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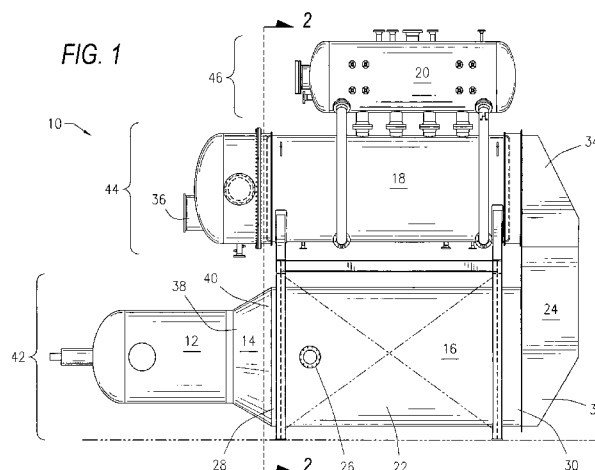
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(54) Title: COMPACT, TIERED SULFUR RECOVERY UNIT



(57) Abstract: A compact, tiered sulfur recovery unit (10) having a burner (12), a combustion chamber (14), a reaction chamber (16), a waste heat boiler (18) and a steam drum (20). The waste heat boiler (18) is mounted above the reaction chamber (16), and the steam drum (20) is mounted above the waste heat boiler (18), resulting in a three-tiered, compact design, requiring only a single platform for space. The reaction chamber (16) comprises a horizontal body (22) and an upright plenum (24). The reaction chamber (16) includes an inlet (26) for receipt of acid gas (H₂S). One end of the horizontal body (22) of the reaction chamber (16) is fluidly attached to the combustion chamber (14), while the other end of the horizontal body (22) of the reaction chamber (16) is fluidly attached to a lower end (32) of the upright plenum (24) of the reaction chamber (16). An upper end (34) of the upright plenum (24) of the reaction chamber (16) is fluidly attached to the waste heat boiler (18). The waste heat boiler (18) includes an outlet (36) for the release of SO₂ for downstream sulfur blowdown to produce additional elemental sulfur. The waste heat boiler (18) is fluidly attached to the steam drum (20).