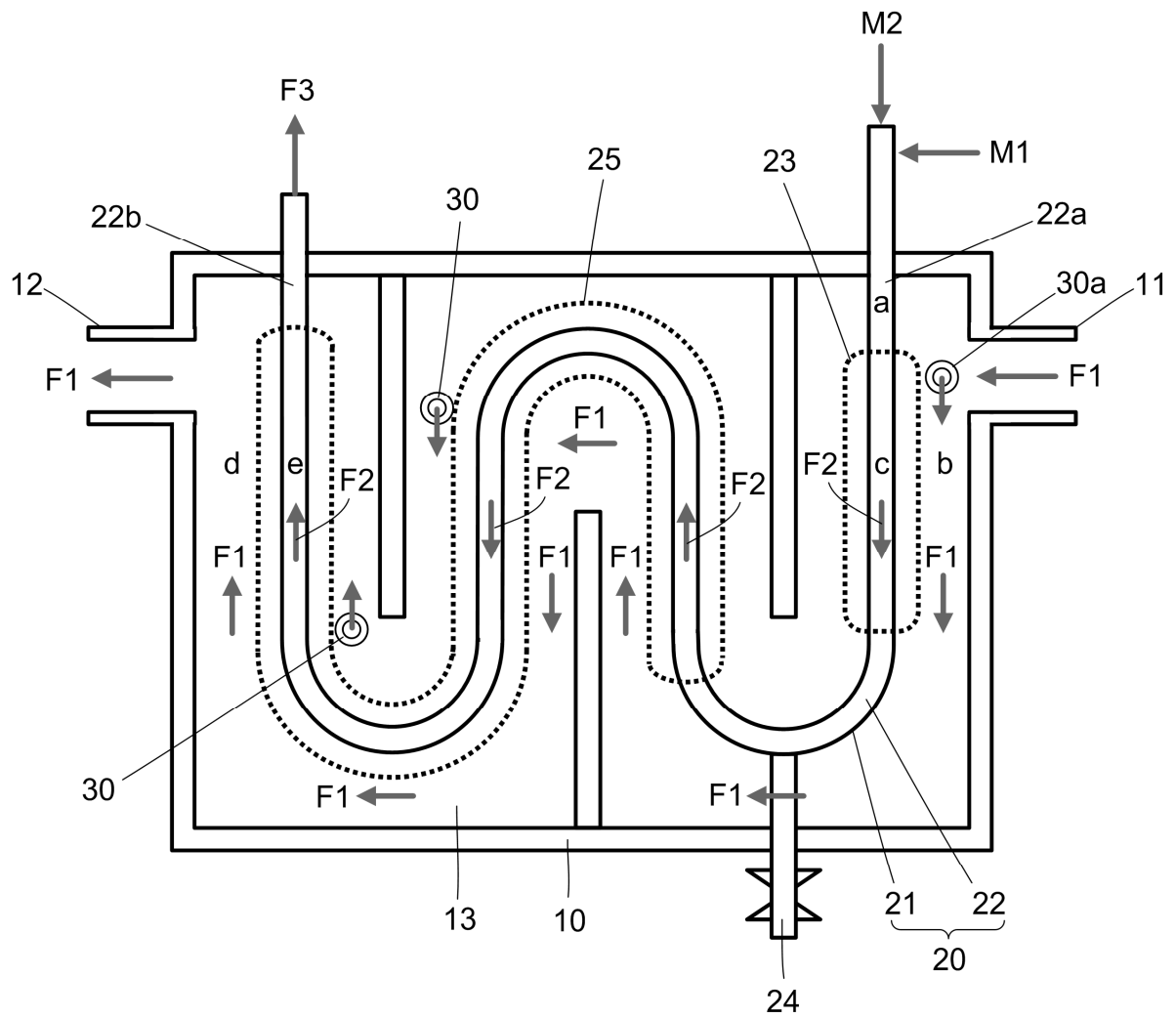


Fig. 2

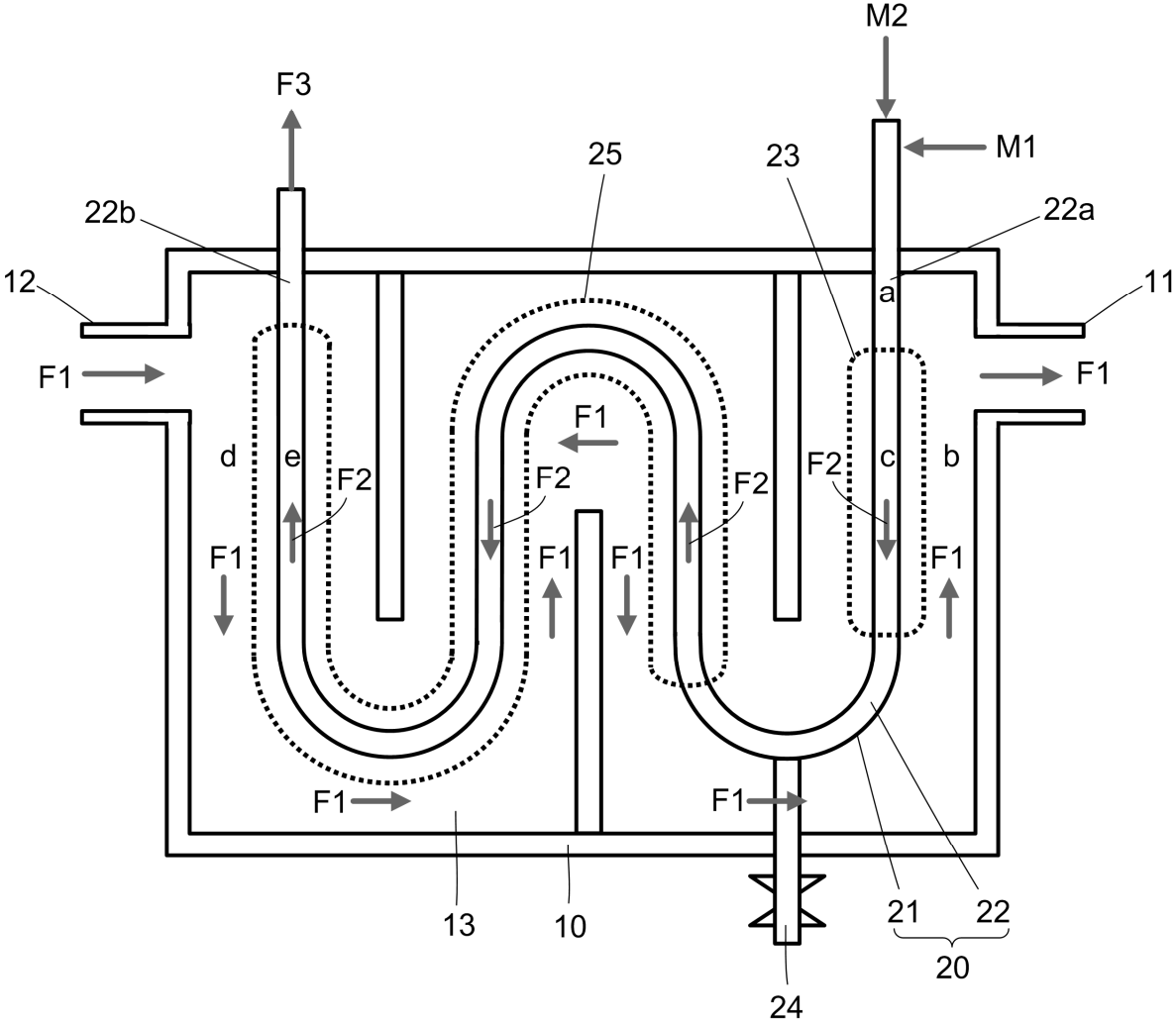


Fig. 3

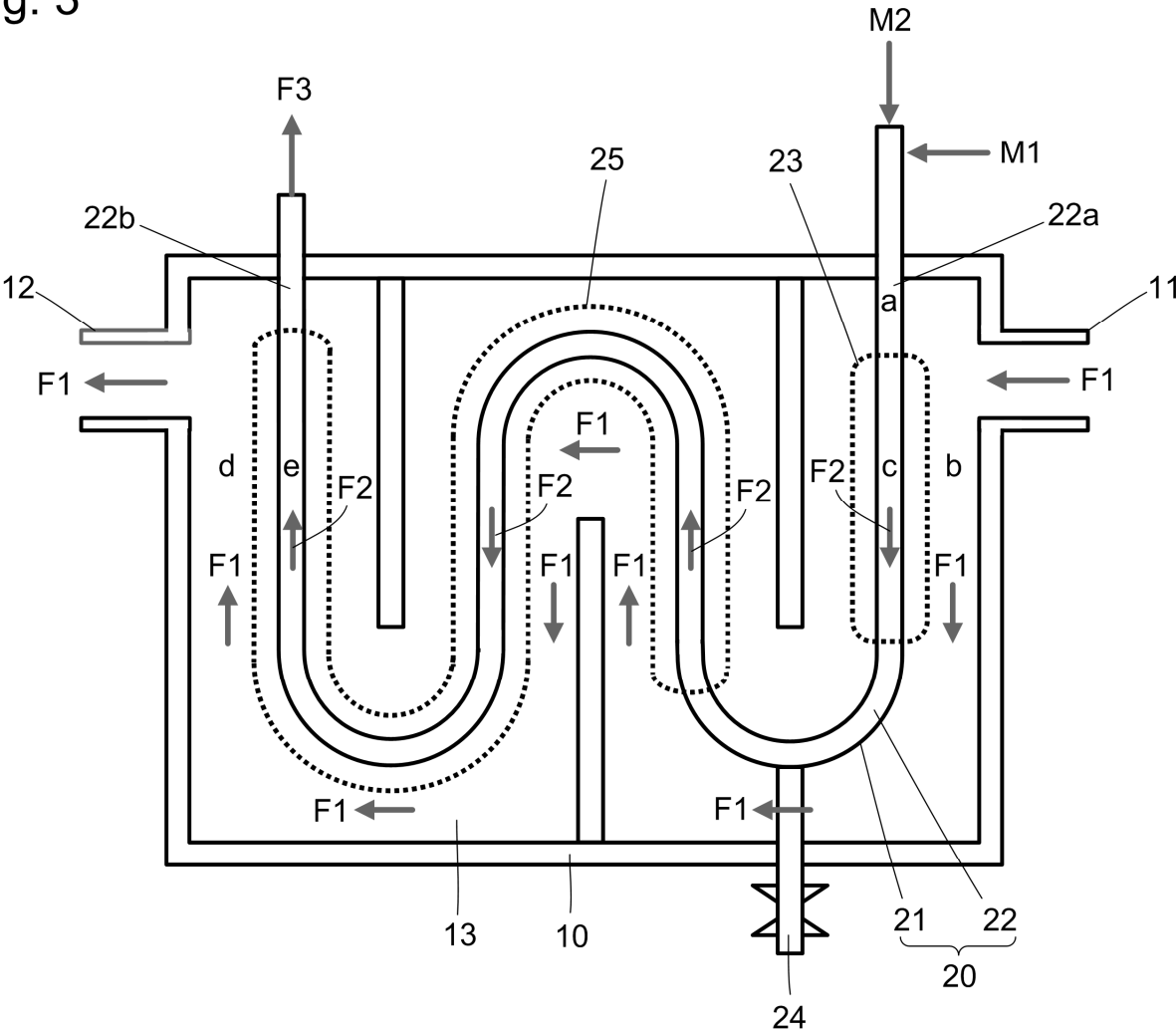


Fig. 4

SYSTEM			COMPARATIVE EXAMPLE 1 (FIG. 2)	COMPARATIVE EXAMPLE 2 (FIG. 3)	EXAMPE (FIG. 1)
			BACKWARD FLOW SYSTEM *1)	FORWARD FLOW SYSTEM *2)	FORWARD FLOW SYSTEM *3
			NO ADDITIONAL HEATING	NO ADDITIONAL HEATING	THERE IS ADDITIONAL HEATING
OPERATION CONDITION	CHIP FUEL (EXTERNAL HEAT GAS)	CHIP (JAPANESE CEDAR) BURNING AMOUNT	27~31kg/h	27~31kg/h	27~31kg/h
		EXTERNAL HEAT GAS FLOW RATE	240~300Nm ³ /h	240~300Nm ³ /h	240~300Nm ³ /h
		TEMPERATURE	1270~1350°C	1270~1350°C	1270~1350°C
	GASIFICATION FLUID (RAW MATERIAL FLUID)	POWDER (JAPANESE CEDAR) SUPPLY AMOUNT	25~27kg/h	34~37kg/h	34~37kg/h
		WATER VAPOR SUPPLY AMOUNT	70~77kg/h	70~77kg/h	70~77kg/h
		TEMPERATURE (a)	750~800°C	750~800°C	750~800°C
PRIMARY GASIFICATION REGION TEMPERATURE		EXTERNAL HEAT SIDE TEMPERATURE (b)	850~880°C	1210~1320°C	1190~1200°C
		REACTION PORTION TEMPERATURE (c)	790~830°C	950~980°C	850~870°C
SECONDARY GASIFICATION REGION TEMPERATURE		EXTERNAL HEAT SIDE TEMPERATURE (d)	1180~1210°C	800~850°C	1150~1200°C
		REACTION PORTION TEMPERATURE (e)	980~1010°C	770~810°C	950~1005°C
PRODUCTION GAS COMPOSITION		H ₂	47.0%	34.4%	46.1%
		CO	20.5%	27.4%	23.7%
		CH ₄	6.5%	9.9%	7.7%
		C ₂ H ₄	1.0%	4.0%	1.0%
		CH ₂	20.0%	19.2%	18.4%
EVALUATION			(see *4)	(see *5)	(see *6)

*1) RAW MATERIAL FLUID AND EXTERNAL HEAT GAS ARE IN OPPOSITE DIRECTIONS

*2) RAW MATERIAL FLUID AND EXTERNAL HEAT GAS ARE IN FORWARD DIRECTION

*3) RAW MATERIAL FLUID AND EXTERNAL HEAT GAS ARE IN FORWARD DIRECTION

*4) PRIMARY GASIFICATION TEMPERATURE IS LOW AND LOAD (TREATMENT AMOUNT OF POWDER FOR GASIFICATION) IS NOT INCREASED

*5) QUALITY OF PRODUCTION GAS COMPOSITION IS NOT SUFFICIENT

*6) BOTH TARGET LOAD AND GAS COMPOSITION ARE ACHIEVED

Fig. 5

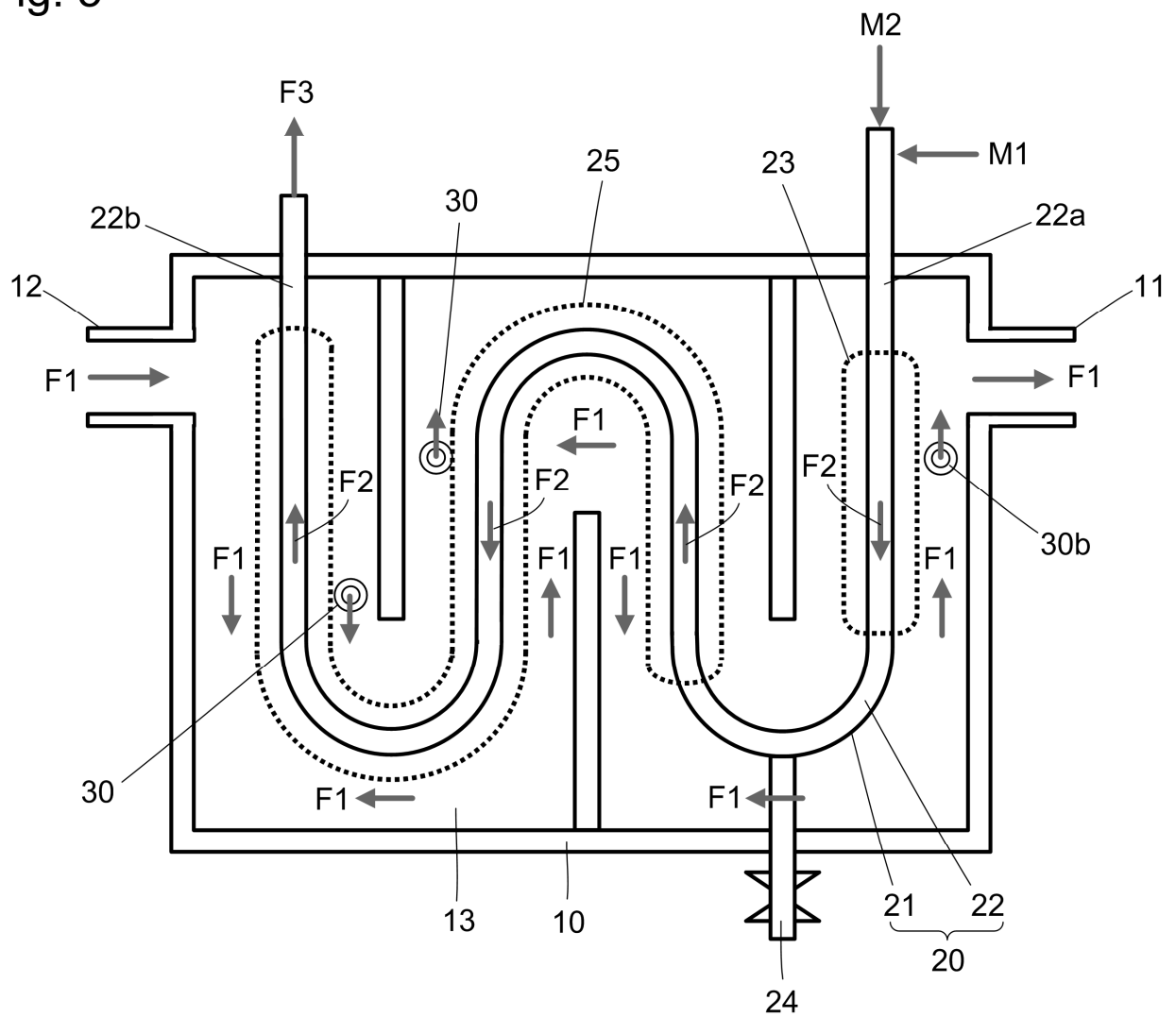


Fig. 6A

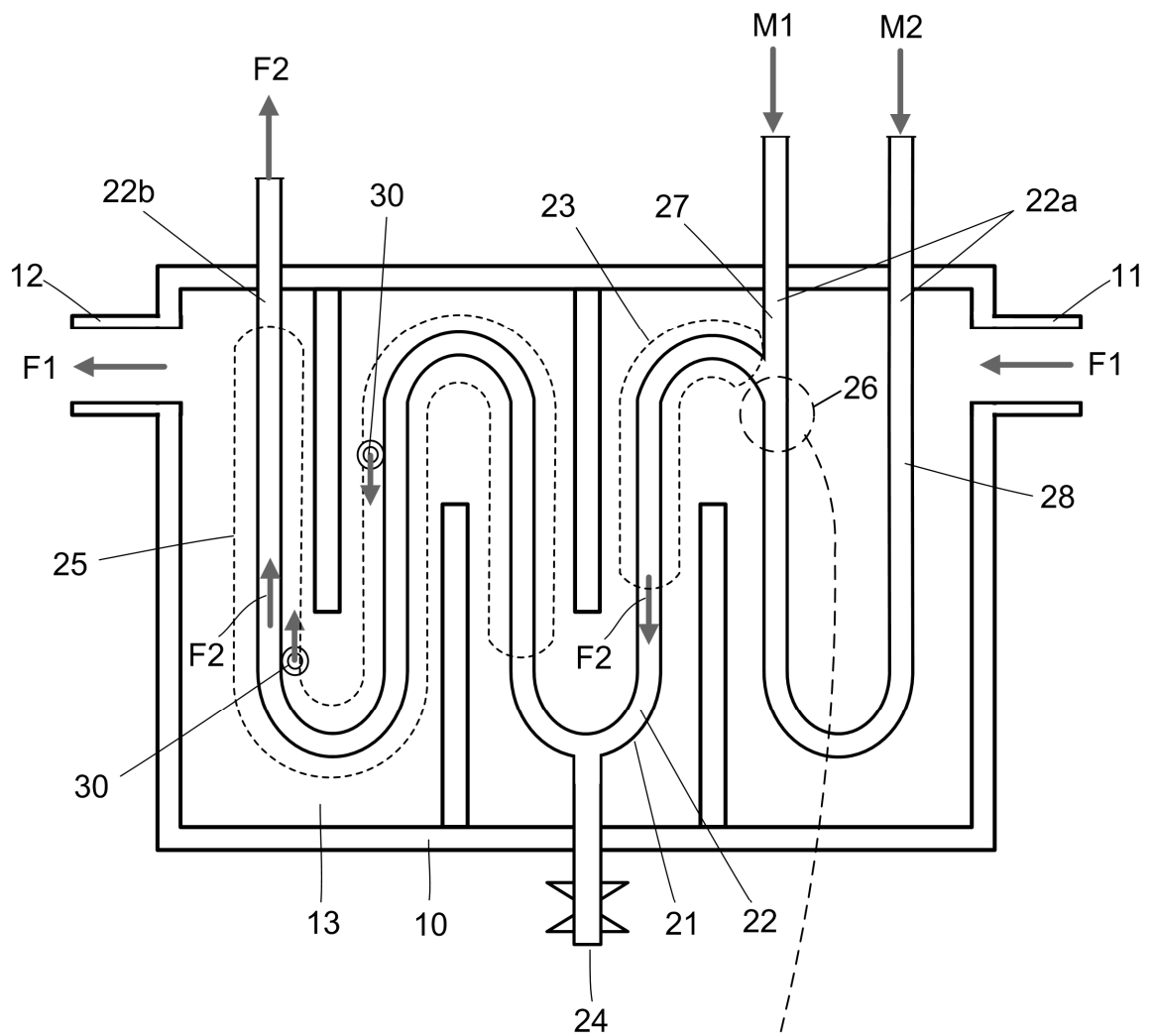
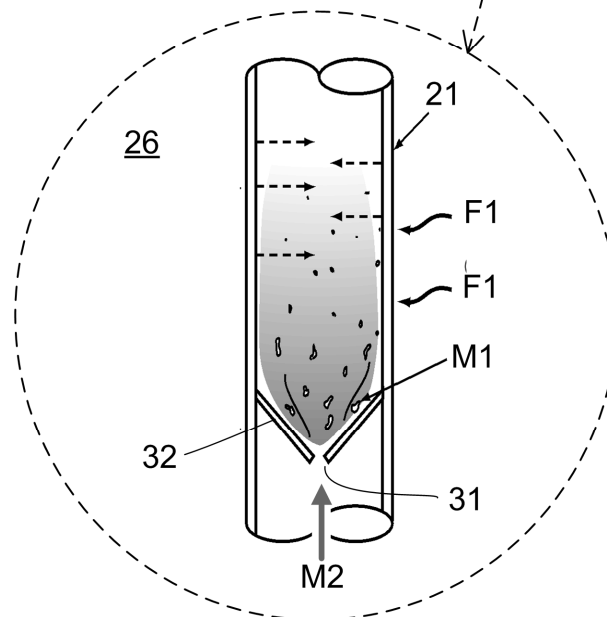
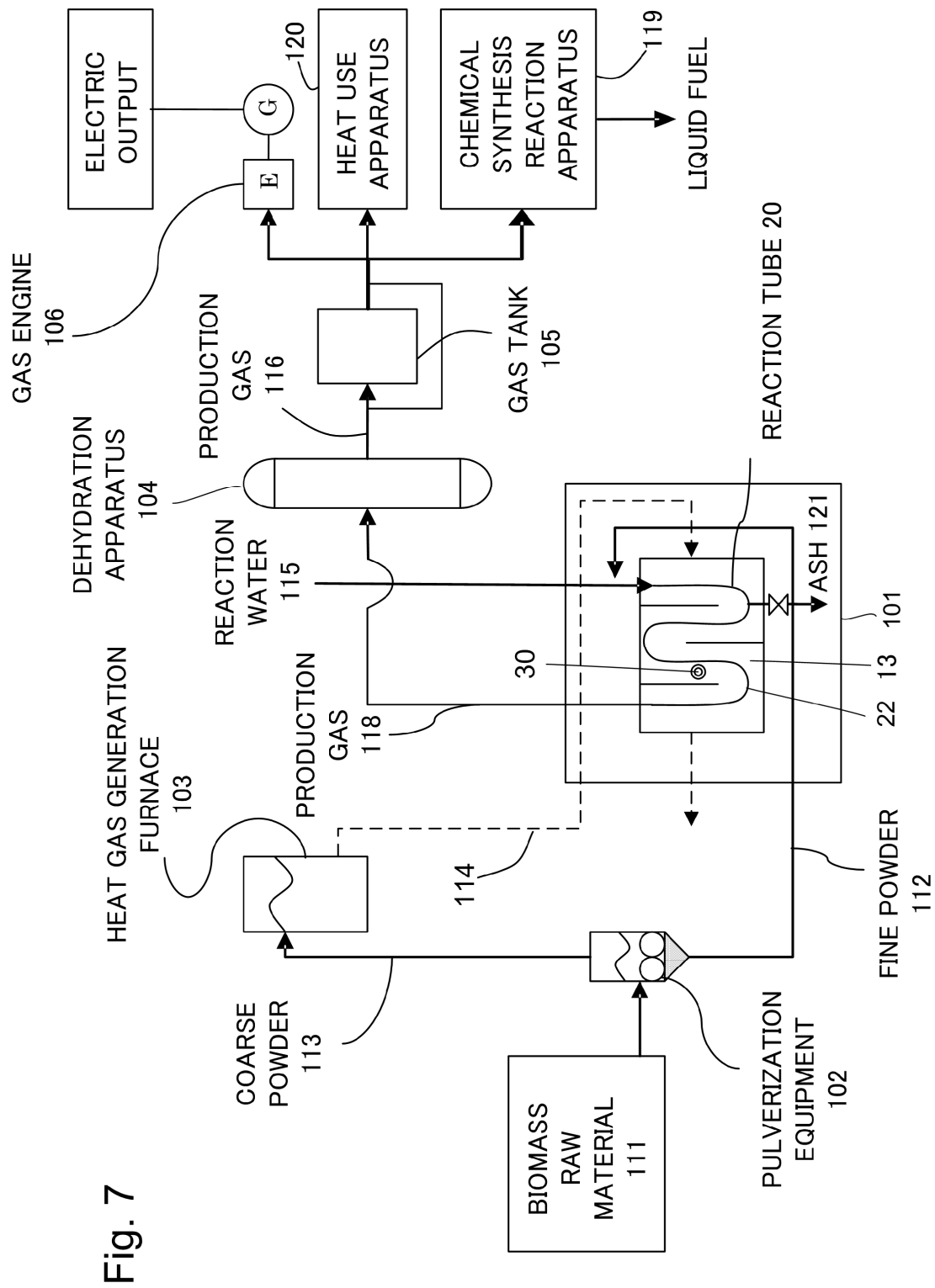


Fig. 6B





BIOMASS ENERGY USE SYSTEM