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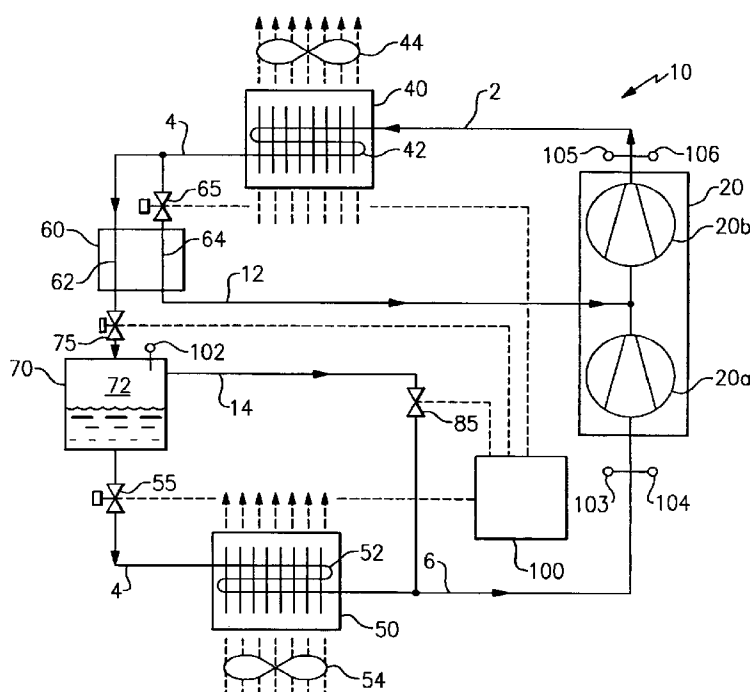


FIG.1

(57) Abstract: A refrigerant vapor compression system includes a refrigerant-to-refrigerant heat exchanger economizer and a flash tank disposed in series refrigerant flow relationship in the refrigerant circuit intermediate a refrigerant heat rejection heat exchanger and a refrigerant heat absorption heat exchanger. A primary expansion valve is interdisposed in the refrigerant circuit upstream of the refrigerant heat absorption heat exchanger and a secondary expansion valve is interdisposed in the refrigerant circuit upstream of the flash tank. The flash tank functions as a refrigerant charge storage reservoir wherein refrigerant expanded from a supercritical pressure to subcritical pressure separates into liquid and vapor phases. A refrigerant vapor bypass line is provided to return refrigerant vapor from the flash tank to the refrigerant circuit downstream of the refrigerant heat absorption heat exchanger. The primary expansion valve and a flow control valve interdisposed in the refrigerant vapor bypass provide refrigerant charge management.